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Contents

Foreword

Welcome to the **First Issue 2014** of the Journal of Social Sciences and Humanities (JSSH)!

JSSH is an open-access journal for the Social Sciences and Humanities that is published by Universiti Putra Malaysia Press. It is independently owned and managed by the university and run on a non-profit basis for the benefit of the world-wide social science community.

This issue contains **26 articles**. The authors of these articles come from different countries, namely, **Malaysia, Iran, Vietnam, Nigeria** and **Slovakia**.

The regular articles cover a wide range of topics, from a case study to examine the determinants of consumers' willingness-to-pay for monorail transportation in Penang, Malaysia *(Lee Lian Yee* and *Cheah Yong Kang),* the U.S. geopolitical code and the role of the Persian Gulf oil in the U.S. military intervention in 2003 *(Saeid Naji* and *Jayum A. Jawan)*, a study on individual degree of collectivism/individualism and shyness of the Malaysian people and the kinds of conflict resolution practice that they prefer *(Mohamad Taufik bin Mohamad* and *Azlinda Azman),* to a study on the challenges and potentials of and experts' opinions on developing a Malaysian garden identity *(Osman Mohd Tahir* and *Mina Kaboudarahangi).*

The research studies, on topics related to linguistics, education, management studies, anthropology and psychology, include a study of assessing students' oral achievement in an urban school in Malaysia *(Kanthimathi Letchumanan, Karthiyaini Devarajoo* and *Paramasivam Muthusamy),* the rural learning environment and pupils' learning of the English language *(Yazan Abdel Aziz Semreen AL-Wreikat, Muhamad Kamarul Kabilan Bin Abdullah* and *Anna Christina Abdullah)*, a study of political cartoons in the first decade of the millennium *(Iro Sani, Mardziah Hayati Abdullah, Afida Muhammad Ali* and *Faiz S. Abdullah),* a study of the effect of exposure to cartoons on language proficiency *(Taher Bahrani* and *Tam Shu Sim)*, the acquisition of the verb movement parameter in English by adult Arabic speakers *(Muneera Yahya Ali Muftah* and *Wong Bee Eng),* the impact of a multilingual environment on the personal identity among German mother-tongue speakers living in Malaysia *(Miroslava Majtanova* and *Mohd. Azidan Abdul Jabar),* a case study on diversifying the input and the outcome in the classroom activities *(Phuong thi Anh Le),* the experiences of Malaysian school teachers in lifelong learning *(Kok Jin Kuan),* job satisfaction among school counsellors in secondary schools in Mid-Western Nigeria *(Eduwen, F. I., Okoza, J., Aluede, O.* and *Ojugo, A. I),* a review of definitions and identifications of specific learning disabilities in Malaysia *(Dzalani H.* and *Shamsuddin K.),* the teaching styles adopted by science teachers and their students' intrinsic motivation in order to be persistent in learning the subject *(Sharifah Sariah Syed Hassan* and *Mohamed Rajab),* a case study of the relationship between problem-solving and informal systems-

thinking skills in a Malaysia university *(Liew, C.Y., Lee, E.A.L., Goh, K.T.H.* and *Foo, K. K.),* exploring lecturers' perception on learning organization dimensions and demographic variables in technical and vocational colleges *(Khosrow Nazari, Zaidatol Akmaliah Bte Lope Pihie, Khairuddin Bin Idris* and *Ramli Bin Basri),* a study on the level of satisfaction towards the flood management system in Kelantan, Malaysia *(Tuan Pah Rokiah Syed Hussain, Abd Rahim Md Nor* and *Hamidi Ismail),* a study on improving engineering performance through leadership, CE and teamwork in a Malaysian semiconductor firm *(Ng Poh Kiat* and *Jee Kian Siong),* a case study of turnover intention from the perspective of job demand, job control and social support private higher learning education in the Klang Valley *(Afdzal Aizat Ramli, Shahrul Nizam Salahudin, Zaifudin Zainol* and *Turiman Suandi),* a study identifying factors influencing mathematical problem solving among matriculation students in Penang *(Ong Hong Choon* and *Lim Joo Sim),* a qualitative study on stigma as part of identity development of gay men in Penang *(Mark Stephen Felix),* a study on Chinese Malaysians' worship of *Datuk Gong* in Malaysia *(Chin Yee Mun* and *Lee Yok Fee)*, socioeconomic status (SES), physical activity (PA), physical fitness and sedentary activity in Iranian children aged 7-11 years *(Samad Esmaeilzadeh)*, psychometric evaluation of the Australian Inventory of Family Strengths (AIFS) on rural Malay families in Malaysia *(Zarinah Arshat* and *Rozumah Baharudin)* and a study of psychometric properties of the Malay version of the job satisfaction survey among Malaysian military personnel *(Ang Chin Siang, Mansor Abu Talib, Rumaya Juhari* and *Zainal Madon)*.

I anticipate that you will find the evidence presented in this issue to be intriguing, thought provoking, and useful in reaching new milestones. Please recommend the journal to your colleagues and students to make this endeavour meaningful.

I would also like to express my gratitude to all the contributors who have made this issue possible, as well as the authors, reviewers and editors for their professional contribution. Last but not least, the editorial assistance of the journal division staff is also fully appreciated.

JSSH is currently accepting manuscripts for upcoming issues based on original qualitative or quantitative research that opens new areas of inquiry and investigation.

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SOCIAL SCIENCES & HUMANITIES

Review Article

A Review of Definitions and Identifications of Specific Learning Disabilities in Malaysia and Challenges in Provision of Services

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ABSTRACT

This paper aims to highlight issues on differences in definitions and terminologies of specific learning disabilities used in Malaysia compared to those used in some other countries based on published and unpublished materials on learning disabilities/specific learning disabilities. In Malaysia, a broad generic definition of 'learning disabilities' is adopted and this approach post challenges in providing support and services for those with this disabilities. Lack of standardized and culturally sensitive measurements and the limited number of professionals with specialized training to deal with identification of those with specific learning disabilities are other challenges faced in this country. This paper advocates a review of the current definitions of specific learning disabilities to one that can better guide planning and provision of appropriate services to the target group in Malaysia.

Keywords: Definition, learning disabilities, specific learning disabilities

INTRODUCTION

The term learning disabilities (LD) was first established in the United States in 1962 by Dr. Samuel Kirk . This terminology is used to describe students who puzzled parents and teachers with their low academic achievement despite normal physical appearance like that of of typical students (Vaughn *et al*., 2000). To date, the term Specific Learning Disabilities (SLD) is commonly used in the international context to refer to those previously known as having LD. In the United States, about 4% of the students attending public schools are estimated to have SLD.

In Malaysia, the Social Welfare Departments (SWD) as cited in Aminah Bee et al. (2009) reported that 38.7% of registered persons with disabilities in the country are those having 'learning disabilities'. The significant number reported by the SWD raised concern on the criteria used for identification. In addition, ineffective interventions for persons with LD/SLD may be due to the very broad and heterogeneous definition of 'learning disabilities' used locally. The current criteria used in identification of persons with LD/SLD in Malaysia lead to misclassification and subsequent inadequacy of services.

This paper aims at highlighting issues of definitions and terminologies related to LD/SLD used in Malaysia. It will also compare definitions used in other countries with that used locally and the challenges this posed on services provision for those labelled as having SLD. This review was based on analysis of published and unpublished materials on learning disabilities in Malaysia and overseas.

GLOBAL DEFINITIONS OF SPECIFIC LEARNING DISABILITIES

The definition of SLD used in the United States (U.S.) has been widely adopted by other countries such as Canada (Learning Disabilities Association of Canada, 2002), Australia (Klassen *et al.*, 2005), Japan (Kataoka *et al.*, 2001), Hong Kong (Lau, 1998; Hong Kong Society of Child Neurology and Developmental Paediatrics (HKCNDP), 2006) and South Korea (Jung, 2007).

The most commonly cited definition of SLD is the definition established by IDEA (Individual with Disability Education Act) and the National Joint Committee on Learning Disabilities (NJCLD) (Kavale & Forness, 2000). The definition held by NJCLD, [the committee that was formed by the representatives of eight U.S. national organizations that have major interest in SLD], is found to be the most precise definition for SLD and has obtained a high level of acceptance among many national associations in the United States (Hamill, 1990; Hammond, 1996).

NJCLD refers SLD as "a heterogeneous group of disorders manifested by significant difficulties in the learning and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems in self-regulatory behaviours, social perception, and social interaction may exist with SLD but do not, by themselves, constitute a SLD. Although SLD may occur concomitantly with other disabilities (e.g.: sensory impairment, intellectual disabilities, serious emotional disturbance), or with extrinsic influences (e.g. cultural differences, insufficient or inappropriate instruction), they are not the result of those conditions or influences" (NJCLD, 1998, p.1).

In Japan, the Committee on Guidance/ Education Planning for Children with Learning Disabilities, 1999, defined SLD as the disability that consists of

"varied conditions, fundamentally without intellectual disabilities, manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, calculating or reasoning. Learning disabilities are presumed to be caused by central nervous system dysfunction rather than visual impairment, hearing impairment, intellectual handicap, emotional disturbance, or environmental influences being the direct cause" (Kataoka *et al* ., 2001, p. 3).

In Hong Kong, the Hong Kong Society of Child Neurology and Developmental Paediatrics (HKCNDP) refers SLD to a group of disorders manifested as significant difficulties in the acquisition and use of listening, speaking, reading, writing or mathematical abilities, despite access to conventional teaching. These disorders are intrinsic to the individual and neurobiological in origin, with onset in childhood and extending beyond it. SLD is not the direct result of sensory impairment, mental retardation, social and emotional disturbance or environmental influences (e.g., cultural differences or insufficient/ inappropriate instruction), (HKCNDP, 2006).

In the United Kingdom (UK), the term learning disabilities or learning difficulties are used to refer to those with lower intellectual functioning (Heslop & Abbott, 2008; Abbott & Heslop, 2009). The term "SLD" in UK is used to describe individuals that demonstrate similar characteristics to those described as having LD/SLD in the United States and many other countries like Japan and Canada (Reid, 2003).

With regards services, in many developed countries with more standardized definition of SLD such as the United States, UK and Canada, services for persons with SLD has become a national concern. Since persons with SLD has intellectual capacity to learn but experienced difficulties in specific cognitive and processing functions, students in these countries were placed in mainstream classes but are provided with academic support and accommodations. In the United States for example, educational services for SLD are mandated by the education acts (IDEA, 2004; Test *et al*., 2006). Support and accommodations include remedial teaching and incorporation of instructional learning strategies skills, academic remediation strategies, testing accommodations, and the use of assistive technology in assisting students with SLD facing academic problems at all education levels, primary, secondary and post-secondary education/ training institutions.

Literature on characteristics of persons with SLD showed that SLD is not an exclusively academic related problem (Lam, 2009; Lerner, 2003; Rojewski, 1992). In the United States, their education acts had mandated schools to provide transition services for transition aged students no later than age 16 years. The act requires individual transition planning be developed to help prepare students to engage in the post-school outcomes of their interest and these may be post-secondary education/ training and/or employment. Vocational rehabilitation services are also provided for school leavers with SLD (Koller, 1994).

In Asia, the HKCNDP following the use of standardized definition of SLD had urged the Hong Kong government to provide necessary services for persons with SLD. The services include early identification, assessment, education remediation and accommodations, examination accommodations, school support, and services for higher education and adults with SLD, as well as provision of community support and development of self-help groups, and professional training for those dealing with persons with SLD (HKCNDP, 2006).

DEFINITIONS OF SPECIFIC LEARNING DISABILITIES IN MALAYSIA

In Malaysia, the term LD is more commonly used than the term SLD. The definition of Learning Disabilities is established mainly for registration purposes for support and services. There is no specific formal definition for SLD (Gomez, 2004). The description of 'learning disabilities' used in Malaysia is likened to that of the UK definition. This is not surprising since historically Malaysia was under the British rule before gaining independence in 1957. Many education officers and teachers had been sent and continued to be sent to UK to be trained. However, this generic definition raised challenges in providing support and services as well as researches relevant for each sub-groups within the current broadly defined 'learning disabilities'.

Generally, there are two different approaches for defining Learning Disabilities. First, is the definition used in the medical field while the other refers to the one used by the educational and social services such as those provided by the Ministry of Women, Family, and Community Development and the Ministry of Education. Medical officers, paediatricians, paediatric neurologists and child psychiatrists establish the diagnosis of LD/SLD based on the guidelines of Learning Disorders outlined in the Diagnostic Statistical Manual IV (DSM IV). Learning Disorders (Previously known as Academic Skills Disorders) are divided into four categories (American Psychiatry Association, 2000; Fauman, 1994; First & Tasman, 2004). The group consists of 'Reading Disorder'/Dyslexia (F315.00), 'Mathematics Disorder'/Dyscalculia (F315.1), 'Disorder of Written Expression' (F315.2) and 'Learning Disorders Not Otherwise Specified' (Learning Disorder NOS; F315.9). According to DSM-IV-TR guidelines, the diagnosis of learning disorders are established when the person's reading achievement, mathematical ability and/or writing skills, is substantially below the expected "grade" as measured by individually administered standardized tests, given the person's chronological age, measured intelligence, and age appropriate education (First & Tasman, 2004). DSM-IV-TR also emphasized the importance of understanding the underlying processes that include 'input' (e.g. visual or auditory perception), 'integration' (e.g. sequencing, abstracting, and organization), 'memory' (e.g. short-term, rote, and long-term) and 'output' (e.g. language and motor) (First & Tasman, 2004).

For social welfare purposes, medical officers are compelled to use the term 'learning disabilities' as imposed by the Social Welfare Department for disabilities registration (Social Welfare Department, 2009). However, local articles on Learning Disabilities written by health care providers continues to use the term learning disorders' (Amar, 2008) or its specific subtypes such as 'dyslexia' (Normah, Shalisah & Nor'izam, 1999)

The Social Welfare Department (SWD), under the Ministry of Women, Family, and Community Development has established seven categories of disability for registration purposes. These categories are hearing disability, visual disability, speech disability, physical disability, 'learning disabilities', mental disability and multiple disabilities (Social Welfare Department, 2010). Disability registration with SWD enables persons with disabilities in Malaysia to receive supports and services provided by the government and government-linked agencies. Upon registration, they are given a card with their personal information such as photo, name, address and type of disability, and are eligible for public support. However, the SWD has its own operational definition of Learning Disabilities. It refers to those with intellectual ability (mental age) that is not in accordance with their chronological age and also demonstrated profound difficulties in performing their daily livings. Conditions included under this category are global developmental delay, Down syndrome, ADHD, autism, intellectual disability, slow learner and

SLD. The SWD has used the term 'learning disabilities' more broadly to provide support as well as education, employment and social services for more affected individuals. In the earlier years, the SWD had also used the term 'intellectual disability' (Khairul Anuar, 2004) to the group currently labelled as those with 'learning disabilities' in Malaysia.

The Ministry of Education Malaysia recognised SLD as a category of students with special needs. The Ministry of Education refers the term SLD to students who are unable to learn in the mainstream education classroom setting. The teachers observe a difference between the achievements of these students and the rest of the class in regards to their reading, writing and arithmetic skills. The ministry through it Special Education Division, refers the term 'learning disabilities' to a group of students with special needs who has learning problems in schools (Special Education Division, 2012). Their learning difficulties could be due to intellectual dysfunction, neurological syndromes and/or neurological processing problems. The term 'learning disabilities' as used by the Ministry of Education is the same as the one that is used by the Social Welfare Department. However, the Ministry of Education, has in addition established its own definition for the SLD (dyslexia) condition, which refers dyslexia to individuals who seemed to have intellectual functioning equivalent or above typical students at similar age but have significant difficulty in spelling, reading and writing. These students have low academic

achievement, generally 2 years behind their peers without disabilities (Special Education Department, 2003).

'Learning disabilities' definition, as defined and used by the SWD is also being adopted by other government and non-government organizations (NGOs) in Malaysia. Generally the usage of this term demonstrates eligibility for disability support and services (Fonseca, 1996). However, there are NGOs, such as the Dyslexia Association of Malaysia which provides services for people with dyslexia, which used an SLD definition drawn from the international literature (Dyslexia Association of Malaysia, 2011).

IDENTIFICATION OF SPECIFIC LEARNING DISABILITIES

A discrepancy between intellectual ability and academic achievement is the long-established method in identification of SLD in most developed countries. The IQ-achievement discrepancy refers to the concept of "unexpected' achievements in the SLD definition. The child's achievement (mostly refer to academic achievement) is low compared to his or her ability (mostly refer to intellectual capacity). The ability-achievement is measured using standardized tools such as Kaufman Assessment Battery for Children (K-ABC) and Wechsler Intelligence Scale for Children (WISC). However, this traditional approach of identification is criticised for its limitations especially in the development of intervention for persons with SLD.

The IQ test which measures the general intelligence performance "g" is necessary in identification of persons with SLD. It helps rule out intellectual disabilities, slow learner and ability-expectation mismatch (Wodrich & Schmitt, 2006). However, some scholars in the field of SLD in the United States disagreed on the use of IQ in defining person with learning disabilities. Seigel (1989) argued that the IQ test score is inappropriate as measurement of a person's intelligence in defining SLD as it fails to predict the specific cognitive functions central to academic skills, reading, spelling, and language task. Furthermore, studies had shown higher reading achievement in individuals with low IQ (Seigel, 1989; Share *et al.*, 1989). In addition, academic achievement is also influenced by other factors such as motivation, self-discipline, attention, motor and phonological processing skills (Duckworth & Seligman, 2005; Rindermann & Neubauer, 2001). The ability-achievement discrepancy approach is criticised for its disadvantages in identification of children with SLD. This includes its inability to discriminate between children with SLD from those who are 'low achievers' (Fletcher *et al.*, 1994; Hale *et al.*, 2011) and leads to a 'wait-to-fail' situation before children with SLD get needed services (Vaughn & Fuchs, 2003; Hale *et al.*, 2011).

'Response to intervention' (RTI) is a new alternative approach to definition and identification of SLD that is currently being researched and practiced in the United States. The main criterion of this approach

is the replacement of the use of the IQ score test as measurement for the achievement discrepancy approach (Fletcher *et al.*, 2004, Fuchs & Fuchs, 2006). RTI focuses on discrepancies relative to age-based expectations and instructions instead of cognitive discrepancy (Fletcher &Vaughn, 2009). Many scholars in this field supported the RTI process-based identification of SLD (Fletcher *et al.*, 2004, and 2011, Fuschs & Fusch, 1998; Ysseldyke, 2005). Using this approach, students who do not benefit from general education classroom are given research-based interventions. Those who do not respond to interventions, labelled as 'non-responders' are provided with additional intensive interventions. Students who consistently fail to show response to these intensive interventions are deemed to need special education services (Sotelo-Dynega *et al.*, 2011) and are required to undergo more comprehensive evaluation to determine their eligibility for special education and identification of SLD (Fletcher *et al.*, 2011).

The most recent approach in identification of SLD uses 'research-based procedures'. This approach uses alternative research-based procedures instead of conventional IQ achievement-based assessment in the evaluation of the strengths and weaknesses of persons with SLD in their abilities (Hale *et al.*, 2011; Sotelo-Dynega *et al.*, 2011). The individual standardized cognitive and achievement measures are used to identify the cognitive strengths, cognitive deficits, and achievement deficits associated with the cognitive deficit

(Hale *et al.*, 2008). An example of this research-based procedures approach is the 'Concordance-Discordance Model' by Hale & Fiorello (2004). The Federal Regulations for identification methods for students with SLD in the United States permitted three methods of identification which are Ability-Achievement Discrepancy, RTI and Alternative Research-Based Procedures (United States Department of Education, 2006). In addition, many researchers suggested the use of comprehensive evaluation of cognitive and/or neuropsychological processes in identification of SLD even if the RTI approach is used first (Fletcher *et al.*, 2005; Kavale & Spaulding, 2008; Hale *et al.*, 2006, 2011; Wodrich *et al.*, 2006).

IDENTIFICATION OF SPECIFIC LEARNING DISABILITIES IN MALAYSIA

In 2003, the Special Education Division, Ministry of Education developed a local instrument, the Instrumen Senarai Semak Disleksia (ISD), to screen students in the primary schools suspected to have dyslexia. This screening instrument consists of three elements: (i) students' level of mastery in reading and writing (spelling) and numeracy skills (difficulties); (ii) teachers'/ parents' perception of students' abilities (strengths); and (iii) predictors of dyslexia. The purpose of the screening instrument is to help teachers identify students who have or who are at risk of having dyslexia. Using this instrument, students who are identified as probably having dyslexia are further

referred to the medical or healthcare services for confirmation of the diagnoses (Ministry of Education, 2003).

The Ministry of Education Malaysia introduced the Literacy and Numeracy Screening (LINUS) programme for primary school children in 2010. The LINUS program aim for each child to master their basic literacy and numeracy skill after following the three year primary education (Ministry of Education, 2010a). Children are screened using LINUS Assessment for their reading, writing and arithmetic skills when they enter primary school at age 6 years. Three LINUS assessments are carried out for year one students in March, June and September. Those who fail this screening are either placed in LINUS programme or referred to the health facilities for diagnostic evaluation prior to placement in programs for students with special education needs. The LINUS intervention program focuses on improving the students' basic reading, writing and arithmetic skills. Remedial teachers and selected high performance teachers are assigned to teach students in the remedial classes which consist of smaller number of students (Ministry of Education, 2010a). This recent move by the Ministry of Education is seen as a positive step towards early identification of students with 'learning disabilities' in Malaysia (The Star, 2012). Toh *et al*. (2011) found that out of 93 primary one students who were referred for 'learning disabilities' at Lau King Howe Memorial Children Clinic, 72% of them failed the LINUS assessment. Although the clinical diagnosis and non-verbal ability of these students varied, the majority of them do not have intellectual disability. Toh *et al*. (2011) reported that 10.8% of the year one student in their study had SLD.

In Malaysia, the clinical psychologists are responsible in providing data on children behaviour psychological performances that are normally required to establish diagnosis. The Wechsler Intelligence Scale for Children (WISC) is commonly used as a clinical tool to provide a child's IQ estimation score. The evaluation of child's behaviour (for example, Vineland Adaptive Behaviour Scales, Child Behaviour Checklist), dyslexia characteristics using Dyslexia Screening Test, the child's academic/school performances (based on teachers report and/ or tests in the clinic), and family report are equally important and have been taken into consideration when making a diagnosis. The diagnosis is established based on the input from a multi-disciplinary team which most commonly consist of clinical psychologist, psychiatrist and/or paediatrician.

CHALLENGES IN PROVIDING SUPPORT AND SERVICES FOR INDIVIDUALS WITH SPESIFIC LEARNING DISABILITIES IN MALAYSIA

Standardized definition is essential for accurate identification of persons with SLD for the purpose of services planning and implementation (Fonseca, 1996; Jung, 2007). Standardized definition facilitates assessment, intervention and research on the problems and needs of this group. The absence of consensus on the standardized definition makes estimation of its prevalence

difficult and this will compromise services provision (Jung, 2007).

In Malaysia, services including educational and social services for persons with SLD are deemed for those grouped under the umbrella term 'learning disabilities' by the SWD. Historically, special education services for people with disabilities in Malaysia started with services for persons with sensory disabilities (hearing and visual impairment) and subsequently followed for those with intellectual disabilities (Aminah Bee *et al*., 2009; Jamila, 2005). The Special education classes for students with 'learning disabilities' at government funded schools were started in 1988 for primary school children and in 1995 for secondary school students (Jamila, 2005). It is only recently, since 2004 that the education programme for students with dyslexia is made available in the governments funded schools. In other word, the special education classes for students with 'learning disabilities' were established mainly to serve children with intellectual disabilities who were previously known as 'mentally handicap' and not those with SLD. Many students with SLD are left to struggle in the mainstream classes due to lack of support from the education system and are at risk of becoming academic failures or labelled as low achieving students (Sariah, 2008). It is of no surprise when many parents share their deep feelings of dissatisfaction and concerns on the unmet needs of their children within the local educational system in their conversations and discussions on these issues (Sariah, 2008; The Star, 2010; Suet, 2007; personal interviews with parents).

The Ministry of Education special programme, the 'dyslexia programme', was initiated following the implementation of the dyslexia screening instruments in schools. However, this programme is limited to children in primary and secondary schools. Support and services at post-secondary school level are not documented. Currently the 'dyslexia programme' is available in 51 primary schools and 16 secondary schools all over Malaysia (Ministry of Education, 2010b). This number is relatively small compared to the number of students with SLD in the country. In schools with no 'dyslexia programme', students with SLD can choose to study in either mainstream classes without support services from special education teachers or opt to follow the Special Education Integrated Program (SEIP). According to their performance, students with SLD who followed the SEIP are placed in either the inclusive class (together with typical students and following the mainstream curriculum) or segregated class (with students with 'learning disabilities'; and following alternative curriculum). Support and services for students with SLD in the inclusive or segregated classes vary based on available resources in schools. In addition, the alternative SEIP curriculum developed for students with intellectual disabilities had been criticised as being inappropriate for those with SLD (Sariah, 2008). Mohd Sharani (2004) emphasised that students with special needs including those with SLD should use similar curriculum to that given to typical students in the mainstream classes. However, modification of the curriculum

should be made whenever necessary and supported by the best teaching and learning approaches (Mohd Sharani, 2004). Adnan and Hafiz (2001) had suggested that the current approaches in the implementation of inclusive education in Malaysia are due to the inability to define and characterise persons with disabilities in this country.

While educational services for students with SLD has received considerable attention from the Ministry of Education, advocates of those with SLD including parents of children with SLD, as well as special educators and professionals involved in this group perceived that progress is relatively slow and inadequate (Star, 2003; Cho, 2005; Suet, 2007). They felt that the political will and commitment on the development of services for person with SLD in Malaysia is still relatively low. Jung (2007) suggested governments' low supports for research based definition and identification of SLD is due to concern about cost since special education services is expensive.

In Malaysia, the number of professionals such as child psychiatrists, paediatricians/child neurologists and clinical psychologists, necessary for identification and evaluation of children with learning disabilities are limited. There is also no educational psychologist placed in schools or the school district offices. In addition to this, we also lack standardized assessments tools that are locally and culturally sensitive. The current practice in identifying persons with SLD involves using the western assessments tools such as the Wechsler's products of intellectual assessments, Vineland Adaptive

Behaviour Scales, Dyslexia Screening Test and academic skills assessments for local use. Although some may use the translated version of these instruments, these are mainly limited to the Malay Language. Moreover, many of these translated assessment tools are still beset by validation issues. Imprecise identification of persons with SLD leads to misconception about their needs for support and services (Jung, 2007; Mohd Zulkifli, 2011).

Disparity in services provision for persons with SLD is evident in countries where definition and identification of persons with SLD are not clear. Like in Malaysia, in South Korea, SLD is recognized as a disorder and included as a category under special education (Jung, 2007). The concept of SLD is not well distinguished from underachievement, slow learning, and mental retardation. Generally there is minimal understanding or misconception of SLD among teachers and parents. The lack of set criteria and assessment instruments for identifying students with SLD in South Korea has lead to inadequate educational services at secondary and tertiary level (Jung, 2007).

The Malaysian broad and generic definition of "learning disabilities" that include SLD as a sub-group also post challenges on maintaining database and research on SLD. Data from studies that include or combined many disability groups may provide a broad viewpoint on problems faced by persons with disabilities and carry the risk of over generalizing the findings (Caton & Kagan, 2006; Levine & Nourse,

1998). It is of no surprise that special education teachers in this country also have low understanding of 'learning disabilities' and SLD (Mohd Zulkifli, 2012). Two local studies on transition programme for students who attended SEIP in government funded schools, reported findings on broadly defined 'learning disabilities' and did not address the specific needs of sub-groups labelled to have 'learning disabilities' (Abdul Rahman, 2004; Noraini, 2009). Rojewski (1992) recommended that the needs of individuals with SLD must be further studied to ensure that educational and transition programmes offered reflect and fulfil those needs.

RECOMMENDATIONS

Definition of specific learning disabilities

The definition of SLD must to consider the international concept that include what is SLD (using the inclusive criteria); and what SLD is not (using the exclusion criteria) (Hammil, 1990; Kavale & Forness, 2000; NJCLD, 1998). To achieve these, more dynamic approaches to assessment and evaluation are necessary. Psycho-educational assessment which is very limitedly used yet important for identification of LD/SLD should be developed for local use. Professionals involved in this field should receive adequate training to achieve diagnostic competency.

The lack of agreement on the definition of SLD among policy makers and services providers from different agencies may be due to social and political reasons, pressures and needs, and not from empirical and scientific database (Fonseca, 1996; Keogh, 1986; Lam, 2009). Nevertheless, Fonseca (1996) urged professions involved in this field to take up a professionally honest and accurate definition of SLD for better development of services for this group of people.

Identification of children with learning disabilities

A multidisciplinary team and an inter-sectoral assessment approach are necessary for identification of children with SLD. We need to have effective, efficient and quality screening and assessment services. Professionals involved should equip themselves with the most recent knowledge and information on SLD so that timely and accurate counselling and support can be given to persons with SLD and their families (Chan, 2008).

Research based approach to definition and identification of SLD need to be adopted. The current approach of identifying SLD such as use of RTI needs to be considered for students who are having similar learning problems in our country. However, to apply such approach, Malaysia should ensure the education services provide intense and quality educational instruction and interventions to students who have difficulty in learning or are at risk of such difficulty. Looking at our current educational system and practices, applying the conventional approach of identification of SLD is more reasonable since even in developed countries such as the U.S., where identification and educational and training services for persons

with SLD are mandated by the country's national acts, their educational services require further improvement in its resources and facilities to ensure the validity of the RTI approach (Gerber, 2005; Harr-Robins *et al.*, 2009; Samuels, 2008). However, in line with such moves, more resources should be allocated for research on new modalities for children with SLD in our local contexts.

Assessment for SLD should start early before school entrance. Services should focus on identification at the pre-school level so that early intervention can be initiated focusing on those at risk. For school children suspected of having SLD, diagnosis can be early if made in the schools by educational psychologists using standardized validated tools. The current practice of using clinical psychologists who are limited in numbers, and at hospitals, will further delay diagnosis. Ong *et al.* (2009) estimated the prevalence of SLD (dyslexia) among undergraduate students in Malaysia as 4.66%. Thus, assessment at tertiary level is also necessary to identify students in colleges/universities who are not earlier diagnosed as having SLD. This move will facilitate support services for such students in our local colleges and universities. Ong *et al.* (2009) also recommended that the Ministry of Higher Education as well as universities/colleges draw disability statements or policies for training staff as well as providing support services and accommodations to assist students with SLD to better cope and manage their learning obstacles (Ong *et al.*, 2009).

Research on SLD

Little is known about the characteristics and needs of people with SLD in this country. The number of people having this type of disability is unknown (Gomez, 2004). Accurate and comprehensive data on number of children with disabilities and their characteristics is crucial for planning and improving services (Mooney *et al.*, 2008). Government ministerial report also concurred that "lack of a comprehensive database on disability in the Malaysian context pose the greatest challenge to effective intervention and successful monitoring of policies and programmes regarding real achievements of targeted goals" (Malaysia, 2007). We also need to consider the systematic and scientific way of defining and identifying persons with SLD in Malaysia that reflect the global understanding of the field. Research funds must be provided to study and test new or other concepts and models for providing services to this group.

CONCLUSION

Malaysia has used the generic term LD to describe all persons with 'learning disabilities' and in so doing misclassify SLD and made them 'invisible'. This classification led to inadequate and inappropriate services for this group. Policy makers and services providers need to recognize the problem to better advocate, support and provide appropriate services and interventions for persons with SLD in the country.

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Short Communication

The Challenges, Potentials, and Experts' Opinions on Developing a Malaysian Garden Identity

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ABSTRACT

As well as generally being considered as symbols of national and country identity, gardens fulfill various functions within society such as being aesthetically beautiful, satisfying human needs, and also functioning as places for various activities. In accordance with this, the Malaysian government in her newly launched National Landscape Policy put forth a vision to achieve "The Most Beautiful Garden Nation" by the year 2020, reflecting a desire to develop a distinctive landscape identity for the country. Due to this, the National Landscape Department of Malaysia suggested developing a garden identity as an indispensable part of this vision because even though the country has great potential in the development of parks and gardens, an exclusive garden identity is still lacking. This paper aims to justify that the development of a garden identity could enhance national and landscape identities for the country. It is also presumed that such development faces several challenges. Moreover, the study intends to highlight Malaysia's great potential for developing its gardens. A review of existing literature along with Malaysia's new landscape policy was thus undertaken, and findings were then triangulated by conducting face-to-face interviews with Malaysian local landscape architects. Consequently, the importance of creating a unique garden identity corresponding with Malaysia's new landscape policy was confirmed. Furthermore, challenges (which mainly relate to political, social, cultural, and economic viewpoints) and potentials for such development were recognised. The results can ultimately be utilised to contribute to the formation of gardens with distinct Malaysian identities.

Keywords: Park, garden identity, garden development

INTRODUCTION

Malaysia's unique natural and cultural heritage gives it great potential in developing distinctive gardens and landscapes. As such, landscape development in Malaysia has received strong support from the government, and a lot of effort has been made to improve the development of landscapes in the country (Osman & Suhardi, 2007). It is observed that Malaysia, through its newly endorsed National Landscape Policy, has recognised landscape as an aspect with economic benefits for both the people and the government. Moreover, the policy emphasises that through landscape development, the general well-being of Malaysian citizens will be increased, and sustainable spaces could be created for society (NLP, 2011). Therefore, developing a garden identity is politically significant for Malaysia. Consequently, recognising the challenges and potentials for such development is essential, as it can then provide the primary guidelines for the creation of garden identities.

LITERATURE REVIEW

Gardens and national identity

Gardens play a significant part in landscapes and have always been reputed as a symbol of national identity (Goode & Lancaster, 1986; Ross, 1998; Helmreich, 2002; Waymark, 2003). For a long time, gardens have not just been mere physical forms, but also encapsulations of community identity, a vehicle to enhance past glories, and a space that represents common wishes for the future (Helmreich, 2002). According to Hunt (2000), gardens have historically provided an ideal form for creating place identity. Not only are they built upon forms and visual appropriations, but are also containers for the formation of identity (Goode & Lancaster, 1986; Hunt, 2000; Johnston, 2005). Helmreich (2002) further claimed each culture endows its gardens with individual forms, which in return contribute meaning and identity to society. Additionally, Clayton (2007) described the practice of gardening as one aspect of social identity, which reflects local and personal identities. Furthermore, as a collection of ideologies in smooth harmony with nature, gardens afford various uses that then stimulate the formation of national identity (Helmreich, 2002; Gross & Lane 2007).

Based on the above-mentioned statements, gardens with their various functions have always been significant aspects of national identity. Furthermore, garden identity depends strongly on the identity of people and their culture, and it also enhances environmental knowledge. As discussed, Malaysia, as a developing country, has recognised a clear objective for the development of an identity for its landscapes and parks (Bunnell, 2004; Osman & Suhardi 2007; Aziz, Salleh, & Ribu, 2010). The principles of Malaysia's National Landscape Policy indicate that cultural values and the natural heritage of the nation should be preserved through landscape development programs. Attention should be placed on sustainability and functional aspects in landscape designs

(NLP, 2011). Hence, the development of a garden identity should be one of the key areas in national and landscape identity development, because gardens provide sustainable settings with functional aspects, whilst conveying cultural values and reflecting national identity.

Challenges in Developing a Garden Identity for Malaysia

Malaysia is a multiracial, multicultural, multilingual and multi-religious country. In relation to this, socio-cultural aspects of Malaysian society have been identified as the most important challenge in creating an overall Malaysian identity (Watson & Bentley, 2007). Aziz, Salleh, and Ribu (2010), pointed to the political, social and economic associations based on ethnic groups in creating Malaysian landscape identity. Accordingly, the development of Malaysia's national identity through creating a unique garden identity faces several challenges. These challenges mainly refer to the economic, political, cultural, and social aspects of garden development.

Economic value

Connell (2005) showed in his study that a large number of tourists visit the gardens of Great Britain annually. He also discussed the economic value of garden visits for both the government and public. Rambonilaza and Dachary (2007) discussed the visual quality of landscapes and its direct relationship with economic value. And this can certainly apply to the case study, Malaysia. Malaysia benefits from its geographic position and plays an important role in global economy (Watson & Bentley, 2007). According to MARDI (2005), visitors come to Malaysia to visit her natural beauty and unique landscapes. Hence, the country will certainly enhance credit by developing its landscapes and gardens. Sternberg (1977) claimed that most tourists arrange to visit a place because of the potential images that they can collect, and because they are interested in taking photos. Gardens can thus be seen as a pictorial phenomenon and they can function as an important tourist attraction for Malaysia that provides economic benefits.

Political viewpoint

During his term in office, Malaysia's fourth Prime Minister, Tun Dr Mahathir Mohamad, set up a vision for Malaysia's development (Osman, 2005). The vision stated the country should be developed in all aspects including landscapes and environments by the year 2020. To achieve this, the government has planned to employ policies and supervise activities for the development of landscapes and gardens (MARDI, 2005). For example, the formation of the National Landscape Department in 1996, as the government overseer of landscape development, has led Malaysia towards better-organised landscape programs in comparison with other developing countries (Bunnell, 2004; Osman, 2005). According to Abdullah and Nakagoshi (2006), Landscape changes in Malaysia are influenced by development politics. As such, landscape development has received strong support from the government, and a lot of effort has been

made to improve landscape developments in the country (Osman & Suhardi, 2007). Therefore, in relation to the political significance of the subject, developing a garden identity is relevant for Malaysia.

Cultural heritage

Aside from a unique natural environment, Malaysia also has a diverse cultural heritage (Aziz, Salleh, & Ribu, 2010). There is great potential for the development of gardens in the country based on her rich legacy in traditions, cultures and beliefs, through which she can identify herself (MARDI, 2005; Huzeima, Hussain, & Ahmad, 2010). The development of landscapes in Malaysia can be interpreted by considering the country's history (Bunnell, 2004; Kamariyah 1989 in Aziz & Osman, 2007). In the early stages, during the period of sultanates, there were royal gardens in urban centres, but they have already been destroyed (Jamil, 2002). Additionally, MARDI (2005) pointed out forbidden gardens in the Malacca Palace.

Nowadays, Malaysian landscapes are shaped based on foreign ideas (Aziz & Osman, 2007) to provide aesthetic beauty and needs of new sustainable and livable landscapes (Hussain & Byrd, 2012). However, the National Landscape Department of Malaysia (2008) has issued a definition for Malaysian gardens. According to the definition, the Malaysian garden or "Taman Malaysia" is a garden with a Malaysian identity that projects images of tropical environment, utilises spaces that satisfy socio-cultural life, and which is strengthened by artistic achievement.

Therefore, culture and the cultural background of Malaysia is one of the aspects to be considered when developing a garden identity for the nation.

Social differences

Malaysia has a complex multiracial population, including Malay, Chinese, Indian and ethnic minorities. These different races have different religious backgrounds, predominantly Islam, Buddhism, Hinduism, and Christianity (Jamil, 2002; NLP, 2011, Cambon & Harper, 2004). It has been argued that it is crucial that the development of landscapes and gardens are relevant to people's culture and daily lives (Watson & Bentley, 2007). As Osman and Suhardi (2007) argued, the Malaysian public — with all their differences in race, culture and religion — still maintain different and even diverse routines. This statement has also confirmed in the course of a study by Aziz, Salleh, and Ribu, (2010). Not surprisingly, Watson and Bentley (2007) identified the difference between social and cultural groups as the most challenging issue for creating a single Malaysian identity. Hence, creating a single Malaysian garden identity is considered a challenge for the country.

Potentials in Development of a Garden Identity for Malaysia

Abdullah and Nakagoshi (2006) pointed to the Malaysian economic development based on the agriculture sector. They pointed that development of this sector could have an impact on landscape planning, management and strategies for the country.

Therefore, there is an economic potential for garden development in Malaysia. Moreover, Huzeima, Hussain, and Ahmad (2010) indicated that unique traditions and cultures should be considered to design an image or identity of Malaysian landscape. This statement has previously suggested by Mustafa and Noor Aziz (2009) as a potential for garden development in Malaysia. Accordingly, people's activities in relation to the landscape is another potential for landscape and garden development of Malaysia (Mustafa & Noor Aziz, 2009; Huzeima, Hussain, & Ahmad, 2010; Hussain and Byrd, 2012). Jamil (2002) discussed about plants with specific symbolism and value in Malaysian culture. In a similar vein, Huzeima, Hussain, and Ahmad (2010) concluded that plant is a landscape element with both symbolic and practical functions in Malaysian culture, and could be one of the potentials in development of Malaysian landscape identity.

METHODOLOGY

The literature review recognised the fact that creating a unique garden identity for Malaysia could enhance national and landscape identities. The main challenges in this development were also suggested and the new National Landscape Policy for the development of Malaysian landscapes (NLP, 2011) was reviewed, recognising the main issues in such development. In order to triangulate findings, and recognise specific potentials in the development of Malaysian gardens, interviews with landscape architects were conducted.

Selecting Respondents

As based on the statement of the availability of respondents as suggested by Rea and Parker (1997), the interviewees encompassed Malaysian landscape architects. Previous researchers have also believed that non-random sampling method provides an opportunity to obtain the opinion of the most potential respondents in this field, as well as their judgment of the responses (Rea & Parker 1997, p.160). Hence, the interviewees encompassed university professors in the field of landscape architecture with more than 15 years experience. They were selected from "Institute of Landscape Architects Malaysia" (ILAM) executives and members on the basis of their great potential and enthusiasm in the garden development of Malaysia. These respondents were considered the most available for this present study, and they were also selected based on their level of proficiency and experience.

Sample Size

Mason (2010) stated that samples in qualitative studies are smaller than samples in quantitative ones due to the type of information and analysis. In this form of research more data does not lead the researcher to more information, since quantitative research is concerned about meaning in creating framework not testing hypothesis (Crouch & McKenzie, 2006). The saturation point theory was also utilized in sampling the interviews (Kumar, 2005). This approach is used in qualitative researches as a flexible method

to collect and analyse data for development of theoretical frameworks. This process is based on selection of cases which are most likely to generate a collection of relevant data (Seidman, 2005; Bloor & Wood, 2006). According to Bloor and Wood (2006) ,at this point the repited evidence are found to support researcher's conceptual framework. When the sample size in this kind of research is very large, answers are repetitive and redundant. Moreover, analysis of qualitative data is very difficult and selecting a large sample would be time consuming too (Mason, 2010). It has suggested that researchers follow the concept of saturation, when collection of data will not lead to new information of subject (Seidman, 2005; Crouch & McKenzie, 2006). Therefore, the saturation point theory was employed in this study. After 7 interviews, attention to the repetition of answers, recognition and confirmation of challenges and potentials in garden development, the interviews were stopped.

Interview Procedure

The interviews were semi-structured which allowed the researcher to ask a predetermined set of questions using the same order and words (Kumar, 2005). According to Kumar (2005,pg 135), the "open-ended questionnaire provides respondents with the opportunity to express themselves freely, resulting in a greater variety of information"." Therefore, open-ended questions were asked regarding the importance, challenges and specific potentials for the development of Malaysian

gardens. Show cards were offered to them during the interviews to make each interview easier and faster (Appendix II).

RESULTS FROM FACE-TO-FACE INTERVIEWS WITH LANDSCAPE EXPERTS

The data collected from the interviews was coded and the content was analysed. The respondents' opinions of developing a garden identity, its related challenges and potentials are presented as follows:

The importance of garden identity development for Malaysia

The respondents were asked how important garden identity development was to enhance national identity. All respondents agreed on the subject and mentioned that the issue of landscape identity development was one of the most important goals put forward by Malaysia's National Landscape Department. Two of the respondents added that emphasis on creating a garden identity would enhance civilization and strengthen the country's national identity. In addition, five respondents mentioned that developing a garden identity integrates national identity, because the culture of a nation is reflected in its gardens.

Challenges in the development of Malaysian gardens

The Malaysian experts interviewed confirmed all of the suggested challenges. Six out of seven of the respondents agreed that cultural and political challenges were the most important in the development

of a garden identity. They also agreed on the importance of social challenges in terms of differences between the perceptions, preferences and cultural values of the multifaceted Malaysian public. They mentioned that although gardens can be a good place for social gatherings, in terms of political challenges, there could be a bias, and so Malaysian gardens should be deemed acceptable by Malaysia's three main different ethnicities.

One of the respondents notably said *"there are different ethnicities in Malaysia… we even have different ethnicities in Malaysia in different regions… they differ in culture or philosophy…"* and concluded that the political aspect is the most important challenge. In contrast, the majority of the respondents believed that the economy is the least important challenge in the development of a Malaysian garden identity. Two respondents agreed that people's needs based on their different social classes should be considered too. Finally, the interviews concluded that cultural differences between the ethnic groups should be considered in the development of gardens for Malaysia.

Potentials of the garden development of Malaysia

The interviews confirmed that Malaysia has a great interest and urge to develop her own garden identity. The interviewees argued that the garden could be a symbol of power and civilization for a nation. In addition, cultural potentials of developing Malaysia's gardens,

in relation to religion, beliefs and people's attitudes were suggested. The respondents also discussed the importance of culture and symbolic ideology, adding that we have to define and compare the specific motifs of Malaysia's different states. It was stated that although some differences exist among the motifs of Malaysia's different states, we can recognise their particular patterns which are different from the motifs of other countries that share common cultural aspects with Malaysia. This, for example, can be seen in the differences in the architecture and carving patterns of Malaysia and her Southeast Asian neighbour, Indonesia.

The majority of the respondents believed that historical disputes have caused a loss of character and value in landscape designs, and one of the experts pointed to the specific icons that can be recognised from Malaysian rural landscapes. All of the respondents pointed to the unique traditions, activities, histories, stories, costumes, and vegetation of Malaysia that should be identified and employed in the country's garden design.

The interviews concluded that gardens should create harmony within the landscape, whilst paying attention to history. The findings of the interviews indicated that the starting point is crucial and that the emphasis should be on developing enforcements, guidelines and politics. Ultimately, all interviewees felt that technology and the use of new materials could be one of the great potentials for the development of Malaysian gardens.

DISCUSSION

Importance

The findings from the literature review and Malaysia's vision –to be "The Most Beautiful Garden Nation"– clarified the importance of the development of a garden identity to enhance national and landscape identities. This was confirmed during face-to-face interviews with local landscape architects. In fact, the interviews concluded that creating a distinct garden identity could be regarded as one of the best approaches to enhance national and landscape identities whilst reflecting culture. These findings correspond with Malaysia's landscape policy (Fig.1), as the new policy –launched by the government (30 Sep 2011) –indicates that there is a need to identify a "high value visual landscape, and to integrate local landscape character and natural environment in development process" (NLP, 2011, pg 22). Therefore –whilst paying particular attention to the distinctive visual quality of gardens and their importance in reflecting national and cultural identity –creating a unique garden identity for Malaysia could be one of the aspects that can be used to enhance national and landscape identities.

Challenges

The literature review clarified existing challenges in the development of a Malaysian garden identity. The findings were confirmed by local landscape architects during face-to-face interviews. Social and cultural differences along with potential economic benefits of garden development were confirmed, and the experts pointed to the politics in such development. In this regard, the NLP has focused its policy of landscape development on socio-cultural, environmental, and economic aspects, and put emphasis on the development of a Malaysian landscape identity. It should
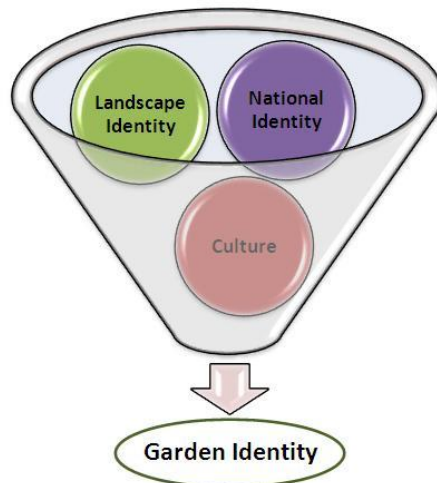
Fig.1: Garden identity as a vehicle to reflect culture, landscape, and national identities
(Model suggested by authors)

also be noted that the policy puts stress on driving the nation towards attaining higher income in its economy through landscape development "to attract local and foreign investments" (NLP, 2011,pg3). Accordingly, the development of landscapes based on cultural values, heritage, and for the purpose of research and public recreation was mentioned in the 2011 NLP policy. Another considered issue in the policy was the potential increase in tourists by improving the quality of national landscapes and creating public parks to preserve and showcase cultural heritage and indigenous plants (NLP, 2011:30). With these findings, it is concluded that Malaysia faces economic, social, cultural, and political challenges in the pursuit of developing its own garden identity.

Potentials

Besides the above-mentioned challenges, the specific potentials for the development of a garden identity for Malaysia were recognised through existing literature and face-to-face interviews. The face-to-face interviews confirmed that attention should be paid to specific customs, beliefs, rural landscapes, and also the historical and cultural background of the nation. These findings were with NLP's mission, which puts emphasis on preserving cultural backgrounds as well as rural landscapes. In summary, existing literature and interviews, the strength of Malaysia's natural and cultural heritage, in addition to politics and new technologies could be identified as powerful potentials in the garden identity

development for Malaysia. Finally, with regards to the experts' recommendations and Malaysia's landscape policy, there were two more issues that should be considered in the development of a Malaysian garden identity. These issues are sustainability and maintenance, which were suggested by the respondents through their interviews and which have also been considered in the new NLP policy.

CONCLUSION

Malaysia has a vision to become the most beautiful garden nation by the year 2020 and, as such, it puts emphasis on the development of a unique identity of its own landscapes. Malaysia's National Landscape Policy (NLP) has focused on the development of sustainable landscapes with a unique identity to provide economic benefits and enhance the well-being of society. In this regard, the development of a distinctive garden identity is recognised as one aspect of landscape identity development for Malaysia. But, however challenging from a political viewpoint while considering social differences these developments seem, they gardens could potentially increase economic value and could exhibit the country's cultural heritage as well. And, it is presumed that Malaysian gardens will be sustainable, maintained and well-designed, meeting the needs and expectations of her multicultural society. Thus, the development of a garden identity has to be an echo of Malaysia's unique natural and cultural heritage, whilst utilising new materials, technology, and ideas to attract local users and tourists.

Accordingly, this study provides a diagram which illustrates the relationship between Malaysia's national landscape policies and the development of a unique garden identity (Fig.2). The economic value of gardens in presenting natural resources and attracting tourists is one of the aspects that enhance income for both the government and the people. In addition, there is a great interest in the development of gardens in the country. New technology and materials could be exploited to create gardens as suitable and well-maintained public places to improve the well-being of Malaysian citizens. Furthermore, making use of local materials and plants inspired by rural landscapes and cultural heritage could create gardens that are sustainable and well received. Above all, social differences from the multiracial society of Malaysia have to be considered in setting the main guidelines and politics in such developments.

ACKNOWLEDGEMENTS
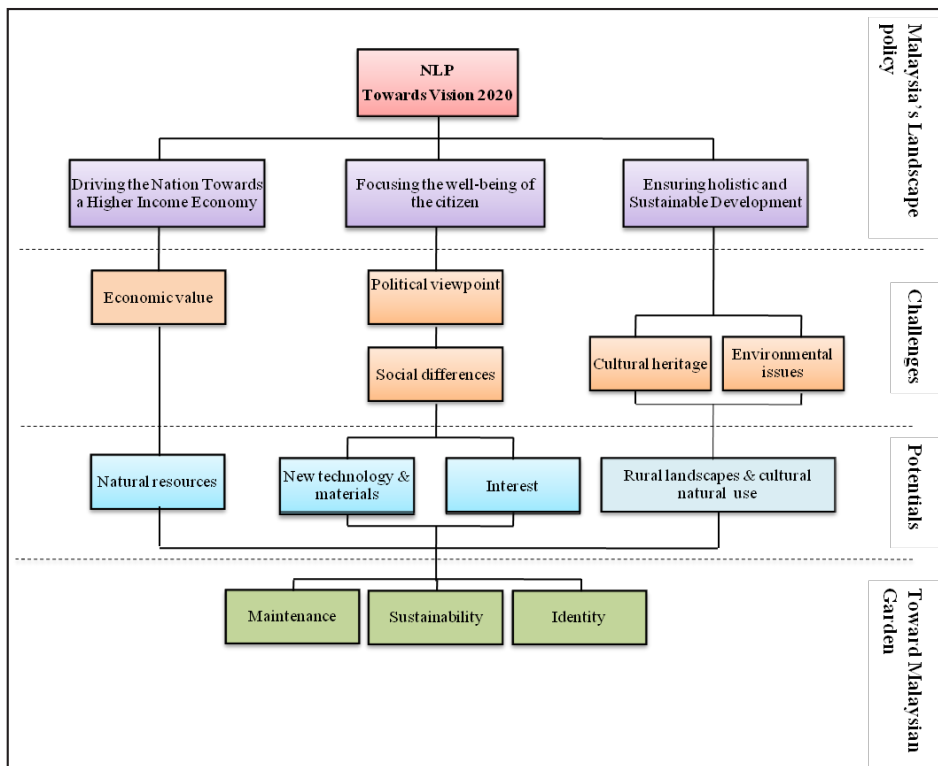
Fig.2: Policy, Challenges, and Potentials in Developing a Malaysian Garden Identity
(Suggested by authors)

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APPENDIX I

EXPERTS' INTERVIEW FORM:

Interview NO:

Date:_____   Start time:_____   End Time:_____

Place: _____

_____

_____

Academic qualifications:

☐ Master   ☐ PhD   ☐ Other: (Please state)_____

Greetings,

The aim of the study is to clarify challenges and potentials for development of a Malaysian garden identity. Malaysia is gearing toward a developed country by the year 2020. The Country has a vision to become the Most Beautiful Garden Nation has been selected as my case study. I have reviewed related literature to clarify importance of garden development in addition to the challenges and potentials which Malaysia is facing in this approach. In order to complete my findings, I would like to seek your professional opinion regarding the subject matter. Your identity will remain anonymous, and the information will only be used in my research to develop a guideline for creating and proposing design of garden in Malaysia with Malaysian identity.

1. **General about Garden**
   a. What is your definition of a garden? (Record sound)
   b. What items do you think have been considered in creation of gardens in the past? (Record sound)

2. **Garden and Identity**
   a. How do you define a garden identity? (Record sound)
   b. Can we create a garden identity? (If Yes, then go to c)
   c. How can we create a new garden identity? (Record sound)
   d. Do you agree that creating a garden identity can enhance the national identity of a nation? (Please explain your answer) (Record sound)

3. **Development of New Garden Identity**

   Based on the literature, I have defined some issues and problems in the development of a garden identity (Give them Show Card #1);
   a. Do you agree with these issues (Please explain your answer.) (Record sound)
   b. Please suggest other issue related to this subject (Record sound)

4. **Development of a Garden Identity for Malaysia**

   I have identified some challenges in the development of garden identity for Malaysia (Give them Show Card #2);
   a. What is your opinion regarding these stated challenges? (Record sound)
   b. Please state other challenges regarding the topic that you know? (Record sound)

5. **Comments and Recommendations**

   Please state your comments and recommendations. (Record their sound)

Thank You for Your Cooperation

APPENDIX II

Show Card 1: Key Issues in Garden Identity Development
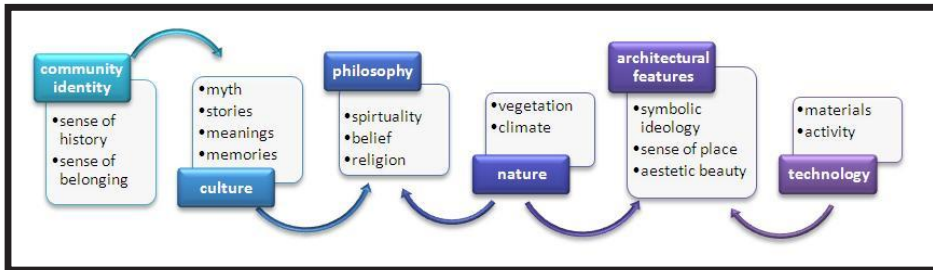
Show Card 2: Challenges in Development of Malaysian Gardens

| - Economic viewpoint | - Social viewpoint |
| - Political viewpoint | - Cultural viewpoint |

The Rural Learning Environment and Pupils' Learning of the English Language

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ABSTRACT

This paper outlines encouraging and discouraging factors in developing an English language learning environment for rural pupils with Asian backgrounds. This is achieved by first establishing a theoretical background to govern the research exploration. This research utilized social cognitive theory of learning as guidance in the current research explorations. Specifically, the study sample is drawn from six rural schools in Sabah, Malaysia (Southeast Asia). The study utilizes a mixed-method approach whereby findings are triangulated through interviews, observations, and questionnaires. The study reveals that majority of the schools visited lacked the necessary resources indicating a serious problem that hinders learning of the English language in rural schools. Conclusions consider the impact of certain environmental drawbacks on pupils' English language proficiency and the verdict that the existing environment has a negative impact on Asian rural pupils' language development. Further, it is emphasized that environmental issues in Asia require a deep grasp of the subject as well as various multi-disciplinary approaches, whose perspectives provide the basis for the functions of different environmental aspects.

Keywords: Rural pupils, English language, learning environment, achievement

INTRODUCTION

Though 70 percent of the world's population resides in rural regions, where hunger, literacy, and low school achievement are widespread, rural pupils have received minimal attention in comprehensive educational reform plans (Kam *et al.*, 2006; Rigg & Ritchie, 2002). Those plans are targeted to upgrade the literacy level in rural areas, which in turn increases the

productivity and earning potential of the population, and therefore directly reduces poverty (UNISCO, 2002).

In Asia, literacy levels specifically in the English language are below average due to historical and continuing weaknesses in the national education system (UNDP, 2010). This has resulted in the fabrication of an enormous percentage of illiterate population in Asian rural areas. Furthermore, national regional reports have indicated that a significant number of Asian rural pupils complete their schooling yet remain unable to read or write (Ozkal *et al.*, 2009).

Educationists familiar with the Asian rural context asserted the need to identify the reasons behind Asian rural pupils' low literacy levels, especially in the English language. Likewise, they affirmed the need to identify the obstacles that hinder pupils' development process in rural areas (UNESCO, 2010). Improving Asian rural pupils' ability to read and write as well as identifying learning obstacles will encourage pupils to participate more fully in society and access the benefits of prosperous educational development (AusAID, 2005).

The current research posits that a pivotal obstacle is the absence of an effective learning environment and resources in Asian rural schools and communities. Scholars who have investigated issues related to education standards in rural settings have reported a general dissatisfaction over the effectiveness of rural education (Nelson, 1983). In line with such findings, various organizations have undertaken measures to improve the learning environment in rural schools.

Other than the lack of the latest educational resources, rural schools face other challenges associated with its geographic location, such as limited school and community resources (Hannum, Irvin, Banks & Farmer, 2009). Although a handful of rural schools have successfully met various challenges, many remain unable to cope with the demand of modern education standards (Arnold, Newman, Gaddy & Dean, 2005).

The situation in Malaysia is quite similar to that of other Asian countries. There is a general agreement that Malaysian rural schools suffer from a dearth of basic elements such as effective teaching learning environments and availability of suitable resources in ensuring the attainment of goals specified in the Vision 2020 plan; these goals include becoming a developed nation by the year 2020 (Ministry of Education, 2009). These shortcomings hinder the educational mission and reduce rural pupils' ability to acquire knowledge and skills that their urban counterparts obtain more readily.

Research on this matter has indicated a wide disparity between rural and urban pupils' achievements especially in the learning context English as a second and / or foreign language (Ghani & Gill, 2003). In the state of Sabah, for example, existing literature indicates that Malaysian rural schools do not benefit from an appropriate learning environment, nor do they have the resources to support and assist teachers in teaching English as a Second Language (Ming *et al.*, 2010). However, it must be noted that studies that investigate the

impact of rural environment on Malaysian pupils' language learning process are rare. Furthermore, there is a lack of studies that investigate the role of families and communities in supporting and advancing English as a Foreign Language, pupil proficiency and language learning in Malaysian rural schools.

To participate fully in the economic and political life of a country, adults are expected to have a good command of the English language, which will enable them to obtain jobs after finishing school. Furthermore, good English language proficiency will enhance the ability to achieve aspired goals (Abdul Majid *et al*., 2005). However, pupils' performance in the English language in Malaysian rural schools, especially in the state of Sabah, is unsatisfactory. This is confirmed by the low achievement level of rural pupils in the English language in the

Primary School Evaluation Test "UPSR" in the state of Sabah, as shown in Fig.1.

This paper attempts to examine how the surrounding environment affects pupils' learning of the English language and their literacy ability in Sabah rural schools. It establishes the need for further research targeted to detect environmental impact on Malaysian rural pupils' educational development levels. Thus, contribution to increased understanding of the rural students' situation will be significant for a considerably wider application.

RESEARCH OBJECTIVES

This study came from the need of having a better understanding of the problems in English language learning among Malaysian rural pupils. This study also aimed at identifying some of the reasons behind Malaysian rural pupils' low marks in
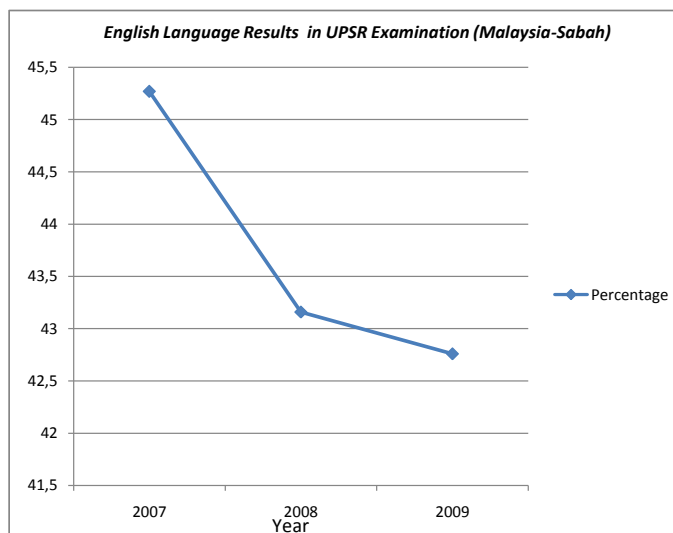
Fig.1: English Language Results in Primary School Evaluation Test "UPSR", Malaysia-Sabah (Ministry of Education-Sabah 2010)

English language. To achieve the objectives, the study attempts to answer the following research questions:

1. Does the existing physical learning environment suit the pupils' English language acquisition needs?

2. What is the teacher's role in creating an effective learning experience for the pupils?

3. Are there sufficient learning resources in the pupils' schools, homes and community?

REVIEW OF LITERATURE

Research Underpinning Theory

This research utilizes social cognitive theories of learning as guidance in the current research explorations. This theory assisted the researchers in examining the nature and status of literacy in the rural learning environment. Pupils in school are influenced by external factors on the one hand and by their environment on the other hand (Sawyer, 2002). In addition to environmental cultural influence, the researchers endeavored to lay emphasis on the cognitive elements of literacy, skills, and development of such in a social cognitive learning environment. The social cognitive theory is a learning theory based on the idea that people learn by watching what others do and that human thought processes are central to understanding personality (Darville, 1999). In other words, knowledge acquisition can be directly related to observing others within the context of social interactions, experiences, and outside media influences. If one were motivated to learn a particular behavior, then that particular behavior would be learned through clear observations. By imitating these observed actions, the individual observer would solidify the learned action and be rewarded with positive reinforcement (Miller & Dollard, 1941). In addition, social cognitive theory was defined as a series of a triadic, dynamic, and reciprocal interaction of personal factors, behavior, and the environment (Bandura, 1986). In subsequent research, Banadura (*1989)* argued:

> *"In social cognitive theory, people are neither driven by inner forces nor automatically shaped and controlled by the environment. As we have already seen, they function as contributors to their own motivation, behavior, and development within a network of reciprocally interacting influences. Persons are characterized within this theoretical perspective in terms of a number of basic capabilities, to which we turn next."*
>
> (Bandura, 1989, p.8)

In providing a full understanding of the functions of social cognitive theory, the researchers were able to generate a general question related to this theory; this is the extent to which this theory is beneficial in gathering the aspired research data.

This social cognitive theory provides the researchers with guidelines and a strong foundation to address the literacy issues with

a slightly different view from other cognitive theories, which consist of significant traits that are helpful in detecting different factors that may influence the learning environment in rural environment. In addition, the social cognitive theory provides clear guiding principles on how to construct a flexible sense of self-efficiency, which operates in concert with other socio-cognitive factors in a multifaceted causal structure (Bandura, 1999). The social cognitive theory provides a large body of particularized knowledge on how to develop cognitive structures and enlist the processes of the self system governing human adaptation and change (Bandura, 1997a). The determinants and mechanisms through which they operate are clear; hence, the theory provides explicit guidelines on how to structure conditions that foster personal and social changes (Bandura, 1999).

Child-friendly Schools (CFS) in Asia

The Ministerial Conference on Environment and Development (MCED) in Asia has effectively launched a major regional discussion for reviewing the state of environment and development in Asia. The review is based on evaluation criteria, obstacles and challenges, voices and perspectives towards achieving an educational environment conducive to the development process (Barley & Beesley, 2007). In line with such discussions, sensitive public awareness of various environmental problems has been witnessed throughout research and initiatives, pointing towards the regional concern for creating a conducive learning environment that heightens development levels. In other words, creating a friendly and conducive learning environment can assist pupils especially in rural areas to acquire knowledge in an effective manner. This type of environment is founded on the support from society and culture on the one hand, and the formation of a conducive home and school learning environment on the other hand.

Focus on the school environment has been detected in early Asian educational initiatives driven by the rationale that the school is a significant entity and so is the social environment in the lives of pupils. To address this concern, a child-friendly schools (CFS) program was launched in 1997 in Thailand to emphasize the rights of the child to receive effective "child-friendly" education that is environmentally and physically safe (Shaeffer 1999).

The CFS framework consists of five broad dimensions.

> *"Inclusiveness; effectiveness (relevance and quality); health, safety and protection; gender-friendliness; and involvement of students, families and communities."*
>
> (UNICEF, 2006: iii)

In line with the CFS program, many Asian countries in May 2004 agreed to develop child-friendly schools in their respective educational contexts in an attempt to achieve quality education this was designed for all pupils with the support of

teachers, families, and all the segments of society, with goals of achieving the principal aim of "education for all" (UNICEF, 2005).

Since then, the CFS approach has continued to influence the educational systems in various countries. As a result, the program has evolved into the "Whole School Reform," which is geared towards improving the outcomes of children's learning by altering schools and education systems to develop child-centered education in child-friendly schools (Beska *et al.*, 2007).

In Malaysia, numerous educational initiatives have been witnessed, such as the Malaysian Education Summit, that have sought to help educationists in rural areas to embrace modernization by effecting reforms in educational systems. This is because education in Malaysian rural schools has become a serious issue in the wake of neglect (Malaysian Education Summit, 2008).

The country launched many literacy programs targeted at eliminating illiteracy in the country especially in rural areas such as the state of Sabah. The launched programs prioritized the rural pupils' needs. With this awareness, educational research now pays significant attention to factors affecting rural students' educational levels as well as the learning and teaching process involved (Miner, 2006; Wenger & Dinsmore, 2005; Wang, 2009).

On the other hand, as the Malaysian Ministry of Education continually attempts to provide a pathway to meet the need for comprehensive policy reform in rural

areas, it is crucial to identify specifically the problems faced by these rural pupils. Meanwhile, educationists asserted the need for educational comprehensive educational policy reform that takes into account the different dimensions of effectual reform (Karsou, 2005). In addition, the importance of education was declared as the main element in fostering the goal of being a fully developed nation by 2020. Therefore, the Ministry of Education is committed towards making this a reality (Ministry of Education, 2009). Based on the aspirations to become an industrialized nation, Malaysia has made conscious efforts to improve and develop education to achieve a literacy rate of 100% by the year 2020. Though the country has a long way to go, there are positive indications that the literacy rate is increasing (Morad, 2002).

Learning Environment's Impact on Pupils' Early Education

Recent research (Asici, 2009; Walker & Clark, 2010) on pupils' learning environment emphasized the impact of particular environments, culture, and the classroom on pupils' early education and behavior. Meanwhile, other researchers discovered that as income level increases and the surrounding environment becomes comfortable, children's natural learning experiences related to language learning increase as well (Asici, 2009). Young children respond differently based on the design of the environment in which they live, an effectively designed classroom has the potential for positively influencing all areas

of children's development: physical, social /emotional, and cognitive. Language and learning are nurtured in an environment that values and plans appropriate opportunities (Burns, Griffin & Snow, 1999).

Adequate quality facilities will allow teachers, pupils, subject matter, space, and time to interact within the learning and teaching process, which in turn creates a conducive and well structured learning environment. A well-organized classroom physical environment will positively assist teachers and students to create a climate conducive to language learning (Savage, 1999; Stewart & Evans, 1997). Appropriate classroom physical arrangements form a base for supplementing pupils with effective education and facilitate positive language learning and language teaching interactions.

In other words, the classroom physical arrangement should be set according to the varied cultural and linguistic characteristics of the pupils; it should satisfy the learner's needs as well (Bettenhausen, 1998; MacAulay, 1990). The physical arrangement of the classroom environmental print is considered an important aspect that contributes to student proficiency. Collectively, environmental print is defined as the print found in the natural instant environment of children, including logos, labels, road signs, billboards, clothing labels, coupons, and newspaper advertisements. Children encounter environmental print as a first stage before reading print in books (Kirkland, Aldridge & Kuby, 1991).

In addition, a center-based environmental print activity allows pupils to construct their own knowledge driven from their interaction with different environmental aspects; these enhance their proficiency levels and language learning. On the other hand, parents play an effective role in pupils' language development process and in guiding children to learn essential elements of language learning prior to attending school (Mason, 1980; Walker & Clark, 2010). According to Clay (1993), many researchers have discovered that preschool children explore the details of print in their environment, on signs, cereal packages, and television advertisements. Children develop concepts on books, newspapers, and other print available in their environment. Consequently, more advanced concepts on print emerge from children's earlier understandings.

Children's early years are characterized by rapid increase and improvement. Children enter their pre-school years with a considerable amount of learning experiences from their friends and relatives. Since education is specific to each language and culture, a young child requires assistance in making sense of environmental print from a more able peer, parent, or teacher (Vygotsky, 1978). Children are influenced by multiple contexts in which there are reciprocal interactions between them and their environment. Likewise, children are affected by face-to-face interactions, such as those that occur at home or school. However, children are influenced as well by their parents' or guardians' workplace and the social, historical, political, and economic realities of the times.

The day-to-day context is especially important in using environmental print to plan and implement an integrated curriculum to meet children's needs (Kirkland, 2006). Children's inventions and approximations about language in a society full of print begin long before they attend school. Furthermore, children develop ideas about language in the same way they develop ideas in other learning areas.

There are a number of activities that support children's language learning development. These are derived from families, communities, and schools. The family's involvement in the learning process always indicates positive impact on student achievement levels, including attendance, activities, and school awareness (U.S. Department of Education, 1994). Parents, teachers, and the community are the most important sources for knowledge acquisition, and research on the improvement of pupils' proficiency levels illustrated that children perform better in school when parents are involved in the educational process (Eagle, 1989).

RESEARCH PROCEDURES

The targeted population of this research are the rural teachers' and pupils' in the Malaysian rural schools, using both qualitative and quantitative research methods. The research instruments used on the target sample were namely; questionnaire, interviews, observations and document analysis. In addition, quantitative data was obtained from the pupils' diagnostic tests. The

diagnostic tests were administered to Year 3 and Year 5 pupils. The Year 3 pupils attempted the diagnostic test that were developed based on the Year 3 English curriculum, while the Year 5 pupils sat for the diagnostic test developed based on the Year 5 English curriculum.

The items in the Year 3 test were divided into 6 sections:

1. Section A: subject verb agreement;
2. Section B: Correcting sentences through rearrangement of words
3. Section C: colours and basic shapes;
4. Section D: reading comprehension;
5. Section E: sentence construction and;
6. Section F: guided composition writing.

The items in year 5 test consisted of 5 sections:

1. Section A: pronouns;
2. Section B: Correcting sentences through rearrangement of words;
3. Section C: basic grammar- articles, comparatives, connectors;
4. Section D: reading comprehension and;
5. Section E: guided composition writing

The questionnaire consists of 4 sections designed and administered to the teachers in the rural areas who are teaching English language in the selected schools. The questionnaire for teachers (Appendix B), was developed by the researchers from Brown's theory (1995) as shown in (Appendix A). The deployment of

quantitative techniques entailed the use of the teachers' questionnaire in order to ensure objectivity and generalizability.

As for the collection of qualitative data, classroom observations were done and structured interviews with teachers were carried out by the researher.

Group interviews were not used because of the concern that remarks made by participants may affect the type of the information in focus groups sessions (Debus, 1988). On the other hand the classroom observation technique was activated through observing teachers teaching, pupils' interaction with teacher and among themselves and classroom or school environment. Using the data from the questionnaire, the interviews, observations and the analysis of documents, a triangulation was done.

The sample of the study was from six rural schools (Island, Riverside & Foothill) in the state of Sabah during the school year (2007-2008) and it consisted of seven teachers and 105 pupils. The sample of the current study is representative of the rural pupils in Sabah. Table 1 shows the codes of the interviewed teachers and schools in the study sample.

For example, an interviewer's response that is recorded from Teacher No. 1 at the first school located on the riverside will be referenced as **Teacher A-S1-R**. Similarly, an interviewer's response from Teacher No. 3, who is from the fourth school located on the Island, will be referenced as **Teacher C-S4-I**.

FINDINGS AND DISCUSSION

The results and analysis of data was done and the research questions below were answered:

Does the existing physical learning environment suit the pupils' needs?

An environment that is conducive to learning is the main determinant of effective education. The results obtained from the data collection techniques employed in the current study indicated that the environment was not conducive in S1, S3, and S6 for English language learning. As shown in Fig.2, the notice boards and classroom were almost empty. Aside from the unhelpful learning environment, the schools lacked appropriate facilities such as spacious and comfortable classrooms equipped with suitable learning tools. The study also found

TABLE 1
Codes given to the Teachers and Schools

School	Code	Category	Code	Teachers	Code
School No. 1	S1	Island	I	Teacher No.1	Teacher A
School No. 2	S2	Riverside	R	Teacher No.2	Teacher B
School No.3	S3	Foot Hill	FH	Teacher No. 3	Teacher C
School No.4	S4	Island	I	Teacher No.4	Teacher D
School No.5	S5	Riverside	R	Teacher No.5	Teacher E
School No.6	S6	Foot Hill	FH	Teacher No.6	Teacher F

that the classrooms were shared by two or three cohorts of pupils.

In contrast, schools such as S4 and S5 (Fig.3 and Fig.4) did have some materials on the walls, such as poems and charts. However, these materials were unsuitable for the pupils because they used a highly advanced level of vocabulary. Creating and maintaining stimulating learning environments have been shown to be achieved through effective classroom organization that considers all the elements constituting balanced education. Moreover, organizing an effective physical environment of the classroom will prevent pupils and teachers from experiencing behavioral difficulties (Savage, 1999; Shores, Gunter & Jack, 1993) and improve student proficiency levels (Walker, Colvin, & Ramsey, 1995).

Fig.2: 'Empty' classroom, 'Empty' walls do not promote a conducive learning environment
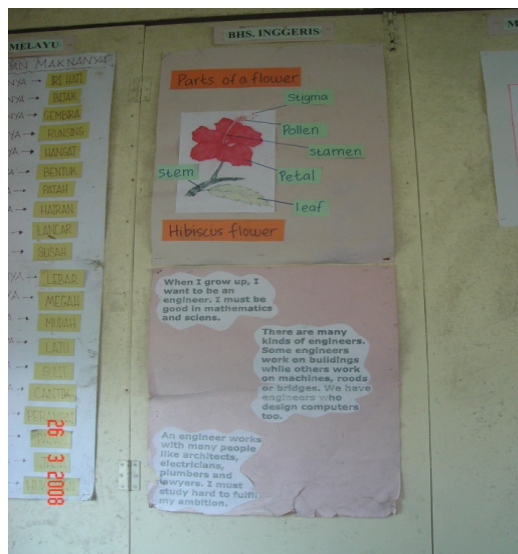
Fig.3: Poster- Too difficult for pupils

What is the teacher's role in creating an effective learning experience for the pupils?

The findings of the study revealed that most of the teachers at the sample schools were not professionally qualified, did not prepare instructional materials, and lacked ability to plan student management for different educational needs and capabilities. One of the main reasons behind this was inadequate teachers' training. In fact, in interviews, many teachers declared that they lacked training and language skills, which are required for their teaching. A well-implemented teacher training program will not only help improve teachers' abilities (Werikat, 2009) but will also influence pupils' performance (Wiley & Yoon, 1995).

The findings of the study indicate that in S1, the teachers were not very concerned about school activities, resulting in poor classroom management. In contrast, teachers in S2 and S3 showed concern but faced several stumbling blocks, such as lack of materials and resources. In S4 and S5, charts and pictures throughout the school made the environment very cheerful (Fig.5 and Fig.6). However, in S6, although some of the teachers were professionally qualified, they seemed unconcerned about the pupils' progress. Thus, teachers' professional qualification in different aspects of teaching can be considered insufficient in upgrading pupils' performance. For teachers to possess the drive and a set of values is more important to improve their teaching practices and subsequently raise their pupils' proficiency level. For example, teachers did not implement any of the data derived from pupils' assessments, hindering their ability to devise suitable instructional strategies and create an environment conducive to learning. Such assessments provide teachers with valuable information on developing appropriate opportunities for learning improvement (Chrisman, 2005).

Fig.4: Vocabulary Poster- Too difficult for pupils

With regard to teachers' role in creating an effective learning environment, the study revealed the following:

- Teachers did not clarify the role of their pupils in the surrounding environment.

- Teachers did not provide situational dialogues related to their communities.

- Teachers did not find inventive ways to teach language in an effective learning

Teachers' deficiency in creating an effective learning environment awareness decreased pupils' understanding of various environmental aspects, which in turn reflected negatively on pupils' interest in learning the language. The study found that apart from S4, all the schools lacked language-related initiatives to build pupils' confidence and motivation to learn English. Teachers in these schools were highly examination-oriented because English was not considered important in pupils' immediate needs.

Moreover, they considered passing the exams more essential. The teachers did not apply motivational strategies to improve pupils' drive to learn the language. Pupils' motivation is recognized as one of the most important factors in acquiring language skills. In addition, "motivation serves as the initial engine to generate learning and later functions as an ongoing driving force that helps to sustain the long and usually laborious journey of acquiring a foreign language" (Cheng & Do¨rnyei, 2007, p.153).

Only S4 organized activities related to English language learning, such as English Week. According to Teacher B (S4-I), some activities were conducted for the pupils. He also recalled the previous year's establishment of a pupils' learning club and holding of outdoor activities. Some schools, such as S4 and S5, attempted to create an environment conducive to learning by hanging colorful posters on the walls and building reading huts for pupils.

Fig.5: Notices on the classroom walls

However, the pupils lacked the motivation to learn the language because the teachers did not use examples from their surrounding environment. Those that were often used contained outdated information not related to the pupils' environment or their needs. Textbooks are considered the basis of language input pupils receive because they provide the content of the lesson and supplement teachers' instructions. Textbook structure, which is targeted to upgrade teachers' professional adequacy and pupils' language learning levels, provides support for new teaching approaches related to environmental aspects (Stanley, 2003) inside and outside the classroom.

Fig.6: Notices on the Library Wall- Effective pictures

Fig.7: A Reading Hut in S4

The study suggests that textbooks help in teaching numbers, colors, and greetings in S2 Year 1. According to a teacher, the aspects of numbers and colors are repeated in Math and Science. One weakness of S4 is that the level used is too high for the pupils, and the content is not appropriate to their background and experience.

> *I used the textbook before but, unfortunately, the content is very long. The story inside is also very long. Eventually, I gave priority to the UPSR material.*
>
> (Teacher C, S5-R)

> *No, I think the textbook in use now is not suitable for pupils' abilities and academic level; the syllabus is above the pupils' levels.*
>
> (Teacher D, S6-F)

The preceding quotations derived from the interviews with teachers revealed their dissatisfaction with the existing curriculum, which is not suitable for pupils due to the difficult topics which are beyond the pupils' academic abilities. It is important that curriculum be designed with topics that are in accordance with pupils' needs, abilities and academic level.

Are there sufficient learning resources in the pupils' schools, homes, and community?

Both quantitative and qualitative data in this study showed that S1 had resources in the form of a mini-library. However, the books were not suitable for the learners because many of them were irrelevant in terms of language and content. In S2, resources were not readily available to the pupils. Even newspapers were not available for reading or referencing, to both teachers and pupils. In S3, pupils had access to some of the resources. In S4, resources were inadequate; the books' contents were so difficult for the pupils that too many books remained unused. Only a handful of pupils in all the schools visited the mini-library; they seldom read English materials or borrowed books, especially books written in English. However, pupils in S6 used the library and borrowed books, especially English books. School libraries can generate a positive effect on pupils' proficiency and learning levels if they are used in a efficient manner, especially at the primary levels (Williams *et al*., 2002).

Year 5 pupils in S1 acknowledged the fact that their teachers used different teaching aids, such as pictures and numbers, in teaching English. However, Year 3 and 4 pupils said that their teacher only used the textbook in class.

In S4, when there is electricity supply, teachers use computers or television; in most instances, they use handouts in teaching. Teachers in S5 use the Internet and resource books. In S6, when electricity supply is available, teachers use computers, otherwise rely on textbooks.

The survey results showed that teachers used various technologies (LCD panel, overhead projector, video, TV, and Internet) as teaching aids (mean=3.48). Teachers also concurred that their schools provided adequate teaching aids for ELT (mean=3.21).

Fig.8: Outdated English books in the S4 library/Do not motivate pupils' to learn

Fig.9: Resources available in S6

Fig.10: Resources available in S6

I have used television before to support my teaching. Sometimes I allow my pupils to watch cartoons in English language.

(Teacher B, S4-I)

I, myself, bought books for my students. Sometimes I let them use my broadband Internet connection for surfing.

(Teacher F, S4-I)

It was observed that teachers still used very traditional teaching methods. A main cause for this situation is the lack of quality technological resources that should be provided by the Ministry of Education for each educational level in these rural schools. Pupils in these schools looked to their teachers as their main source of knowledge because of the absence of resources at home or community center for the pupils' use. One of the teachers interviewed verified this point:

I gave them four story books, namely, Cinderella, Sleeping Beauty, Snow White, and Jack and Jill. The pupils were very excited; sometimes they would ask me to act inside the classroom based on the story book. But sometimes I do not have enough time, so I ask them to read and try to understand the story book themselves.

(Teacher C, S5-R)

In the case of S1, newspapers were unavailable on the island. According to the pupils, the shops did not sell any newspapers. There were also no resources at home for the pupils. According to a teacher in S2 , nobody in the village has the ability to converse in English. Even the community had no resources for the pupils' use. A teacher affirmed this point in the interview:

I think they don't have newspapers. I asked them before if they had any and replied that they didn't know.

(Teacher C, S5-R)

The unavailability of resources in the community center was common in all the schools in the study.. This resulted in the lowering of pupils' English language learning levels and the community centers' reduced ability to make a positive educational difference. The study also revealed that parents did not give the pupils any encouragement to learn English. The parents in these areas are unaware of the importance of supporting their children in learning the English language.

There is concrete evidence that the home environment affects pupils' learning outcomes in their early life (Nechyba *et al.*, 2005). Research worldwide indicates that families are linked to schools in different activities, such as "parent participation" or "school-family associations" (Jordan *et al*., 2001). Lack of support negatively affects pupils' English language learning. However, only the parents in S3 gave encouragement

to their children to learn English. As one teacher stated in the interview,

Pupils do not learn the English language even at home. There is also no encouragement and support from the parents. If pupils don't have any guidance in English language, it will be hard for them to learn.

(Teacher B, S3-I)

Parents' increased level of positive encouragement and involvement in their children's education will reflect on their children's knowledge and activities in school, which in turn will positively affect their proficiency levels.

CONCLUSION

The triangulation of data postulates clearly the effect of the environment on rural Malaysian pupils' English language levels. Evidently, the findings of the study show that they face many difficulties in early education in terms of the language learning environment inside and outside the school. However, the two principal causes of rural Malaysian pupils' low proficiency levels (i.e., poor learning environment and lack of resources) are rarely discussed in professional journals or books on applied linguistics. The relevant literature indicates lack of studies specifically focusing on the effect of environment and resources on pupils' English language development and their role in improving rural pupils' proficiency levels. Thus, there is a compelling need to understand the effect of the environment and resources on rural Malaysian pupils' learning.

In sum, the results of the study show that the learning environments in the selected schools are not conducive to English language learning. For example, notice boards and classroom boards are almost bare. The schools also lack adequate facilities such as appropriately sized classrooms equipped with suitable effective teaching tools that provide comfortable learning conditions.

The teachers lack concern in implementing positive changer are not adequately trained to manage their classrooms and lack the language skills required to help the pupils. Pupils lack motivation to learn the language because teachers do not use examples such as from the surrounding environment, to help them understand better. However, those who do use relevant examples that match the pupils' background knowledge often rely on outdated information.

The interviews with the teachers suggest their dissatisfaction with the existing curriculum, which is not suitable for the pupils. The curriculum's topics are challenging and beyond the pupils' academic abilities and English language proficiency.

Rural teachers have been observed to lack quality technological sources in schools, forcing them to teach in accordance with traditional methods that are unable to keep up with the massive worldwide educational development. In turn, these traditional methods compel pupils to look

to their teachers as the main resource of knowledge. In the interviews, the teachers indicated their frustrations with the schools' lack of proper educational resources. The problem also largely stems from the absence of sufficient family support and encouragement because rural parents do not realize the importance of their own role in advancing children's proficiency levels.

Although policy makers are concerned about the factors influencing the community structure of rural areas, the need to direct their efforts towards developing rural education is critical. This is important to narrow the gap of the communities' knowledge Determining the various factors facilitating rural education development provides a good start. The theory (i.e., social cognitive theory) that underpins the research, suggests that pupils function as contributors (Bandura, 1999) to their own motivation within an environment of commonly interrelated influences. It also suggests that these pupils do not apply everything that they have learned because of various environmental factors influencing the interpretation of the learning acquired (Bandura, 1996).

This study is significant because it has investigated and discussed rural pupils' proficiency development and the factors that influence these proficiency levels. Based on the results of the study and in light of the rural pupils' needs, the following recommendations are made:

• The Ministry of Education should investigate the reasons behind the lack of resources in Malaysian rural areas and schools.

• The Ministry of Education should assign teachers who are trained to manage pupils' educational development.

IMPLICATIONS AND DIRECTIONS FOR FURTHER RESEARCH

The results of the study and the identification of the factors that influence pupils' proficiency levels led to suggestions on how best decision makers can create conducive learning environments in Malaysian rural schools. Determining the various factors affecting pupils' conducive learning environments has serious implications for the way learning inside classroom is conducted and for the way recourses for language learning is considered effective and useful in rural schools.

The utilization of social cognitive theory in this study integrated pupils' language acquisition with learning environment. This will aid decision makers to refine the processes that guide rural education development in order to monitor and develop language learning in rural classrooms. In addition, identifying teachers' role in creating an effective learning experience for rural pupils will aid teachers in rural schools to undertake the roles while managing their classrooms and to create better educational climate that would realize the aspired standards in promoting language learning and teaching process in Malaysia.

There are several important questions that need to be investigated in future

research. With regards to feature set, this study has confirmed the influence of the learning environments (the physical learning environment, learning experience, and resources) on rural pupils' learning of the English language. The motivation of both teachers and students has not been discussed in this study as a major influencing factor. We believe that this may be a useful research direction, with the view of investigating motivation in comprehensive research where motivational factors may not always be available. We also believe that further research should explore the background of both teachers and students and its effect on the teaching and learning processes in rural areas. The researchers in this study have suggested the possible causes of rural students' lack of knowledge and showed a portion of the current educational situation in the Malaysian rural context. Determining other causes is a research aim that deserves to be investigated in the future.

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A Comparative Study: Verbal Versus Printed Guiding Grid

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ABSTRACT

Assessment is a crucial part of education as it provides information to be used as feedback to support the teaching and learning process. Oral assessment is conducted at both primary and secondary schools in Malaysia. Previous researches highlight that students are unable to score well in their oral assessment. Therefore, the aim of this study is to examine the effectiveness of sharing assessment criteria, the Guiding Grid (GG), with students to improve oral performance among them. This study was conducted with Form Four students from an urban school. The students' oral assessments were conducted three times and their scores were recorded. The first assessment was done without sharing the GG with the students. Before the second assessment the researchers shared the GG verbally. Finally, 12 students who scored below the satisfactory level were given the printed GG and were assessed for the third time. The findings show a marked improvement in students' oral performance after the sharing of GG, orally as well as in print form. There is a significant improvement on the 12 selected students' oral performance when the printed GG was shared with them. This study also explores students' opinions on sharing the GG with them.

Keywords: Oral assessment, guiding grid, motivation, flexibility, designing guiding grid

INTRODUCTION

Assessment in learning can take place in many forms. Some of the modes used by teachers in assessing their students' achievement are conducted through examinations, tests, quizzes, assignments, special projects or doing portfolios. These

modes of assessment are conducted either individually, in pairs or in small groups. For example, in the teaching of the English Language, all the four language skills i.e. listening, speaking, reading and writing are assessed according to the requirement of the individual institutions. Generally, in formative or summative assessments, students are assessed throughout the semesterthroughcontinuous assessment or at the end of the semester respectively, so that they can be given grades.

Assessment is "… all those activities undertaken by teachers, and by their students in assessing themselves which provides information to be used as feedback to modify the teaching and learning activities in which they are engaged" (Black, P. and William, D., 1998). It should provide information on the current state of students' achievements in order to provide students with information that will help them to improve their learning in future. Assessment requires imparting results that conveys sufficient, understandable details to guide the students' actions.It can also be defined as "the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to go there" (Assessment Reform Group, 2002). In this way, both the students and the teacher will be able to distinguish not only the students' current level of achievement, but also how much the students'ability have improved, which is a great booster for confidence and motivation.

This study involves assessing students' oral achievement in an urban school in Malaysia. It is the Education Ministry's requirement that English Language teachers assess their students' oral achievement twice a year in Form Four and once in Form Five. In Form Four, the first assessment is carried out individually in the first semester and the second assessment is conducted in pairs in the second semester. In Form Five, this oral assessment is conducted in small groups of 4 to 6 students. The researcher used the Sijil Pelajaran Malaysia (SPM) Oral English Assessment Criteria which is called the Guiding Grid (GG) in this study. The SPM in Malaysia is a public examination for Form Five students which is equivalent to the O Level Examination. The GG (Appendix A) has five constructs or tasks and the score for each construct ranges from 1 to 6. The 5 constructs are: "To converse effectively on a topic with appropriate response", "To speak fluently using correct and acceptable pronunciation", "To speak coherently", "To speak the language using a wide range of appropriate vocabulary within contexts", and " To speak using correct grammar" (MOE, 2010). 1 mark is awarded for very weak performance, 2 marks areawarded for weak performance, 3 marks when students' performance is satisfactory, 4 or 5 marks are awarded if students' performance is good and 6marksareawarded to students who are excellent in their oral performance. Each construct or task in the GG is given with clear explanation on how many marks are awarded to students who accomplish the

task. For the purpose of this study, the marks 4 and 5 are labelled as "Good" and "Very good" respectively.

The practice of using scoring rubrics has been researched extensively and researchers have documented support for its use at schools, colleges as well as at universities (State of Colorado, 1999; Schrock, 2000; Moskal, 2000; Knecht, Moskal & Pavelich, 2000). Scoring rubrics are descriptive scoring schemes that are developed by teachers to guide the analysis of students' work (Brookhart, 1999). However, recent studies have shown that scoring rubrics as a Guiding Grid (GG) can support students' performance and also guide the teaching and learning processes (Karthiyaini.D, 2009). This study focuses on the difference in students' performance when sharing the GG verbally as compared to the printed forms.

STATEMENT OF THE PROBLEM

Generally, the teachers do not share their teaching goals with their students which would ideally be their learning goals. These teaching and learning goals are the basis of the designing of the GGShulman's Table of Learning supports the fact that engagement and motivation enhances increase in knowledge and understanding of what is learnt. Thus, the sharing of the GG with the students is the point of engagement and motivation that occurs in the teaching and learning process. However, teachers in the identified school do not use the GG for the oral assessments. Students are informed that they have to prepare a topic of their choice for the oral assessment.They are also told that the first assessment will be done individually and the second assessment in pairs. Students are not provided with the GG to show them what they should do to qualify for the highest score. As such students do not have an opportunity to read the rubrics for each construct so that they can attempt their oral assessment to thebest of their ability. Students' performance is inhibited due to lack of understanding and this reversely affects theiractions. Some teachers provide the information or rubrics in the GG verbally. This practice does not seem to bring about positive learning experiences because students do not get the opportunity to reflect on their own performance and are unable to critique their own learning as supported by Shulman's Table of Learning. The students' inability to reflect and critic their own learning process impairs their ability to make sound judgements and design positive actions for future learning. The lack of the above learning skills in the students prevent them from being committed to the learning that happens which should ideally create an identity and instil values in them.

OBJECTIVES

The study aims to explore the use of the GG provided by the Ministry of Education (MOE) as a link between teaching, learning and assessment as championed by Shulman's Table of Learning. The objectives of this study are:

1. To identify the effectiveness of using GG as an instrument to guide students to enhance their oral performance and the learning process.

2. To explore students' views on the implementation of GG for their oral assessment, which is an attempt to support reflection, critical thinking, making judgements, designing future actions and being committed to their identity as learners.

3. To assess students' oral achievement after the implementation of GG.

RESEARCH QUESTIONS

In view of the objectives mentioned above, this study seeks to answer the following research questions.

1. What is the difference in the students' English Language oral performance before and after the GG is given verbally?

2. What is the difference in the students' English Language oral performance when the GG is given verbally and in the printed form?

3. What are the students' views in implementing the GG for their English Language oral assessment?

4. What are the teachers' views on the use of the GG for the English Language oral assessment?

POPULATION AND SAMPLING

The population of this study is from a semi-urban school and is focused on Form Four secondary school students. There are fifteen Form Four classes in this school and the classes are divided into three different proficiency levels. Each proficiency level

has five classes and the researcher was given the high proficiency level Science streamed class. The researcher used all the students in her class to conduct this research. This method of subject selection is known as convenience sampling (Creswell, 2005).

CONCEPTUAL FRAMEWORK

The conceptual framework for this study is adapted from Shulman's Table of Learning (Carnegie Foundation, 2005). The introduction of the Guiding Grid supports the engagement and motivation of students with the task given. This engagement has a positive effect as it leads to understanding and supports the depth of knowledge gained. The sharing of the teaching and learning goals motivates students and improves performance and action by the students.

Students' views on the effectiveness of using the Guiding Grid encourage judgement making skills, whichencourage students to be able to use knowledge gained in various other situations. Eventually, this ability to judge and apply knowledge builds confidence in students. They are able to be more committed to their own learning process and this commitment in return creates a strong individual identity. This is a cyclic process where students complete one cycle of learning and move on to another cycle of learning. The above framework manifests itself positively in the methodology used in this study.

FLEXIBILITY OF THE GG

Traditionally the scoring rubrics are used for assessing various students' activities.

This includes language skills and group as well as individual activities (Chicago Public Schools, 1999; Danielson, 1997a; 1997b; Schrock, 2000; Moskal, 2000; Karthiyaini.D, 2009). Students' writing and oral work can also be assessed using the scoring rubrics.

The scoring rubrics can also be used for various subjects such as Language, Mathematics and Science (e.g., ChicagoPublic Schools, 1999; State of Colorado, 1999; Danielson, 1997a; 1997b; Danielson & Marquez, 1998; Schrock, 2000). Each task given to students can be supported with a specially designed scoring rubric.

The use of the scoring rubrics as GG is dual-pronged. It guides the students to move on to the next level of improved performance because the detailed description in the rubrics guides the students to know where they are in the learning process and what they need to do to move on to the next level.

As for the teachers, the grid guides them to plan their teaching to meet the students' needs. The students' weaknesses in a subject or certain areas in a subject are easily identified based on the students' performance and the rubrics given in the GG. Thus, the teachers get to address weaknesses of the students in the next lessons.

DESIGNING THE GG

The GG should ideally be designed before (Assessment Rubrics, 2001) the teaching of the subject begins.This allows the teacher to plan the teaching to meet the skills that will be assessed in a particular subject and to match the teaching to achieve the subject's learning outcomes by the end of the term or semester(Klenowski, 2003). Brookhart asserts that the first step in designing a scoring rubric is to clearly identify the qualities that need to be displayed in a
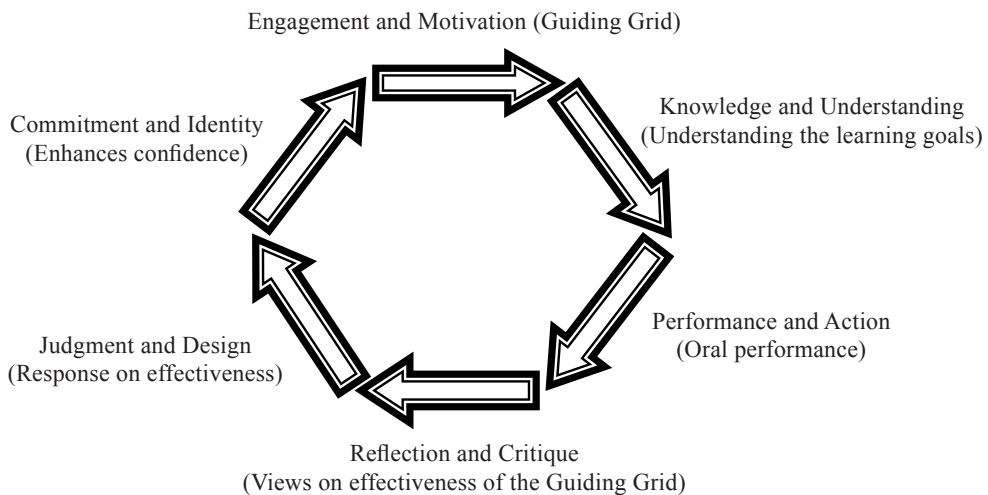
Fig.1: Conceptual Framework
(Adapted from Shulman's Table of Learning - Carnegie Foundation, 2005)

student's work to demonstrate proficient performance (Brookhart, 1999).

Hence, the programme learning outcomes and the subject learning outcomes are carefully matched based on the syllabus provided for the subjects. The rubrics in the GG closely support the subject learning outcomes at the end of the term or year. Each task designed for a particular subject should closely shadow the learning outcomes for the subject.

The designing of the GG also enables different teachers teaching the same subject to assess students in an objective manner. This is to maintain inter-rater and intra-rater reliability. The descriptive rubrics in the GG follow a systematic improvement in performance from a weak student to the best student. The highest marks are allotted to work which display the best qualities and the lowest marks for work that has the least qualities. The levels in-between depends on the teacher who is designing the GG. For example, the best student can be graded as "Excellent" and the weakest as "Weak" and the in-between level can be "Good" and "Satisfactory". The mark for each level is a range and students can be given a grade for the range rather than a rigid digit (mark) for their performance. It is the description provided in the GG that is crucial to support learning than the grade orthe mark given.

The qualities to be displayed in the work at every level must be distinct and easily differentiated from the level before and after it. If meaningful distinctions between the levels cannot be made, then additional levels should not be created (Brookhart, 1999).

This is because assessment should evaluate what has been taught in the classroom and not on levels that have not beentaught by the teacher. However, a GG designed by one teacher can be adapted and improved to cater for evaluating work in other sub-areas in the subject. Even the same teacher who designed the GG might want to make slight changes or improvements to the grid according to requirements of the same task when used for another round of assessment. These improvements will support and enhance the teaching and learning process.

THE GG AS A MOTIVATION FOR STUDENTS

Recent studies have shown that the use of the GG has improved students' performance. "Educative Assessment" (Wiggins, 1998) is a term used to describe techniques and issues that should be considered when designing and using assessments. The assessment designed should be educative. Students at a teacher training institute were given a GG with their English Language semester assignment. This study compared the grades achieved by students before and after the GG. The grades achieved by the students improved after being given the GG (Karthiyaini.D, 2009).Wiggins (1998) supports the idea that the nature of the assessment procedure influences the learning process and students' involvement in the process. He also supports the practice of assessment for learning as compared to assessment of learning. He contends that assessment should provide feedback to encourage revision to improve learning.

Black & Wiliam (1998) show that student's self-assessment skills, learned and applied as part of formative assessment, enhances student achievement.

The use of the GG as an assessment instrument guides and motivates the students to improve their performance as well as the teachers' performance. The GG functions as an analysis to survey students' needs and using these findings the teacher is able to plan future lessons to address their needs (Shepard, 2000). The fact that teachers get to address the students' needs, functions as a motivation to encourage students' learning.

METHODOLOGY AND DATA COLLECTION

This study is a combination of both qualitative and quantitative research which has qualitative data (interview) and quantitative data (oral scores and questionnaire). The quantitative approach involves data collected from the scores of the students' oral assessments and the questionnaire answered by the teachers. The oral assessment for the respondents of this study is conducted prior to sharing the GG with them. Respondents are tested individually with the topic of their choice. The researcher listens carefully and assesses them.

The second assessment is conducted after the researcher shares the rubrics in the GG with them verbally. The researcher explains each rubric and the scores which start from 1 being the lowest and 6 the highest score. Respondents are assessed again after two weeks and their scores are

recorded. The researcher selects twelve respondents whose scores are below 4 marks. The researcher gives the selected twelve respondents the GG in the printed form and explains how they can move to the next level. The twelve respondents are tested again after two weeks and their scores are recorded.

Apart from the 44 respondents, seven English Language teachers in this selected school are given a questionnaire to find out their perceptions of the GG. Their answers are tabulated and counted in percentages. The qualitative approach involves the detail analysis of structured interviews carried out with the twelve respondents who are given the printed GG.

Students' Performance

The students' performance shows an improvement after the introduction of the GG. Table 1 charts the students' performance for the first two oral assessments where Assessment 1 is conducted without sharing the GG while Assessment 2 is conducted after sharing the GG verbally. After sharing the GG, the students are given two weeks to prepare for their oral assessment. The constructs given in Table 1 are based on the documents provided by the Ministry of Education.

The respondents performance is graded in 6 levels which is 6 – Excellent, 5 and 4 – Good, 3 – Satisfactory, 2 – Weak and 1 – Very Weak. There is a marked difference in the respondents' performance from Assessment 1 to Assessment 2. In Assessment 2, 20 respondents (45.4%)

obtained 5 marks as compared to 4 marks (9.1%) in Assessment 1 for Construct 1. There was also an improvement in the respondents' performance for Construct 2 where in Assessment 1 only 2 (4.5%) respondents obtained 6 marks as compared to 8 (18.1%) in Assessment 2. Likewise, the difference in respondents who obtained 5 marks for Construct 2 improved from 3 (6.8%) in Assessment 1 to 17 (38.6%) in Assessment 2. For Construct 3, a total of 40 (90.9%) respondents obtained marks in the range of 4-6 in Assessment 2 as compared to 26 (59%) respondents in Assessment 1. The improvement for marks in the range of 4-5 is from 11 (25%) respondents for Assessment 1 to 32 (72.7%) respondents in Assessment 2 for Construct 4. As for Construct 5, the performance improved from 5 respondents (11.3%) in the range of 5-6 marks to 23 respondents (52.2%).

The above analysis shows an improvement in respondents' performance for they obtain higher marks for each construct after they are given the GG verbally. These findings answer Research Question 1. The students' performance in the various levels for the first two assessments is shown in the Fig.2 to Fig.4.

Statistically, the paired sample t-test was conducted to compare the students' performance in Assessment 1 without the use of the GG and Assessment 2 with the use of the GG. There was a significant difference in the scores for the Assessment 1 (M=3.69, SD=0.705) and Assessment 2 (M=4.59, SD=0.775) conditions; t(-12.879), p=0.000. This is shown in Table 2.

After the second assessment, there werestill respondents' who did not meet the desired grade of "Good" which carried total marks of 20 for the 5 constructs. Out of the 44 respondents, 12 did not meet the above desired grade. These 12 respondents wereprovided with the printed form of the GG and rubrics wasexplained to them again. These respondents werealso given two weeks to prepare for their next oral

TABLE 1
Students' performance in the first two oral assessments (N=44)

Assessment/ Constructs	Assessment 1 Marks						Assessment 2 Marks					
	6	5	4	3	2	1	6	5	4	3	2	1
1. Converse on a topic effectively with appropriate responses	2	4	24	14	0	0	9	20	10	4	1	0
2. Speak fluently using correct and acceptable pronunciation	2	3	15	24	0	0	8	17	18	1	0	0
3. Speak coherently	1	5	21	15	2	0	5	20	15	4	0	0
4. Speak the language using a wide range of appropriate vocabulary within context	0	5	6	23	0	0	3	21	11	9	0	0
5. Speak using correct grammar	0	5	20	18	1	0	1	22	9	12	0	0

assessment. The comparison of the weak students' performance before sharing the GG (Assessment 1), after introducing the GG verbally (Assessment 2) and after giving the printed GG (Assessment 3) are charted in the Table 3.

A repeated- measure ANOVA, with Greenhouse-Giesser correction, was conducted to assess whether there were differences between the average ratings of the three assessments. Results indicated that the participants did rate the three
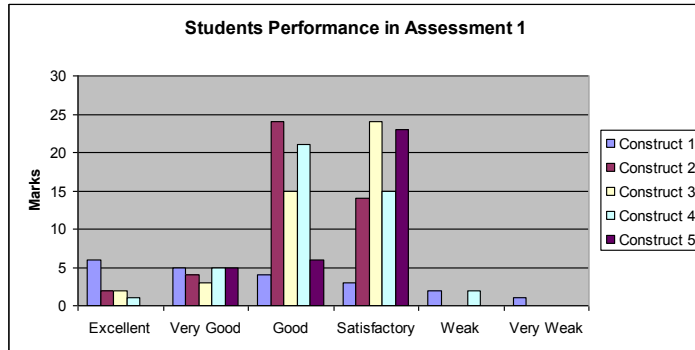
Fig.2: Students' performance in Assessment 1
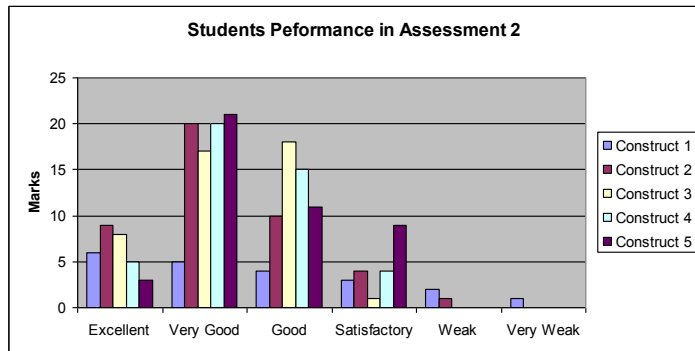
Fig.3: Students' performance in Assessment 2
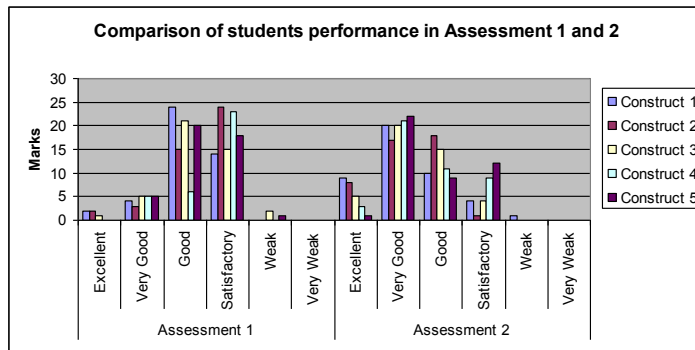
Fig.4: Comparison of improvement in performance before and after introducing the GG verbally

assessments differently, F (1.204, 13.245) =78.566, p < 0.001, eta =.877. The mean and standard deviations for the assessments are represented in Table 4. Examination of these means suggest that respondentshave improved in their oral assessment after the use of GG. The mean of Assessment 2 is higher than that of Assessment 1 and the mean of Assessment 3 is higher than that of Assessment 2.

The selected students' performances in the three assessments are shown in Fig.5 to Fig.8.

The respondents' performance for Construct 1 shows a progressive improvement from Assessments 1 to 3 where the majority of the respondents obtained 3 marks (75%) in Assessment 1, 4 marks (91.6%) in Assessment 2 and 5 marks (91.6%) in Assessment 3. The sharing

TABLE 2
Mean and Standard Deviation of Assessment 1 and Assessment 2

		Mean	N	Std. Deviation
Pair 1	Assessment 1- Before GG	3.6955	44	.70545
	Assessment 2 – After GG	4.5955	44	.77578

Significance level p < 0.001

TABLE 3
The selected students' performance in all the three oral assessments (N=12)

Assessment/ Constructs	Assessment 1						Assessment 2						Assessment 3					
	6	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	1
1. Converse on a topic effectively with appropriate responses	0	0	3	9	0	0	0	0	11	1	0	0	0	11	1	0	0	0
2. Speak fluently using correct and acceptable pronunciation	0	0	1	11	0	0	0	0	12	0	0	0	0	10	2	0	0	0
3. Speak coherently	0	0	1	10	1	0	0	0	9	3	0	0	0	10	2	0	0	0
4. Speak the language using a wide range of appropriate vocabulary within context	0	0	0	12	0	0	0	0	0	3	9	0	0	4	8	0	0	0
5. Speak using correct grammar	0	0	0	12	0	0	0	0	0	12	0	0	0	2	10	0	0	0

A repeated- measure ANOVA, with Greenhouse-Giesser correction, was conducted to assess

TABLE 4
Mean and Standard Deviation Comparison of the 3 Assessments

	Mean	N	Std. Deviation
Assessment 1- Before GG	3.0667	12	.19695
Assessment 2 – With verbal GG	3.5833	12	.13371
Assessment 3 – With print GG	4.5833	12	.43029

of the printed GG improved respondents' performance.

As for Construct 2, the majority of the respondents gradually improved from obtaining 3 marks (91.6%) in Assessment 1, 4 marks (100%) in Assessment 2 to 5 marks (83.3%) in Assessment 3. The same pattern of improvement is observed for Construct 3 and 4 where respondents gradually improved from obtaining 3 marks (83.3%) in Assessment 1, 4 marks (75%) in Assessment 2 to 5 marks (83.3%) and 3 marks (100%) in Assessment 1, 4 marks (75%) in Assessment 2 to 5 marks (66.6%) in Assessment 3 respectively.

In Assessment 1, respondents obtained 3 marks which is "Satisfactory" for Construct 5 (100%). In Assessment 2, there was no improvement. However, the respondents' performance improved in Assessment 3 where all 12 (100%) were able to obtain "Good" with 4 and 5 marks.

This indicates that weaker students benefit from the sharing of the printed form of the GG. It could be because they are able to read and understand the rubrics at their own pace and prepare themselves for better grades. These findings answer Research Question 2.
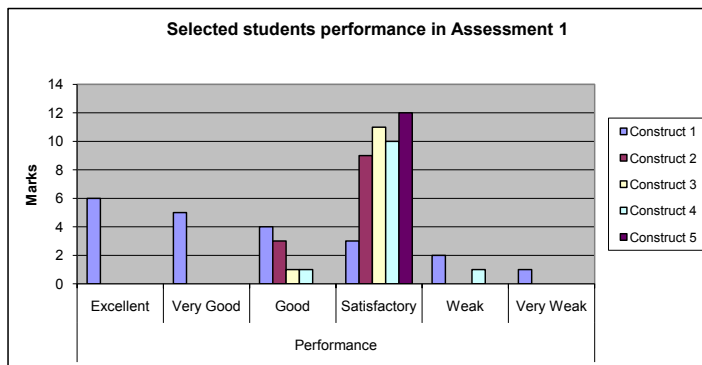
Fig.5: Selected Students' Performances in Assessment 1
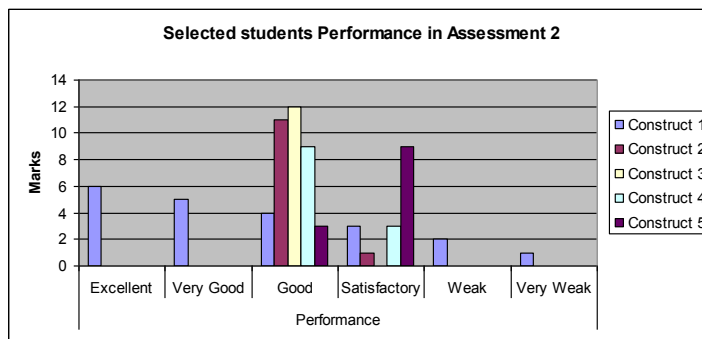
Fig.6: Selected Students' Performances in Assessment 2

Students' views on the implementation of the GG

Twelve students who werethe weakest respondents were interviewed for their views on the implementation of the GG. All twelve respondents agreed that the rubrics in the GG helped them in their oral assessment. Six students (50%) identified that the GG had improved their performance in various manners such as improved in their oral test, conversation, minor mistakes and grades. Four respondents (33.3%) asserted that the GG helped them improve their performance through scoring better marks or higher marks.

The respondents also confirmed that the GG given verbally improved their grades in the oral assessment. However, they cited various reasons how the printed GG helped them improve their oral performance further. Seven respondents (58.3%) stated that they knew more about marks, how to score better marks in order to improve their performance. Five of the respondents (41.6%) viewed the printed GG as a source of reference for it showed them the mistakes and weaknesses. There werean equal number of responses (33.3%) that identified the printed GG as a memory jolt for it helped them remember and also understand
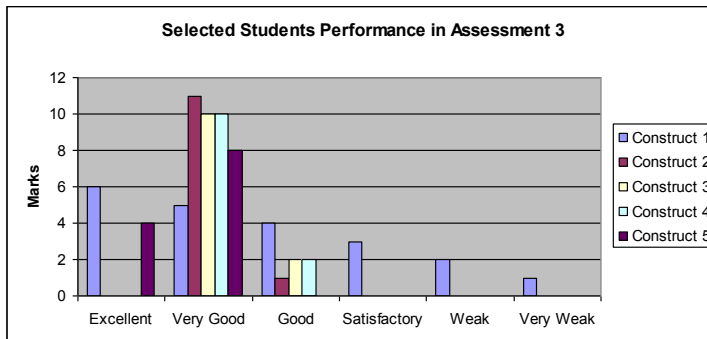
Fig.7: Selected Students' Performance in Assessment 3
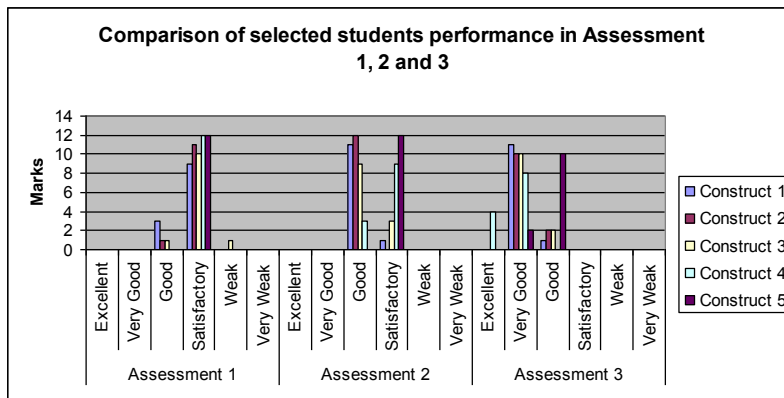
Fig.8: Selected Students' Performance in Assessment 3

the oral assessment as well as how the teachers awarded marks.

The twelve respondents agreed that every student should be given the GG before the oral assessment. The reasons they cited included the following: ten of the respondents (83.3%) claimed that students can get better marks by rectifying their mistakes; six respondents (50%) supported that sharing of the GG prepared them better for the oral assessment and gave them more practice. There were also two respondents who stated that other students "deserve" to know the GG. Based on the above analysis, it can be concluded that students benefit from the sharing of the GG especially in the printed form because it functions as a memory jolt as well as a reference point for them to improve their performance in the oral assessment. These findings answered Research Question 3.

Teachers' views on the implementation of the GG

A questionnaire was administered to gather views from teachers on the implementation of the GG in the classroom for the English language oral assessment. Seven teachers were involved in this study. All seven respondents carried out oral assessments twice a year. They claimed that students were given a general explanation about the requirements for the oral assessment and they also guided the students with the topics.

Three out of the seven teachers showed the oral assessment form to the students and explained to them about the scores. This oral assessment form carries the simplified version of the assessment rubrics provided in the GG by the Ministry of Education. However, all the seven respondents confessed that they do not use the GG provided by the Ministry of Education. Various reasons were cited for not using the GG. Five out of the seven respondents claimed that they were "not aware" and "didn't know" that the GG existed while three of them claimed that the GG was not provided to them. This reflects a situation where an effective system can be introduced but implementation can be faulty due to lack of support at grass root levels. At the institutional level, there must be an alert panel to enforce the practice to support effective teaching and learning.

There were three respondents who reasoned that the assessment evaluation form with the condensed version of the GG rubrics was sufficient as explanation to the students and to evaluate them. There was one respondent who asserted that the rubrics is "too wordy" and students "might be put off" by the details in the grid and this might "affect the spontaneity of their performance". These views seem to reflect a lack of understanding of the effectiveness of using the GG to support teaching and learning. Teachers at various levels should be introduced to the advantages of using the GG as a motivating tool to improve students' performance as well as a guide for teachers to plan for effective teaching. Assessment links teaching and learning through matching assessment goals with learning outcomes.

The introduction of the GG as an assessment tool to support teaching and learning should ideally be done as an

induction to all new staff at schools and other institutions. It can also be introduced during sharing sessions and continuous professional development of teachers (CPD). The implementation of the GG should be monitored regularly to sustain the usage. Besides the above, students' views should also be gathered to gauge the effectiveness of assessment instruments used in educational institutions.

CONCLUSION

The use of the Guiding Grid encourages students' learning through engagement and motivation. This leads to knowledge and understanding which support performance and action. Reflection is an important part of the learning process and leads to higher-order thinking. Students who are able to think critically are able to make judgments and apply the knowledge and skills gained. The ability to make judgements leads to commitment to their own actions and thus the formation of personal identities and values of individual students.

The GG also supports "Educative Assessment" (Grant Wiggins, 1998) because it is an assessment instrument that supports assessment for learning. It is flexible for use in assessing various content subjects as well as languages. Targeted skills as learning outcomes are specified in the GG so that students are aware of what is expected of them. Students are also motivated by the use of GG because they can chart their own learning progress based on the rubrics. The rubrics can also be a guide for teachers in planning their teaching. The students'

performance or lack of performance indicates what the focus of teaching should be in each case. This helps teachers plan their teaching to support effective learning. This study further confirms the versatility of the GG as a tool for effective teaching and learning.

ACKNOWLEDGEMENTS

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Political Cartoons in the First Decade of the Millennium

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ABSTRACT

The beginning of the new millennium (the year 2000 to 2010) has witnessed a dramatic increase in the political cartoons' research. By their nature, political cartoons constitute a specific genre of political reporting in that they are pictorial representations which depict political and social issues and events, as well as the parties involved, in an immediate and condensed form. The genre is characterised by humorous depiction of events, exploiting the ability of irony and satire to unravel, ridicule and attack in a playful, witty and artful fashion (Test, 1991). They project a particular point of view (El Refaie, 2009) and enlighten readers on public issues while exposing wrong practices (Akande, 2002). Due to the increasing research on political cartoons, this study reviews previous studies conducted in the area from the beginning of the millennium (2000) to the year 2010 that marks the first decade of the 21st century millennium. It is hoped that the review will highlight how the genre contributes to social and political commentary and to provide an inspiration for further research in political cartoons.

Keywords: Political cartoons, First Decade, Century Millennium, Media, Messages

INTRODUCTION

This decade (provide years) has witnessed a considerable development of research in the area of political cartoons where many researchers have examined these cartoons from various perspectives. Now that the first decade of the century has come to an end, there is a need to review related literature in the area, considering its significant communicative purposes in societies. The

year 2000 marked the beginning of the millennium. During this period, major events of global attention have occurred across the world. These events have tremendous impact on social and political dimension on the lives of peoples and societies today. For instance, the September 11 attack on the USA have triggered war against terrorism as the world's contemporary primordial policy. Obviously, the situation at hand needs important mode of communication that can succinctly deliver messages which summarizes contemporary societal issues that can easily be absorbed and processed by audiences in order to create meaning for them and keep informed about such issues in different contextual backgrounds.

Political cartoons therefore, are a form of media message that harnesses linguistic and nonlinguistic devices used not only as vital instruments of information dissemination reflecting social practices and happenings, but also as a principal means of public access by which the public participates in the societal wider spectrum of debate about a particular event or social phenomenon (Giarelli and Tulman, 2003). Political cartoons have been used to uncover the reality of events in society. Moreover, cartoon messages have been manipulated to set political and social agenda in different societies across the world. To this effect, the review has explored various analytical frameworks which have been employed for examining how cartoons are ingeniously used to convey meanings. These frameworks of analyses include Critical Discourse Analysis, CDA hermeneutic and Semiotic Analysis.

METHODOLOGY

In order to provide a succinct account of related previous research in this review, the method employed therefore, is to explore different variables that previous research have considered in describing the nature and function of political cartoons. In this context, the present study reviews relevant research conducted in the area of political cartoons across the world from the year 2000, which marked the beginning of the new millennium up to the year 2010 respectively, making a period of one decade. Thus, the review was aimed at synthesizing major themes, framework of analyses and overall findings of previous research within the stipulated period. This will provide an easy avenue for assessing the communicative roles of political cartoons as a medium of social practice and also to serve as an inspiration for further research in the area of political cartoons.

ANALYSIS OF POLITICAL CARTOONS

In recent years, there have been considerable studies in literature which focused on the nature and functions of political cartoons. Several studies of political cartoons looked at their capability to effectively communicate social and political messages to mass audiences. These studies have been synthesized and grouped into related variables based on their overall findings:

a.) Many studies focused on communicative functions of political cartoons. This variable posits that the cartoons are used as a vehicle for political communication.

In his study for instance, Streicher (1965 cited by Benoit, W.L, *et al.*, 2001) his findings indicated that visual messages are much more succinct and provide clear summary of an event or issue at hand as such, are given much preference over conventional media news. He claimed that cartoons help audiences to read news and to scan through the meaning of an issue or an event particularly those audiences who give much preference to visual news and those who have little time. He contended that political cartoons capability to comment on social and political issues make them a distinct medium that contributes significantly by facilitating effective communication.

In his study, Walker (2003) examined political cartoons in respect of political communication. He argued that the cartoons are used as a powerful weapon for communicating political issues for the fact that cartoon messages can easily be absorbed by audiences and transmitted in mass circulation. His findings indicated that political cartoons are of social importance because they are used in setting social agenda and provide satirical commentary aimed at transforming social and political norms of society.

In his research note on political cartoons, Minix (2004) explored the nature and conventions of political cartoon art. He also expounded cartoonists' talents and creativity in portraying issues of public interest in their depictions which exploit a wide range of visual rhetorics such as humor, blending and exaggeration to communicate social issues in society. His findings indicated that visual rhetoric serve as a persuasive device that cartoonists use to convey messages.

In another study, Duus (2001) explored Japanese cartoons depictions where he examined the historical development of political cartoons in Japan. His findings indicated that political cartoons were used in Japanese media in a form of political critique. He added that political cartoons were used as a vehicle for expressing political opinion. This development came as a result of the emergence of an elite opposition to the government.

Generally, as a distinct media genre, political cartoons appeal to the minds of audience and at the same time challenge their communicative and interpretive competence. In this regard, El Refaie (2009) carried out a study on how readers interpret political cartoons. The result of the pilot study indicated that in the case of political cartoons, interpretation lie- solely on many different kinds of literacy including a familiarity with cartoon conventions and a broad knowledge of current affairs and the ability to draw conclusions or analogies. Therefore, the author challenges those who are of the opinion that cartoons are simple and easy to read. His findings suggest that even the highly educated audiences who are to some extent more informed about political issues need to put into play a whole range of literacies such as good analogies of idioms and metaphors as well as other linguistic skills in order to grasp fully the meanings conveyed in the cartoons. Given

their nature, cartoons depictions are usually satirical; their militant effects are just like that of armory used for launching attacks on the political leaders and the democratic process through pictorial depictions (Morris, 1992).

b.) Construction of ideologies, social and political identities: Various studies have looked into this variable. Based on this variable, cartoons can also be explored to constitute identity of a particular group of people. For instance, Medubi (2003) examined language and ideology in Nigerian political cartoons, where he applied metaphor theory known as the conceptual integration theory in the analysis of the cartoons in the Nigerian social and political context. His findings indicated that the interplay between images and words cues in the cartoons that portray group ideologies. These group ideologies are given much priority over national interest and projected Nigeria as a nation without a clearly defined ideology as a result of colonially inherited problem which is the conglomeration of many ethnic groups of culturally diverse origin.

In another study, Najjar (2007) conducted an exploratory study of the most popular Palestinian cartoonist, Naji al-Ali. The author contends that cartoons are essential sites for the construction of people's identity, which he refers to the "identity of the self and others" (p. 256). He used a combined approach extracted from various analytical perspectives such as cognition,

social psychology, anthropology and the cartoon code. However, the researcher did not provide adequate explanation of the code as an important semiotic concept; and this hinders proper understanding of the cartoons' messages. The term code as Fiske (1982) defines it, simply refers to "a system of meaning common to members of a culture" (p. 20). The code comprises both the sign and the convention for interpreting that sign. Nevertheless, the study demonstrates the influence of the cartoon as a medium of political expression in the Arab world. In fact, the study claims that cartoons offer a unique form of social and political commentary specifically to the cartoonist and his society in general. Thus, the claim is constructive for the fact that the cartoon samples in the study vividly portray self-identity by easily depicting identifiable features of Palestinian refugees such as clothing styles, related artifacts, shape and size of body (physique) as well as mode of behavior and body images which are so revelatory in representing Palestinian people and their culture.

c.) The Influence of Political cartoons on public opinions: Political cartoons can be a powerful weapon in influencing public opinion pertaining to issues of public interest such as audiences' views on candidates especially during campaign and voting period. This variable indicates the persuasive power of the cartoons, because the point they are making can be quickly transmitted and absorbed by the audience. On this account, Conners (2005) explored

political cartoons and the popular culture in the 2004 American presidential campaigns. He claims that political cartoons are used as tools for manipulating voters' opinion on the candidates captured in a single cartoon message during the campaign period. This demonstrates that political cartoons are unique forms of media messages that have strong impact on the audience in terms of public opinion making. Furthermore, the in-depth analysis of cartoons in the study has really demonstrated that political cartoon can be harnessed and monopolized through its specific messages to form formidable and elaborate campaign machinery in a period of elections.

Considering their influence on public opinion, Hogan (2001) examined political cynicism in political cartoons. He observed that there is a lack of balance in visual comment on politics in political cartoons. Cartoons that merely describe politicians and political institutions do not appear in his analysis of the cartoons perhaps due to the fact that they are not humorous and satirical. Although satire is essential, the level at which politicians and politics are negatively depicted will have serious repercussions to democratic societies like political cynicism which will result in high level of abstention from voting and distrust on democratic system and lead audiences to resort to violence, hatred or even civil war.

Political cartoons function as a medium representing the response of a particular group over sensitive issues. For instance,

Townsend *et al*. (2008) explored the nature of political cartoons at a time of major political and social reform specifically on how political, satirical cartoons illustrated Australia's *WorkChoices* debate using cartoon images published in mainstream Australian newspaper. The researchers have employed qualitative methods where cartoon samples were categorized into tone and content categories. Cartoons' content depicted many issues on the newly introduced industrial relation laws in Australia at that time(specify time period). The findings indicated that political cartoons formed significant part of political discourse and a medium through which important debate on industrial reform was presented to Australian workers and the general public (source).

In his recent study, El Refaie (2010) explores young people's responses to political cartoons published in newspapers. He claims that newspaper cartoons are part of multimodal texts because they combine verbal and visual semiotic mode in creating and conveying meaning. The researcher piloted the use of newspaper cartoons as a means for soliciting young people's views concerning the meanings of the cartoons. The findings indicated that the young peoples' opinion can be influenced through the cartoons' messages and interpreting multimodal text is often more complex than comprehending verbal texts.

Frameworks for analyzing Political cartoons: In terms of framework of analysis, different analytical frameworks have been used to examine political cartoons, such as

hermeneutic analysis that has been used by political cartoon researchers to interpret political cartoons. For instance, Diamond (2002) studied cartoons depictions of post-September 11 attack. He used a text-oriented hermeneutic interpretation to examine themes of the cartoons. He found that cartoons are used to reveal a number of frequent themes such as description of events related to 11 September and issues in the aftermath of the attack.

In another study, (Benoit *et al*. (2001) explored and analyzed 2000 political cartoons concerning Clinton-Lewinsky-Starr affair which concentrated on the investigations, impeachment and trial of President Clinton. The analytical framework used for the analysis was a fantasy theme analysis of political cartoons using symbolic convergence theory. Thus, it is a tool for assessing rhetorical discourse with emphasis on the visual message that provides basis for the analysis of imaginative language and imagery usually embedded in the cartoons. The analysis demonstrated that political cartoons are complex visual or symbolic discourses which employ rhetorical devices that require rhetorical analysis in order to make sense of the messages and their impact on the public.

Taking into account the influence of the political cartoons, Seymoure-ure (2001) predicted the future of British political cartoons. He analyzed the depictions of party leaders in the 1997 general election in the UK and categorized the dominant images. Tracing the development of cartoons' traditions in respect of changes in the size and design of newspapers as well as the influence of the political culture and the cartoons ability of conveying the unsayable through its depictions of visual images, the author claimed that political cartoons will continue to flourish in Britain and in her future.

Correspondingly, in recent times, researchers have contemporarily started to employ various approaches in analyzing how political cartoons operate. In society these include semiotics, content and document analysis, rhetorical and narrative analyses. The review has explored studies that were conducted using these analyses Similarly, semiotics seeks to address media texts using repetitive signs for meaning production. Thus, semiotic analysis "focuses on the system of rules governing the implied discourse involved in media texts and stresses on the role of hermeneutic content in shaping meaning" (Wollacott, 1982, pp.93-94).

In her study, El Refaie (2003) incorporated semiotics to investigate the concept of visual metaphor in newspaper cartoons using in Australian newspaper cartoons. He argued that visual metaphors cannot be expressed precisely in formal terms only. Rather, they must be seen as visual representations of metaphorical thoughts or concepts. Taking into consideration the method of analysis, the author has clearly demonstrated that visual metaphors are described in terms of the visual mode particularly in newspaper cartoon. He also suggests that "visual metaphors are best described in terms of

their underlying metaphorical concepts" (El Refaie, 2003, p.75). Thus, cartoons as pictorial representations portray the real-life events through comparison into condensed graphical form that can only be understood and interpreted by the public when they map on the visual depictions contained in the cartoons with the real-life events and this is the cognitive process through which metaphors convey meanings.

Cognitive approach is another framework used by Bergen (2003) where he focused on cognition and culture in the analysis of September 11 political cartoons. He identified cognitive mechanisms as: conceptual blending, conceptual metaphor and cultural models. His findings indicated that cognitive mechanisms play vital roles in reflecting social events by revealing significant similarities in the cartoons through which audiences can easily understand at the moment of such events. Moreover, they appear to interact in political cartoons much easier than they do in language due to visual reifications of these mechanisms. Therefore, cognitive mechanisms make cartoon messages more accessible to audiences through reification of relatively abstract concepts in visible and easily recognizable concrete domains.

In another study, Tsakona (2009) used multimodal theory of humor as an analytical framework to study language and image interaction in cartoons. The author indicated that cartoon humor is a complex process that involves different mechanisms of language interplay between verbal and nonverbal devices such as exaggeration, contradiction

and metaphor. Unlike what others consider, cartoons are not so easy to grasp.. Therefore, people need to pay close attention to both verbal and visual details contained in each cartoon. However, the general theory of verbal humor employed by the researcher is too broad to give an elaborate account of humor based on the visual depictions in the cartoons. Usually, the pleasure in political cartoon as described by Press (1981) is specifically derived from the joy of sticking pins into fools and villains or watching others doing it the humor is so surprising and ridiculous as such, incongruent theory might be more appropriate for the analysis of the cartoon in the study.

In addition, critical discourse analysis (CDA) has also been used for the study of political cartoons. For example, Mazid (2008) examined Bush and bin Laden cartoons using CDA and semiotic-discursive aspects as analytical method. The author demonstrates that cartoons can be used to present ideological differences between opposing parties or societies. He achieved this through depicting two repugnant enemies in person of Bush's administration representing the west, who was portrayed as a devil and at the same time his Western ideologies as equally devilish; bin Laden on the other side represented the Middle-East, who was portrayed as a terrorist and his ideological beliefs were presented as that of the terrorists. Therefore, using CDA provides in a communicative interaction, a framework of analyzing cartoons to express information, ideology and properties capable of effectively conveying implicit

and explicit meaning to the target audience. Political cartoons possess linguistic features which are used for constructing ideologies and social identities reflecting real-life events in the political arena of a society (Chouliaraki and Fairclough, 1999).

From the African perspective, Eko (2007) investigated how African newspapers dehumanized and deterritorialized four African political leaders in the post-cold war era. The author analyzed post-cold war cartoon depictions of power abuse by four typical African leaders. The study is a typical African narrative style which is a kind of mythology characterized by the use of some animals that are given human attributes to represent humans. It is a satirical narration whereby human beings are animalized, in other words, humans are brought out as animals in order to reveal their brutal nature with the aim of satirizing them. Similarly, they are in some instances deterritorialized, in the sense that they are taken out of their natural domains or environments symbolically for the purpose of denouncing their extra-authoritarian leadership (Eko, 2007). To this effect, the author used animalization and deterritorialization as counter-discourses to project the concept of authoritarianism as animalistic and self-destructive. He incorporated the analytical framework of Foucault's concept of governmentality which is a construct that refers to the relationship between the government and the governed characterized by abuse of power on the part of the government and attempts by the governed to reduce or overcome that

abuse (Foucault, 1994c, p.785; Monga, 1996, p.56). Even though the researcher explored how some African leaders were dehumanized in some African newspapers, his concept of governmentality did not adequately address the written captions of the cartoons that formed one of the central questions which led to his research.

In another study, Udoakah (2006) used Uses and Gratifications Theory as theoretical framework to examine the political cartoon readership in the Nigerian context. He verified the claim made by editors and cartoonist in Nigeria that cartoons are alternative forms of communication meant for the lowly educated and illiterate. Interestingly, the findings indicated that the readership was made up of elites or educated and politically conscious class contrary to the commonly held view that cartoons are largely meant for the illiterates and low educated class. He demonstrated that apart from literacy, many things are required from the audience members to understand political cartoons. He was of the contention that for better comprehension and interpretation of cartoons, one needs to have a sense of humor, knowledge on current political issues and historical background of the society. However the researcher did not provide clear theoretical explanation of his framework of uses and gratification theory, which is a theory attempts to explain the uses and functions of media and how readers actively look for specific media to satisfy specific needs. This is the major weakness of the study given the fact that his claims were based on the theoretical assumptions.

DISCUSSION

To this effect, in the studies reviewed, different analyses for studying political cartoons have been explored. These include content analysis which is used for evaluating numerically dominant tendencies in political cartoons. Fantasy Theme Analysis is another analytical framework used for assessing rhetorical discourse. Moreover, humor which is an essential human attribute has been used as framework of analysis in form of multimodal theory. In addition, Critical Discourse Analysis (CDA) and semiotic-discursive approach has been used as frameworks of analysis. For instance, Mazid (2008) used this analysis analytical framework to examine Bush and bin Laden cartoons. Eko, (2007) incorporated Foucault's concept of governmentality to analyze political cartoons depictions of African leaders. Given a few studies in literature on political cartoons, Taking into consideration the Nigerian context, there is a need for more research paucity of research in the area of political cartoons. However, Udoakah (2006) employed Uses and Gratification theories as a theoretical framework to investigate the political cartoons readership in Nigeria.

In terms of analytical framework used in the analysis of political cartoons, semiotic analysis is so pertinent in providing an in-depth interpretation of cartoons. Semiotics was used to analyze the cartoon text which is regarded as a sign. Semioticians study signs as part of semiotic sign systems such as medium or genre. The main concern of semiotics in this context is meaning-making and representation specifically in the form of texts and media (Chandler 2002). A text in this context refers to the assemblage of signs such as words, images and sounds created and interpreted with reference to the conventions associated with a genre and in a specific medium of communication. For semioticians, a text can exist in any medium and can be verbal, nonverbal, or both. Political cartoons are media texts that contain both verbal and non-verbal devices.

In summary, the review highlights several studies which have been conducted in political cartoons focusing on different variables. Some studies focused on the nature and functions of political cartoons, while others looked into the visual projections and how issues are encapsulated in cartoons. Similarly, communicative functions of political cartoons have been explored such as their ability to satirize and ridicule political figures and their bad policies. Finally, the review is aimed at establishing a niche as well as inspiration for further research in political cartoon literature.

CONCLUSION

This review provides an overview of various studies conducted on political cartoons. In fact, from the examined previous research, it becomes evident that political cartoons rely heavily on the interplay between images and words specific language use especially satire as a tool to communicate social and political messages. Thus, through creative combination of images and words, satire, political cartoons have the potentials of entertaining and informing the public on

current issues. The cartoons can also be used to criticize vice and folly as a way of transforming society and its polity. As such, they are used as agents of social and political reforms in society. In addition, political cartoons serve as the mirror of society reflecting its social happenings and practices. Considering their increase use in media, political cartoons constitute a vital social discourse that mediates media and society thereby contributing to political communication, social debate and commentary. Despite the fact that political cartoons rely on satire as a linguistic weapon to critique politicians and authorities and communicate effectively, the reality of issues and events, existing studies have not yet explored how satire is used; neither does it examine linguistic and nonlinguistic devices employed for creating and conveying satire in political cartoons. It could be argued from the review that political cartoons play a vital communicative role through which the general public is informed, and reoriented on contemporary social issues affecting the society. Thus, this study responds to the call for further studies by political cartoons academics who have suggested that research about political cartoons has been overlooked for far too long (Walker, 2003; El Refaie 2003; Udoakah 2006). Further research should focus on the role of satire in satirical representation of social and political issues in political cartoons using multiple analytical frameworks. for analyzing political cartoons because it has been identified that previous studies have mainly focused on one analytical framework.

Considering the polysemous nature of political cartoons, one analytical framework is not adequately enough to provide exhaustive analysis and interpretation of messages depicted in the cartoons. Therefore, considering the identified gap in political cartoon literature; this review has the potential to provide an inspiration for further research which might bring theoretical and analytical understanding of political cartoon genre which has become a vital medium of communication in diverse social and political contexts.

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Diversifying the Input and the Outcome: A Case Study

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ABSTRACT

Creating an enjoyable classroom session is considered an essential goal of teaching (Dornyei, 2001) as this can help to enhance learning outcome (Hamilton 2010; Klein, Noe & Wang 2006; Oxford & Shearing 1994). This article reflects a case study in which attempts were made to turn the classroom into not only a delightful place for language learning, but also a stage for personal enjoyment and performance for college students. The diversity in the input and outcome was achieved via the use of various materials as warmers and different types of assessment activities. Observation showed that our students truly enjoyed these activities and they manifested improved creativity, confidence and language skills development. Implications and suggestions for other class contexts were also discussed.

Keywords: Motivation, teaching materials, learning autonomy, assessment

INTRODUCTION

It has been widely believed that creating a relaxing atmosphere for the learners is an important task for the teachers (Dornyei 2001; Lewis & Hills 1985; Mitcham 2009; Tudor 2009; Umstatter 2002) because such an environment can enhance the learning outcome (Hamilton 2010; Klein, Noe & Wang 2006; Oxford & Shearing 1994).

With an aim to create a diversity of input and outcome for the students' learning and to turn their classrooms into a place not only for textbooks and exams but also for fun activities, this article reports on a case study where the introduction of authentic materials as warmers and various activities for assessment can serve these purposes in our context.

CONTEXT

The case study was conducted with 80 final-year English-major students from two classes in a three-year college in Vietnam. While 30 students were trained to become school teachers of English, the other 50 students were trained to work for the tourist industry in the local

province. The case study lasted for an academic year and it involved four courses of British Life, American Life, Cross-cultural Communication and American Literature, with each course consisting of 15 lessons of 150 minutes each. Most of the students came from the rural areas and they experienced considerable pressure from their job prospects, families or studies, which made learning a burden to many of them. In this context, it was considered useful for the teacher to create a relaxing classroom environment to encourage the students in their learning.

MATERIALS AND METHODS

While language games are often used to motivate learners, especially younger ones (Casanave 2002; Wright, Betteridge & Buckby 2006), many of these games were not suitable to the interests and maturity of our college students. Therefore, authentic materials, namely songs, films, pictures, stories and poems were adopted for this purpose instead. These materials can provide not only lots of fun for the class (Baurain 2000; Moon 2010; Tissington & LaCour 2010; Tran 2003; Tudor 2009) but also useful input to students in language learning. For example, songs can improve students' pronunciation (Luu & Pham 2010; Salcedo 2010), films can help them to learn about cultural content (Qiang, Teng & Wolff 2007) and pictures can facilitate their imagination (Wong 2004). Likewise, stories and poems can provide them with social and cultural values (Ho 2002; Hall 2003; Miccoli 2003), promote their language

(Elgar 2001; Tissington & LaCour 2010), and improve their emotional development as well as thinking skills (Ghosn 2002).

In our context, warmers were understood as short activities which lasted from 5 to 15 minutes at the beginning of each class to create a delightful atmosphere for the students. For this purpose, motivation was the main criteria in selecting materials while accompanying activities were designed to explore the content of the materials to develop students' general knowledge and language improvement. Thus, these warmers were not necessarily linked to the content of the lesson that followed and in this way, the knowledge that students learned from these warmers was more varied and not confined to the lesson prescribed by the syllabus.

Songs and pictures

In our context, popular English songs were used to provide students with some enjoyment and they served as a starting point to generate some discussion. For example, after listening to a song, students were asked to talk about the songwriter, the singer, or their taste in music and their favorite singers. This kind of information was prepared by the teacher in the form of questions for a quiz that students were expected to answer. Competitions among groups made this kind of activities even more interesting to the class. Songs which were unfamiliar to the students were employed as listening texts with language tasks like gap fill, matching or questions and answers. The songs we used included popular songs available on YouTube and video clips from Britain Got

Talent and American Got Talent which were well liked by our students.

A wide range of pictures/photos about different topics including nature, animals, people, places of interest, countries and cultures were used for quizzes, discussion or further information. For example, after watching a set of pictures about a cave newly discovered in the country, students worked in teams to answer questions on this cave. Pictures about famous places in the world or various kinds of animals were also shown and students were asked to tell what they they know about these places or animals and the teacher later gave them basic information about what they saw in the form of a quiz. Students were sometimes asked to watch photos about different people and create a profile of a character based on a photo and answer questions about this character's life, as suggested by Wong (2004).

Films and video clips

Short films or video clips on YouTube which varied from Oscar award-winning animated short films like Oktapodi (2007), Lavatory love story (2009) to inspiring advertisements were often chosen for students to watch and these films/clips served as cues for conversations between pairs about what they liked or disliked about the clips. Selected parts of longer films about different countries were also shown, for example the Iranian "Children in Heaven" or Indian's "Darling". The language in these films was relevant to the students' levels so that it did not hinder the students'

comprehension. Activities such as dubbing, acting, role-playing (Qiang, Teng &Wolff 2007) were not used due to time allocation but students were asked to provide the words for silent videos like Mr. Bean series and Charlie Chaplin film clips.

Poetry and short stories

For our warmers, none of the literature with linguistic or content challenges to our students was chosen. Instead, poems which were readily understood and appreciated by our students, such as those from Life in Words and Words in Life (edited by Maley, Mukundan & Rai 2009) or Asian Poems for Young Readers (edited by Maley & Mukundan 2009) and selected haikus were introduced. For example, after reading the poem "Can You Let Me Pass the Exam, Please?" (Appendix A), students were asked to work in pairs to talk about the backgrounds of those learners and to identify the most or least acceptable excuse(s) in the poem. They were also required to role play selected scenarios from the poem or to create new excuses, making use of gestures, facial expressions and voice effects to increase efficiency of the excuses given. In these warmers, language activities developed from the poems varied from simple comprehension or interpretation questions to creative writing. One useful activity was to ask students to recite the poems in two different ways to show different moods or different personality.

Short stories were another source of materials that were used to enrich the students' feelings, living experiences

and literary appreciation. In the form of PowerPoint slides, illustrated with music and pictures, the stories chosen often highlighted human values, such as love, friendship, sacrifice, gratitude, patience and optimism which students could relate to their own experiences. Students were often asked to talk about their favourite character in the story, to share their impressions or raise any questions that they might have about the story.

ASSESSMENT

In addition to the written exams which made up half of the total course score as required by the college, another half of the score came from other tasks, such as presentations, quizzes, storytelling, portfolios and minidramas which had been used effectively in a similar context (Le 2001).

Presentations

For courses such as "American Life" and "British Life", students worked in groups of three or four to give a presentation on a topic of their choice about the USA or the UK. The topics students chosen included Oscar awards, Disneyland in the USA, the Boeing company, places of interest in London, popular British music bands and famous castles in the UK, etc. The teacher was also available for guidance during the preparation stage so that students could give informative and interesting PowerPoint presentations. Criteria about content structure, language use, voice, body language and visual aids

(Bishop & Kimball 2009) as well as timing were specified to the students in advance.

Story telling

As our students were trained to become teachers or tour guides, storytelling was considered a highly useful skill for them. Therefore, it was chosen to form part of the assessment of the American literature course. In pairs, students talked about a film or a story of their choice which varied from such famous films as Gone with the Wind, King's Speech or Frankenstein to great stories like After Twenty Years (O' Henry), A White Heron (Orne Jewett), Mrs. Bixby and the Colonel's Coat (Roald Dahl) and Snow Goose (Paul Gallico). To help students with their storytelling skills, sample videos on effective story telling on YouTube were also shown and analysed. Apart from clear language, other requirements regarding the use of voice, illustrated pictures and music were emphasized and assessed in their performance.

Minidramas

As a group activity, mini-dramas were used in the literature and cross-cultural communication course where students were asked to produce part of a story they had read or a scenario they had experienced. While the students were expected to write their own scripts and directtheir own mini-dramas, the teacher offered to help with script editing or giving guidance on staging. Stories students chose to perform for the literature course included The Magic

Barrel (Bernard Mullamud), Soapy and The Cop (O'Henry), Story of an Hour (Kate Chopin) while mini-dramas for the cross-cultural communication course were built on critical incidents that students had read or experienced.

Quizzes

Quizzes were another form of assessment which the students were allowed to choose in place of a presentation on a topic for the course on American or British Life. These quizzes were required to encompass information that the students had learnt during the course and students were asked to add excitement to their quizzes with pictures, sound effects, as well as small awards for correct answers.

Portfolios

As a good way to enhance learners' autonomy, portfolios (i.e. Le 2004; Zhenhui 2005) were used as an assessment activity where our students were asked to produce a collection of useful materials for their future jobs either as teachers or tour guides. Students worked in pairs to collect materials on some topics of their choice about the UK/US and inter-cultural interaction. With the guidance and feedback from the teacher, students learnt to select and arrange the materials to professional "products" which they could use as reference materials for their future job prospects. . However, in the literature course, students' portfolios comprised individual work which consisted of poems that they liked or had written and summaries of the stories that they read as a form of extensive reading for the course.

NON-ASSESSMENT TASKS

Poetry writing

As a way to develop students' abilities to the maximum, students were encouraged to write poems. Since these students had never written poems in English language before, they were advised to imitate the forms of the poems introduced in the warmers to relate to their own experiences. For example, students were asked to use the form of the poem "Can You Let Us Pass the Exams, Please?" to write about students' excuses. Another example in the Appendix was the poem Blue (Saito 2008) which inspired the students to write about their own perceptions of different colors. Nearly all students wrote their own versions and the teacher organized a session for the students to share their poems with their class.

English performances

Like poetry writing, music performances were a voluntary activity. These classes were encouraged to give English musical performances and were encouraged to organize celebrations like New Year, Christmas, or Halloween with activities such as singing, dancing and dramatization.

DISCUSSION

The warmers and the assessment in our context seemed to have resulted in a desirable outcome for the class. The first change was a very relaxing atmosphere

observed in the classroom, with the warmers helping to break away the monotony of the lessons. The impact of this change was witnessed in students' positive attitude towards learning by going to class earlier than expected, eagerly waiting to watch a film/video clip, to read a story, or to listen to a song. These students even asked for these activities during the break time. In addition, videos like Mr. Bean and Charlie Chaplin's series created wholehearted laughter while award-winning films were often useful in developing the students' critical thinking skills. The variety of materials helped the teacher to introduce various kinds of knowledge and skills to the students which ranged from social knowledge about films, music to cultural knowledge about countries, to language and academic skills, such as presentation, research, and computer skills.

The pleasant and supportive atmosphere is believed to increase students' voluntary participation in class activities (Goll, 2002). In our case, students' increased involvement was manifested not only during the warmers, but also during the lessons that followed, and in their assessment.

For example, the students' presentations and quizzes included a wide range of illustrations with pictures, stories, video clips, and music, which suggested some influence that they gained from the materials shown for the warmers in the class. In addition, their storytelling and acting performances showed remarkable creativity in writing scripts, selecting and developing scenes, and preparing props. Likewise, their

poems, irrespective of the quality, were well received by their peers, which increased the students' self esteem, especially with less proficient students who never thought that they could write poems in English.

In summary, the introduction of the warmers and various assessment activities seemed to play a big role in transforming the classroom from a serious place for lessons and exams into an inspiring environment where students enjoyed their learning. In addition, the input was not only restricted to the lessons and the outcome was not only seen in formal tests and examinations. Though the whole working process was an excitement for the teacher who witnessed positive change in the classroom, it was still a challenge for the teacher to be in constant search for interesting materials for the warmers. In addition, the diverse assessment tasks required the teacher of additional time to assist the students in their tasks.

CONCLUSION AND RECOMMENDATIONS

In conclusion, teaching ESL is not simply teaching a school subject (Stockton, 2001), but it also aims to equip learners with practical knowledge and skills beyond their classroom to prepare them for lifelong learning.

Despite our observation and findings obtained in this case study, the adoption of these activities in other contexts may need further experiment in other contexts. In this process, adaptation of activities can be necessary to suit the students' abilities, needs and interests, as well as requirements

about time, assessment and facilities of each institution. To ensure higher rate of success, it is highly recommended for the teacher to collect a bank of inspiring materials for the warmers. Newspapers and television programs can be a rich source of materials that can add updated information to the students' knowledge and create awareness and involvement in current issues in the society and the world. Another recommendation is to ask the learners to conduct warmers for their class as this can reduce the workload for the teacher and increase the students' responsibility and autonomy. In addition, assessed tasks should also be designed to meet the needs' and abilities of the students to avoid unnecessary pressure on them. Since assessment is generally considered important to the students, students should be involved in the discussion about the form of assessment adopted, and that their opinions need adequate consideration.

As William Butler Yeats (1865-1939) once said, "Education is not filling a bucket, but lighting a fire". Thus, these activities deserve a trial in other contexts to create a new and effective atmosphere in class and make a useful difference to our teaching and learning of English language in an ESL context

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APPENDIX

Sample poems

Can you let me pass the exam please?

Tan Bee Tin

Dear Teacher
I'm stressed
Because English is not my mother tongue
And I live in a foreign country
And my cat died the day before my exam.
Can you let me pass the exam please?
I failed your exam
Because my pen broke down.
Just when I knew what to write
And the invigilator said, "Time".
Can you let me pass the exam please?
I missed your exam
Because my relatives arrived in town
And I had to show them around
And I forgot that we had the exam.
Can you let me pass the exam please?
I was sick
Because my mother was sick
And my stomach also got sick
Because of food we ate last night.
Can you let me pass the exam please?
I was depressed
Because my son failed his exam
And my wife ran away with another guy
And my boss gave me too much work.
Can you let me pass the exam please?
I did badly
Because the library barred me from
Borrowing books due to unpaid fines.
And the light went out just as I decided to
    study.

Can you let me pass the exam please?
Can you let us pass the exam please?
Because we already failed your exam twice
And we know you can pass us
On "Confessionate" grounds as we confess.
Can we all pass the exam please?

Source
Maley, A., Mukundan, J., & Rai, V. (Eds). 2009.
    Life in Words and Words in Life (pp. 16-17).
Bagbazar, Kathmandu. Bhundipuran Prakashan.

Blue

Blue the sky
where the doves fly.
Blue the sea
where the fish swim.
Blue your eyes
where I lose myself.
Blue the moon
that comes every night.
Blue the flower
that I give you.
when I think about you.
Blue the flag
from my country.
Blue the crayon
I wrote your name with
on my heart.

Source
(Saito, A. P., 2008. Between me and the world:
    Teaching poetry to English language learners.
    Teaching Artist Journal, 6(3), 197-208.

The U.S. Geopolitical Code and the Role of the Persian Gulf Oil in the U.S. Military Intervention in 2003

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ABSTRACT

This paper seeks to explore the motives of the U.S. military presence in the Persian Gulf region vis-a-vis the energy resources of the region. Studying geopolitical codes helps reveal the intentions behind a state's foreign policy through defining national interests, threats, actions and justification. Examining the U.S. code suggests the importance of oil as a vital strategic interest for the country. It defines the preservation of the U.S. hegemonic position as an ultimate goal for its presence in the Persian Gulf. In this respect, the threat of Saddam Hussein's Iraqi government to three vast fields of energy reservoirs in the Persian Gulf made it necessary to affect regime change so as to protect the free flow of oil to the West and this was done through the control and preservation of the U.S. hegemonic position.

Keywords: U.S. geopolitical code, Persian Gulf's energy resources, the Bush Administration, pre-emptive war, U.S. hegemonic position

INTRODUCTION

The Persian Gulf region has always been considered a strategic area among powerful countries since the earlier centuries because of its geostrategic location and especially its energy resources. It became particularly important during the First World War when

Britain shifted the fuel source of its Royal Navy ships from coal to oil (Yergin, 2006). This region has also been significant to the United States of America since before the Second World War, and especially so after Britain's withdrawal from the region in 1971 when the U.S. military presence in the region was reinforced. This was evident in the U.S. leader's statements, in particular after the Oil Crisis in 1973, which explicitly signify the importance of this region to America's vital interests. In the country's military response against any aggression in this area, the following except asserts one

of the most notable statements made by President Carter in 1980;

> *"Let our position be absolutely clear: An attempt by any outside force to gain control of the Persian Gulf region will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force."*

Basically, due to its position as America's vital interest, this area became the prominent geopolitical assumption during the Cold War era and had been linked to the U.S. geopolitical code, which was generally referred to as the Containment Policy. It therefore played an important role as a major factor in the U.S., who pursued different policies against the Soviet Union expansionism. It was directly related to the existence of vast amounts of oil and gas in this area, and of the dependence of the U.S. and its allies on these resources. According to Levy (1980), the Persian Gulf supplied over 30 per cent of America's oil imports, 60 per cent of Western Europe's needs and more than 70 per cent of Japan's demands. In this respect, the main defined threat was Soviet expansionism towards the West's geostrategic realm and its interests. To prevent a growing Soviet influence in this area and to protect America's vital interests, especially in the free flow of oil to the West, different policies, such as the 'Twin Pillars', were projected towards the

Persian Gulf. More interestingly, concurrent with the end of the Cold War era and the collapse of the Soviet Union, the United States increasingly attempted to redefine its geopolitical code and keep its high position in the new geopolitical order. The military attack against Iraq was carried out by an international coalition led by the United States in 1991. Bush Senior (1991) had explicitly referred to protecting oil fields in the Persian Gulf as one of the war objectives. The U.S. decision makers continued to pay to this area until the outbreak of the September 11 attacks against the U.S. symbols, which consequently caused a change in America's geopolitical code and ultimately encouraged the U.S. government to fire up a pre-emptive war against Iraq in 2003.

LITERATURE REVIEW

The review of related literature shows that growing industrialization and consequently increasing demands cause the necessity to control raw materials across the world. These needs and dependence of great powers such as the United States on oil and the large reservoir of oil in the Persian Gulf area were the main reasons for tensions, conflicts and competitions. From this view, after the Cold War, securing access to oil as a vital resource had become a major theme in the U.S. security planning and this justified the use of force (Clark, 2004; Klare, 2001; Le Billon, 2004; Peters, 2004; Singh, 2007).

After the Cold War, with increasing demands for oil and replacing economic rivalries instead of ideological competitions,

great powers such as Russia, the European powers, China, Japan and even India came to the region to compete with the United States to access oil reservoirs. In this respect, the stability of supplies became the main concern among the world powers (Amirahmadi, 1996; Klare, 2001; Sen & Babali, 2007). For this reason, the control of oil was considered as "the centre of gravity of U.S. economic hegemony" (Bromley, 2006), where the U.S. presence in the Persian Gulf was interpreted as gaining effective rule over the global economy for the next 50 years, which would be achieved by controlling "the global oil spigot" (Harvey, 2003, p. 24).

With reference to the Iraq Wars, however, some believe that the second Iraq War in 2003 was a continuation of the first Iraq War in 1991 (Krauthammer, 2005). Another view, on the other hand, sees the Iraq War as a normal extension of the Carter Doctrine, which posited the vital importance of the Persian Gulf to America (Klare, 2006). There is also a notion that Saddam Hussain was a serious threat to the U.S. friendly states as well as to the continued flow of large amounts of the world's oil (Klare, 2004b). In addition, this notion also asserts that "no real improvement in either the security environment or regional production levels would be possible so long as Saddam remained in power" (Klare, 2004a, p. 94). Conversely, Clark (2004) views the United States military operation against Iraq in relation to petrodollar recycling, whereas Russell (2005) relates it to the stability of oil price. Meanwhile, other scholars such

as (Renner, 2003; Singh, 2007) refer to the military operation as the reduction of OPEC and Saudi Arabia dominance over the international oil market.

Another view refers to the oil reserves as an important element in the U.S. grand strategy, which believes that Iraq's oil reservoir was even bigger than Saudi's. Thus, , Iraq became a significant objective for Cheney and Bush (Iseri, 2009). This view emphasizes Iraq's oil as the main reason for the U.S.'s attack on Iraq and it compares Iraq with North Korea, in the sense that both had been suspected of proliferating weapons of mass destruction, but only Iraq was selected for pre-emptive action (Le Billon, 2004). In this respect, Mercille (2010) stresses that "the main reason for intervention is control over world supply and not American consumption" and the United States "will seek to control the region containing two-thirds of energy resources in order to exert leverage over industrial rivals and regulate the smooth functioning of the world economy" (Mercille, 2010, p.6).

Hence, this paper analyses the U.S. geopolitical code and attempts to explore the motives of the U.S. military presence in this region in relation to the Persian Gulf oil. In addition, this study also attempts to answer this question, "How did the United States geopolitical code justify the role of the Persian Gulf oil in the U.S. military intervention in 2003 after the September 11 attacks?" Therefore, to obtain the answer, the U.S. geopolitical code will be examined and analyzed. In fact, what could distinguish this study from other similar works, is the

use of the United States geopolitical code to explain the relationship between the Persian Gulf energy reserves and the U.S. military presence in this area.

THEORETICAL FRAMEWORK

This study perceives that the great world powers are always looking for opportunities to obtain more power for more security purposes . Needless to say, from an offensive realist theoretical perspective, this study also assumes that due to natural tendency, great powers always attempt to maximize their supremacy and gain a hegemonic position in international order, which has been determined as the ultimate objective of a conquest. In this respect and under the banner of offensive realism, John Mearsheimer has been a well-known participant who offers his theory in his work titled, 'The Tragedy of Great Power Politics' (Elman, 2004; Iseri, 2009; Snyder, 2002). The theory clearly provides persuasive answers to the aggressive strategies of great powers so that such strategies are considered as "a rational answer to life in the international system" (Toft, 2005, p. 381).

This theoretical approach, basically, relies on five main assumptions. First, it is assumed that the international system is anarchic and there is no dominant central power to carry out rules effectively and discipline perpetrators. It does not mean that the system is chaotic, but the international system includes independent states, and thus, none of them has any central authority above them. In this respect, "sovereignty, in other worlds, inheres in states because

there is no higher ruling in the international system. There is no government over government" (Mearsheimer, 2001, p. 30). Second, the assumption stresses that great powers have always possessed some offensive military capacities which enables them to hurt or destroy each other. From this point of view, countries are dangerous to each other, and thus, those states which have stronger military power are more dangerous than others. Third, the assumption states that no country can ever be sure about the other countries' intentions. Indeed, "no state can be sure that another state will not use its offensive military capability to attack the first state."(source ?) Nevertheless, it does not mean that every state has hostile intentions, "but it is impossible to be sure of that judgment because intentions are impossible to divine with 100 percent certainty." In fact, there are many causes for aggression, and every state can be motivated by one of them to attack the other state. What is important here is that, "intentions can change quickly," and from this viewpoint, one friendly state today can be turn to be hostile tomorrow. Therefore, "states can never be sure that other states do not have offensive intentions to go along with their offensive capabilities"(Mearsheimer, 2001, p. 31).

The fourth assumption emphasizes that survival is sought by all states. It is, specifically, "the primary goal of great powers." Indeed, maintaining territorial integrity together and preserving autonomy of domestic political order are significant goals sought by any states. As indicated by

Mearsheimer "Survival dominates other motives because, once a state is conquered, it is unlikely to be in a position to pursue other aims." (Mearsheimer, 2001) For this reason, security is the most important goal which is pursued by any states. Finally, the fifth assumption posits that great powers in this theory are regarded as rational entities that are conscious of their external environment. Mearsheimer (2001) reinstates this point by the following statement where he mentions, "They think strategically about how to survive in it." Such states are able to evaluate other states' behaviors through considering their preferences and influence of their own behavior over the behavior of other states. They also consider the influence of other states' behavior on "their own strategy for survival" (Mearsheimer, 2001, p. 31).

More importantly, and more related to this paper, Mearsheimer's offensive realism theory claims that states in the international system are seeking their survival guarantee in confront of other states as potential threats. In this view, states are not able to rely on other states for their own security, and as noted by Mearsheimer (2001), "in international politics, God helps those who help themselves" (p. 33). In this respect, states make a special attempt to increase their share of power in the world. This tendency to maximize their power continues through looking for opportunities to attain more power, and they only quit the pursuit for power once a hegemony position is achieved. Therefore, according to this theory, the best way for great powers

to ensure their security "is to achieve hegemony now," and thus, any possibility to form a challenge by any other great powers should be eliminated (Mearsheimer, 2001, p. 35). "A hegemon is a state that is so powerful that it dominates all the other states in the system. No other state has the military wherewithal to put up a serious fight against it. In essence, a hegemon is the only great power in the system." From this perspective, there are conceptually "global hegemons, which dominate the world, and regional hegemons, which dominate distinct geographical areas" (Mearsheimer, 2001, p. 40).

This position offered by the offensive realism theory could be linked to the view that, with the end of the Cold War, the United States, as the sole superpower as well as the most powerful state, has always attempted to preserve and promote its hegemonic position in the new geopolitical world order. This attempt, particularly after the September 11 attacks, led to militaristic behavior compatible with offensive realist reasoning that appeared in the Afghanistan and Iraq wars. Obviously, these geopolitical practices and aggressive behavior were the results of redefining the U.S. geopolitical code known as the so-called 'War on Terrorism' (Flint, 2006).

This work relies on examining the United States geopolitical code because the foreign policy of every state is the output of those geopolitical assumptions that are behind its geopolitical code (Flint & Taylor, 2007). Such a code, indeed, "will have to incorporate a definition of a state's interests,

an identification of external threats to those interests, a planned response to such threats and a justification for that response" (Taylor & Flint, 2000, p. 62). Therefore, analyzing the United States geopolitical code for a specific period of time helps understand America's interests in the Persian Gulf region, the threats to these interests, and the military intervention as a response to those threats. With reference to the offensive realist approach, it obviously indicates that all attempts and practices of the United States as a great power, such as the Iraq War, are interpretable in order to respond to a threat and prevent the emergence of a regional hegemonic power as well as the continuation of its presence in that region to preserve and promote its hegemonic position in the post-Cold War era.

MATERIALS AND METHODS

On the whole, it has been emphasized that qualitative research is researcher centric. In this approach, the researcher determines the importance, value and originality of the materials. The researcher also decides on the documents and selects a sample of text for the analysis (Burnham, Lutz, Grand, & Layton-Henry, 2008). In this work, the content analysis is used due to the nature of research and its related information. Content analysis has also been introduced as an appropriate method to study Political Science and its branches of this discipline (Babbie, 2007). This method takes place every time somebody reads or listens, summarizes and then interprets a content of body (Burnham *et al.*, 2008, p. 259). To

analyze related data, this work applies a form of qualitative content analysis, which can be used to analyze documents of a qualitative study (Merriam,1989). It is important to note that, although documents are generally used as supplemental information, there is a view that states, "qualitative researchers are turning to documents as their primary sources of data" (Bogdan & Biklen, 1998, p. 57). The usage of documentary material has been regarded in part similar to interviews or observations. From this view, there are various voices that have surrounded a researcher in the library, and these voices are represented as books, articles and so on (Merriam, 1989).

Public or archival documents have been used for analyzing the data in this work, which are adopted from official sources of the United States such as the White House web site. The documents deal with written evidence termed as 'published evidence' (Gillham, 2000). Here, the recorded official speeches of the U.S. president, George W. Bush, and some of his cabinet members in his first term, such as the Vice President (name), Secretary of State (name) , and Secretary of Defense (name) , were used as the main data for the analysis. The speeches also comprise some official reports which are related to the period between 2001 and 2004. These documents include the National Energy Policy (NEP) report that indicates the United States strategy about energy, and National Security Strategy (NSS) that presents the annual exercise which updates the U.S. geopolitical code (Flint,(2006). These types of documents are categorized as

primary sources in this study (Ary, Jacobs, Razavieh, & Sorensen, 2006). Besides, secondary data are also included in the research data. Therefore, the presidential speeches and other official documents prepared by or under the supervision of the President are regarded as primary resources. These documents form the the main foundation of data in this paper.

With regard to the collection of speeches as the main documents for this study, it should be noted that the geopolitical codes of a state are strongly linked to presidential speeches. These speeches reflect those beliefs and geopolitical assumptions that construct the foundation of geopolitical codes. These assumptions, in fact, define national interests, threats and responses, as well as adequate justifications of the state. The foreign policy also relies on these geopolitical assumptions, and thus, they are seen as a close relation between the President and the events. In the United States, however, this relation is more notable because the President is the 'Commander in Chief'. Internationally, the President is a subject who has a particular world view and agenda. The President interprets events and characterizes them for specific political goals (Flint, Adduci, Chen, & Chi, 2009). This paper also focuses on the State of the Union address, which is "an annual act of political theatre that demands the President claim that the U.S. is 'strong' or 'healthy'." It is a geopolitical act that "places the President at the center of the foreign policy agenda". Apparently, this type of speech represents a global benevolent picture from

the United States. This geopolitical act is also applied to express representations in order to justify America's actions (Flint *et al.*, 2009, p. 605).

To obtain the main objective of this study, secondary sources are also used for the source of information (McNabb, 2005). These sources, such as relevant books and articles, comprise previous works which have been studied by other researchers and serve as supplementary documents (Merriam, 1989). Finally, through coding all the data and defining specific themes, the process of analyzing the data in this work is done based on the content analysis method.

RESULTS AND DISCUSSION

In responding to the main question of this study, the analysis on the content of selected data, such as speeches, official documents, and previous studies, has led to a focus on some specific themes that help the researcher identify the important geopolitical assumptions which could form the U.S. geopolitical code in relation to the Persian Gulf oil and the Iraq War. The arguments and discussions stress the oil experience of the Bush administration, the oil shortage and the severe threat to the United States industry, the dependency on foreign oil, the Persian Gulf oil as the U.S. vital interests, influence of neoconservatives' thoughts, the September 11 attacks, Iraq as a serious threat, pre-emptive war as a response to the threat, and oil control of the Persian Gulf as a necessity for the continuation of America's hegemonic position.

The Bush Administration and Oil Industry — *Assumptions and Experiences*

Midland in the West Texas is a flat, dry and dusty place, which has been seen as the capital of the Permian Basin. It was the place where George W. Bush and his parents returned to in 1950. Despite the seemingly dreary landscape, a sea of oil swims beneath it. Notably, in 1950s, it comprised nearly 20 percent of America's oil production. Following his father's path to business and for other political reasons, Bush Jr. returned to Midland in 1975. It coincided with the quadrupling of oil prices due to the Yom Kippur War[1] and the establishment of OPEC in 1973 and 1974 (Zelizer, 2010). In Midland, he experienced an entry-level position in the oil industry and the funds raised via his family connections helped form his oil exploration company (Greenstein, 2003). He noted, "In 1979, I started a small energy exploration company in Midland. I raised money, mostly from the East Coast, to finance drilling in low-risk, low-return oil and gas wells" (Bush, G.W., 2010, p. 30). He also continued his oil company business instead of political activities; however, he was not as successful as his father, Bush Sr. Furthermore, it coincided with a recession in the oil industry around 1982. Subsequently, his oil company, Arbusto, was merged with Spectrum 7, which was a big oil exploration company in 1984 (Marquez, 2007). Although he ultimately left the oil business in 1990, supporting the oil drilling in the Arctic National Wildlife Refuge became an important issue that he campaigned for in his 2000 presidential election campaign. He declared in his first presidential debate on October 3, 2000, that

> *"I was a small oil person for a while in west Texas… You bet I want to open up a small part of Alaska. When that field is online, it will produce one million barrels a day." With reference to the import of one million barrels from Iraq, he commented, "I would rather that a million come from our own hemisphere, have it come from our own country as opposed to Saddam Hussein".*
>
> (Bush, G.W., 2000)

Later, when George W. Bush became the United States President and in response to the influence from domestic oil producers, he nominated some famous politicians for important positions in his administration. Dick Cheney was appointed as the Vice President in 1993 when President Clinton took the Office. Cheney was CEO of Halliburton Company, which is one of the biggest oil-services companies in the world to date. Prior to that, when Cheney was the Defense Secretary in the Bush Senior administration, Halliburton won a five-year contract to provide logistics for the United States Army, and it won defense contracts worth over $2.2 billion when Bush Jr. was inaugurated. Moreover, Cheney resigned from Halliburton Company in 2000 while he still received about $1 million annually from the company (Burman, 2007). Another

Bush Cabinet member, Donald Rumsfeld, who was the Defense Secretary, held different positions especially in the Reagan administration; the most important of them was related to his mission as Reagan's Special Envoy to Iraq. There is a view that his aim was to increase Iraq's oil exports through Jordan by using an oil pipeline, which could supply cheaper oil for the U.S. and Israel (Wogan, 2004). Furthermore, from this position, he managed to gain valuable experiences, particularly concerning Iraq and the Middle East oil. In this context, others to be considered were Donald Evens as the Commerce Secretary, who was the owner of Colorado Oil Company, Gen. Thomas White, the Secretary of the Army who was from Enron Energy, and Robert Jordan, the Saudi Arabia ambassador, who was a member of Baker Botts and active in oil and defense affairs (Pfeiffer, 2004).

The United States Oil Industry and the Severe Oil and Gas Shortage

Indeed, although there is this view that the intention of toppling Saddam Hussein in Iraq had been formed at the beginning of the Bush administration in early 2001 (Clark, 2005), at that time, however, preventing terrorism or controlling the spread of weapons of mass destruction (WMD) after the September 11, 2001 attacks was not yet a top priority of Bush foreign policy. There was a severe oil and gas shortage, especially in some parts of the United States, which began months before Bush Jr. became the President (Klare, 2004b). At that time, the nation was suffering from

increases in gasoline prices, shortage of natural gas in some regions, and rolling blackouts in California. This difficult situation continued until George W. Bush entered the White House in early 2001. In response to this crisis, the National Energy Policy Development Group (NEPDG) was created by the President, led by Vice President Dick Cheney. This group was appointed to analyze the difficult situation concerning America's energy and plan suitable solutions for that problem (Klare, 2004c).

The United States Oil Industry — National Energy Policy and Increasing Dependency on Foreign Oil

According to the National Energy Policy (NEP) report, this body was established by the President in his second week in the office, an act which in the first instance reveals the significance of oil and natural gas to the Bush administration's view. This report concludes that the United States faced the most serious crisis of energy shortages in 2001 – a situation which had its beginnings during the oil embargoes in the 1970s. The nation's energy crisis was a result of a basic imbalance between supply and demand. This posits that even increasing levels of energy production at the same rate which occurred during the previous decade could not meet the increasing levels of consumption during this energy crisis. This imbalance could have undermined the U.S. economy, the Americans' standard of living, as well as the U.S. national security.

On the other hand, estimates indicated that by 2020, the U.S. oil and natural gas consumption would increase by 33 and 50 percent, respectively, and the existing growth rate for oil production would improve the gap between demand and supply. Statistically, following the report, the United States daily oil consumption would grow by over 6 million barrels between 2000 and 2020. Moreover, according to previous growth patterns of production, it would face a decline of about 1.5 million barrels per day. It stressed that by 2020, only 30 percent of America's oil needs would be supplied from the U.S. oil production, and thus, the U.S. would have to import nearly two out of every three barrels of oil (NEP, 2001)[2].

This document explicitly looks at other regions outside the U.S. territories which could supply America's energy needs, although it considers five specific national goals as follows: "America must modernize conservation, modernize our energy infrastructure, increase energy supplies, accelerate the protection and improvement of the environment, and increase our nation's energy security" (NEP, 2001, p. ix).

As Klare (2004c) correctly noted, instead of stressing conservation and the rapid expansion of renewable energy sources as the main challenges, the report reflects increasing U.S. dependence on oil, and because U.S. oil production was declining, any rise in the U.S. oil consumption would increase its dependence on imported petroleum. The report (NEP, 2001) represents the importance of energy position in the Bush administration, and it explicitly refers to the U.S. dependence on oil as a serious long-term challenge, as well as stresses a close linkage between U.S. economic security and its trading partners, on the one hand, and the global oil market development, on the other (p. 1-11).

The Persian Gulf Oil as the United States Vital Interests — A Geopolitical Assumption

NEP refers to the role of the Middle East in terms of "where supply is geographically concentrated" in determining the oil price. In this respect, it declares that among those regions which supply the world oil, "Central and South America account for 9 percent", Africa and North America, 7 and 5 percent, respectively, and Eastern Europe and the former Soviet Union, 5 percent. As stated in the report, the rest of Asia and Western Europe, account for 4 and 2 percent, respectively.

Among all regions, the Middle East dominates almost "two-thirds of world proven reserves" and this explains how this region has a huge dominant impact over the price of oil, which is a vital matter for the U.S. and West (p. 1-12). Just consider what had been said in 1999 by Dick Cheney, when he was Chairman of Halliburton Company. He declared that, although there are many regions around the world that provide great oil opportunities, only the Middle East region "is still where the prize ultimately lies" and this is due to its huge reservoirs and its lowest cost (Cheney, 1999).

In this respect, according to the United States Department of Energy, the Persian Gulf region supplied about 12.6 per cent of U.S. demands and about 23.8 percent of its oil imports in 2000. Moreover, about 21 and 75 percent of West Europe and Japan, respectively, were also supplied via the Persian Gulf (EIA, 2002b). It is interesting to note that at that time, like the previous administrations[3], the Persian Gulf region was identified as the U.S. vital interests. Hence, from this point of view, access to that region was one of the key considerations in the U.S. foreign policy at the time (O'Tuathail, 2003).

The Bush administration in this report (NEP, 2001) stressed that by 2020, between 54 and 67 percent of the world's oil demands would be supplied by the oil producers in the Persian Gulf. Therefore, dependency of the global economy on the supply of oil from the Organization of Petroleum Exporting Countries (OPEC) members would also be increased. Consequently, "this region will remain vital to U.S. interests". It also stressed that "the Gulf will be a primary focus of U.S. international energy policy" (pp. 8-4 & 8-5).

Therefore, since the Second World War, as a principal element in defining the geopolitical code, the Persian Gulf region has repeatedly been positioned as the United States vital interests, and this has been a persistent geopolitical assumption among the U.S. political leaders. Along with some other different factors, the issue of energy security with focus on the energy resources of the Persian Gulf has obviously been the most significant element determining this area as a vital interest, which prescribes the United States military presence in the Persian Gulf.

Apparently, this was explicitly emphasized by President Carter, known as the Carter Doctrine. According to Klare (2006), the doctrine has been continued through to the Bush administration so that any threat to these interests will always be answered by military action. However, to define geopolitical codes, it is necessary to specify and define the potential threats to America's interests, the adequate response to threats and the justification to choose that response (Flint & Taylor, 2007). The Bush administration also required an adequate opportunity to act, which was, of course, provided by the September 11 attacks in 2001.

The Neoconservatives and Redefining the United States Geopolitical Code

As O'Loughlin noted, it was a reality that although the United States desired to reorder the geopolitical condition of the post-Cold War world, it had not yet consistently accepted a certain geopolitical code (O'Loughlin, 2000). It was an attempt to redefine its geopolitical code with regard to keeping its position as the sole remaining superpower from the Cold War era, and reordering the new geopolitical world order. It started with the geopolitical transition period immediately after the fall of the Berlin Wall in 1989, and the policy was pursued even more actively with the collapse of the Soviet Union in 1991. The

most remarkable attempt to redefine a new geopolitical code was between 1991 and 2000 with Bush Senior's pronouncement of the New World Order. The 1991 Gulf War was based on this idea to construct a new geopolitical world order, but was not pursued by the Clinton Administration (Flint *et al.*, 2009).

In 1993, not long after Bill Clinton became the President, the neoconservatives began a number of censures against his administration. Within this period, two geopolitical discourses emerged as variants of neo-conservatism and became influential visions of twenty-first century geopolitics. One of them was Samuel P. Huntington's 'Clash of Civilization,' which portrayed 'the West' against 'the Rest' so that others would try to challenge the West's primacy. A new cross-civilizational concept was introduced, namely, the 'Confucian-Islamic connection' that would be a network of 'weapon states' and provide a dangerous 'otherness' to 'the West'. That new enemy would threaten the 'Western interests, values and power'. Huntington, as a neoconservative, extended a vision of a 'culture war' between 'the West' and the 'Otherness', which was a 'standard neoconservative preconception'. In addition, the second neoconservative geopolitical discourse related to the 'Statement of Principles' announced by a group called Project for a New American Century (PNAC). Reasserting the American supremacy in world affairs was the main goal of PNAC, on which basis the United States would become sufficiently strong and would need greater levels of defense spending (O'Tuathail, 2006, pp. 120-123).

Later, especially after the September 11 attacks, both these geopolitical discourses influenced the U.S. action. The Middle East remarkably became the geographical context to practice these discourses. Al Qaeda, a terrorist group which had its roots in Saudi Arabia, designed an unprecedented attack on the West's world symbols while claiming its purpose was to protect the Muslim world's interests against the West (Bin Laden, 2002).

It is also important to note the particular importance of PNAC to the Middle East region, where the 'Statement of Principles' emphasized the vital role of the U.S. in maintaining peace and security in the Middle East. Furthermore, history has also shown that along with the survival of Israel, energy resources of the Persian Gulf had always been America's most vital interest in the Middle East. More interesting is that, PNAC was organized by neoconservatives, some of whom were nominated by Bush Jr. in his administration, namely, Dick Cheney (Vice President), Donald Rumsfeld (Defense Secretary), Paul Wolfowitz (Rumsfeld deputy), as well as Jeb Bush and Lewis Libby (Cheney's Chiefs of Staff). Conservative views were clearly demonstrated, especially after September 11, in the framework of the National Security Strategy document (NSS-2002), as well as in decisions made concerning the invasions of Afghanistan and Iraq.

It is noticeable also that overthrowing Saddam Hussein was one of the greatest causes of neoconservatives in the late 1990s (O'Tuathail, 2006). It was on January 26, 1998, when some neoconservatives, such

as Elliot Abrams, Francis Fukuyama, Robert Kagan, Paul Wolfowitz and Donald Rumsfeld, wrote a letter to President Clinton, urging the United States administration to act decisively (Abrams *et al.*, 1998). As noted by O'Tuathail (2006), after the September 11 attacks, the worldview of neoconservatives was not only changed but also strengthened, in which they applied more aggressive policies to pursue their agenda. It started with the "preparations for the public relations campaign to justify the invasion of Iraq." In this respect, "the campaign was launched with the publication of new National Security strategy in September 2002" (O'Tuathail, 2006, p. 127).

Before that, on September 20, 2001, a letter was written to George W. Bush through PNAC and signed by some neocons, supporting the necessary military action in Afghanistan to remove Saddam from power. The signatories to this letter, namely, William Kristol, Jeffrey Bergner, Francis Fukuyama and Geoffrey Bell, emphasized that, "even if evidence does not link Iraq directly to the attack, any strategy aiming at the eradication of terrorism and its sponsors must include a determined effort to remove Saddam Hussein from power" (PNAC, 2001). It clearly demonstrated removing Saddam from power as a previously determined project as well as influencing the neoconservative assumptions about the Bush administration, especially about Iraq.

The United States Geopolitical Code and the 11/9 Attacks — A Unique Opportunity

The September 11 terrorist attacks, 2001, indeed provided an opportunity for the Bush administration to reconstruct the United States geopolitical code, and based on these unprecedented events, the 'War on Terrorism' introduced what scholars knew as a geopolitical code. It had its roots in the NSS-2000, which was the foundation of the "Bush Doctrine. In addition, NSS was actually an annual exercise that updated the U.S. geopolitical code (Flint, 2006). Obviously, the immediate U.S. response to the September 11 attacks was 'War in Afghanistan'. It took place on October 7, 2001, against the terrorist training camps of al Qaeda and the military camps of the Taliban regime in Afghanistan (G. W. Bush, 2001), and effectively introduced the Bush Doctrine and War on Terrorism.

According to NSS, what became known as the Bush Doctrine, the identified geopolitical threat "contained an apparent vagueness, but was able to become fixed on particular countries quite easily" (Flint, 2006, p. 72). This document emphasized that, "the United States of America is fighting a war against global reach." Based on this document, the enemy was not a person or a political regime; it was also not a religion or ideology, but the enemy was "terrorism" (NSS, 2002, p. 5). Placing terrorism in a global context enabled activity at different times and in specific geographical regions. It was indeed seen as a combination of different paradigms, namely, 'noblesse oblige' and 'eagle triumphant'

paradigms, which were the results of Global War on terror rhetoric. This helped to form a militaristic foreign policy for democratization and development, on the one hand, and a 'world of regions' paradigm, on the other, for the U.S. response and responsibility against terrorists in specific geographical regions. From this view, the U.S. code was grounded with an emphasis on specific countries, although the agenda was global (Flint *et al.*, 2009). This kind of orientation in Bush's geopolitical assumptions had portrayed an "axis of evil" with an emphasis on specific regions, which included Iran, North Korea, and Iraq. President Bush declared in his state of the union address in 2002 that, "states like these and their terrorist allies constitute an axis of evil." For him, "these regimes pose a grave and growing danger" (Bush, G. W., 2002).

Regarding these geopolitical assumptions, terrorism, state supporters of terrorism, and weapons of mass destruction were identified as threats, which were elements of America's geopolitical code. Moreover, the pre-emptive strike was identified as a response to an identified threat in some specific countries, which was clearly aimed against Iraq. Based on this view, justifications were provided for these decisions and actions, some of which were considered opposites of freedom, global order of prosperity and civilization (Flint, 2006). According to the Bush administration, Iraq was a regime that had already used "poison gas to murder thousands of its own citizens - leaving the bodies of mothers huddled over their dead children" and it was "a regime that had something to hide from the civilized world" (G. W. Bush, 2002). What is important is that, all the three countries, namely, North Korea, Iran and Iraq, were accused of proliferating WMD and were considered the opposites of freedom and civilization. However, among the three mentioned countries, why only Iraq was selected for invasion, while even, according to Bahgat (2003), "fifteen out of the nineteen 9/11 hijackers carried Saudi passports"(p. 448).

Iraq — A Threat to Interests

The importance of energy resources in the Persian Gulf region has been discussed above, not least as it ensures the free flow of oil towards the industrial world as vital interests for the United States of America. In this respect, however, what was the role of Iraq among these interests?

Firstly, at that time, Iraq, with about 112 billion barrels of oil, possessed the second largest proven crude oil reserves in the world. It contained about 11 percent of the global total, while, according to a report of the Congressional Research Service (CRS) 2003, only 17 out of 80 oil fields had been developed, which concentrated around Kirkuk in the north and Rumaila in the south of Iraq. This country also had significant proven natural gas reserves, in which almost all were undeveloped (CRS, 2003). At that time, Iraq contained about 110 trillion cubic feet (TCF) of natural gas or about 20 percent of the world total (EIA, 2002a). Furthermore, according to the annual report of the Organization of the

Petroleum Exporting Countries (OPEC) in 2001, among the Middle Eastern producers, Iraq possessed the second largest proven oil reserves after Saudi Arabia. It covered more than 16 percent of the total Middle East proven oil reserves. Based on this report, the proven natural gas in Iraq also contained more than 4 percent of the Middle East total natural gas reserves in 2001 (OPEC, 2001). In the same year, oil exports from Iraq were about 2 million barrels per day, representing 12 percent of total oil exportation from the Persian Gulf, making Iraq the third oil exporter after Saudi Arabia and Iran, and also equal with Kuwait (EIA, 2002b). More importantly, there is the view that Iraq was capable to explore and exploit many additional oil fields due to its vast oil reservoirs; therefore, it had the capability to become an oil producer on a par with Saudi Arabia in the future. For this reason, it was called the second Saudi Arabia (Morse, 2004).

Secondly, it became more important when Iraq was considered along with the two other important Middle Eastern oil producers, namely, Saudi Arabia and Kuwait. In 2001, Saudi Arabia, as the world's largest oil exporter, held the leading position in the world's proven oil reserves with more than 25 per cent of the total and about 3.5 percent of global proven natural gas reserves (OPEC, 2001). It also produced about 44 percent of total Persian Gulf oil output (EIA, 2002b), and was the most important oil supplier to the United States after Canada in 2000, accounting for some 14 percent of U.S. total oil imports (NEP, 2001).

In this respect, Kuwait possessed about 10 percent of the world's proven oil reserves and about 0.8 percent of the world's proven natural gas (OPEC, 2001). On the other hand, Saddam Hussein, however, had proven that he was a potential threat for two of Iraq's neighboring countries, namely, Kuwait and Saudi Arabia. They were two regional friends of the U.S. and it was vital to the U.S. interests in the region to secure their stability. The invasion of Kuwait in 1990 and the greed of Saddam[4] for oil fields of the Persian Gulf countries, especially Kuwait, as an old desire had made him a certain threat to the Persian Gulf region and the flow of oil to the West. In President Bush Jr.'s statement during his speech in a Union address in January 2003, he clearly declared:

> *"Our Nation and the world must learn the lessons of the Korean Peninsula and not allow an even greater threat to rise up in Iraq. A brutal dictator, with a history of reckless aggression, with ties to terrorism, with great potential wealth, will not be permitted to dominate a vital region and threaten the United States"*
> (G. W. Bush, 2003b).

Despite the lack of direct reference to oil in most of his important speeches concerning Iraq and terrorism, Bush introduced directly and explicitly Saddam's government as a threat in the Union address, and deliberately alleged that Saddam was a threat greater than North Korea. For him,

Saddam was a dictator, and thus, posed a potential threat to other countries, in particular, the Iraq's neighboring states. In this respect, "precluding hostile domination of critical areas" such as "the Middle East and Southwest Asia" had also been considered as one of the objectives of the United States Armed Forces, as mentioned in the Quadrennial Defense Review Report of the United States Department of Defense (QDRR, 2001) .

Bush Jr. also explicitly referred to Iraqi oil as a great potential wealth. This was similar to the previous U.S. presidents, especially after the Second World War, in which he emphasized the Persian Gulf as a vital region for the United States. Based on his view, Saddam's domination over this region would translate as a peril to the U.S. vital interests, and thus, threaten the U.S. national security. Dick Cheney also stated clearly in his statement as Vice President in the Bush administration on August 25, 2002, "The whole range of weapons of mass destruction then would rest in the hands of a dictator... Armed with an arsenal of these weapons of terror and seat at a top ten percent of the world's oil reserves, Saddam Hussein could then be expected to seek domination of the entire Middle East, take control of great portion of the world's energy supplies directly threaten America's friends throughout the region and subject the United States or any other nation to nuclear blackmail" (Cheney, 2002). Indeed, Saddam could not be a threat to the U.S. interests or to the status quo in the region if Iraq did not have the central geographical

situation among the world's oil supplies (Morse, 2004). The threat could be supposed when Saddam was potentially capable of threatening the U.S. allies, especially Saudi Arabia and Kuwait.

It was apparent that by dominating Iraq, Saddam would threaten three key oil producers and reserves in the world, countries which were exporting about 68 percent of the Persian Gulf oil exports. These were three oil countries with common borders, and because Iraq had always faced geopolitical limitation to access the high seas through the Persian Gulf, there was always the possibility of Iraqi invasion of Kuwait and Saudi Arabia (and even Iran, given what happened from 1980 to 1988). Therefore, Iraq could be a serious potential threat to the United States and on the basis of the Bush Doctrine and neoconservative thought, Iraq as a 'rogue state' required an adequate response, which was defined as the 'pre-emptive attack'.

The Pre-emptive Action — A Response to Threat

Bush already announced in his state of the Union address in 2002 that, "all nations should know: America will do what is necessary to ensure our Nation's security...I will not wait on events while dangers gather. I will not stand by as peril draws closer and closer" (G. W. Bush, 2002). This geopolitical assumption was also reflected in the National Security Strategy (NSS) through the framework of pre-emptive action. This document stressed the U.S. "right of self-defense by acting

pre-emptively" (NSS, 2002, p. 6). It simply emphasized striking before America's enemies strike first (Flint, 2006). At that time, although the Containment policy that was the U.S. geopolitical code during the Cold War era had been changed to War on Terrorism, in both times, using military force to protect U.S. vital interests was considered as adequate response. In this regard, just as the Carter Doctrine determined military action in response to the Soviet expansion towards the Persian Gulf, the Bush Doctrine selected Iraq as a rogue state and pre-emptive action was prescribed as a response to prevent domination of a dictator over the oil fields in the Persian Gulf.

As a result and apart from different representations of the U.S. geopolitical code, such as spreading freedom and democracy as values to justify war against Iraq, war as a response to protect a vital interest in the Persian Gulf region could be considered a fact. As Flint (2006) noted, "if the calculations for war can be traced to material interest, such as access to oil, governments must emphasize values or ideas in justifying their foreign policy, especially when it involves invading a country rather than defending one's own" (p. 101). This geopolitical fact of protecting the Persian Gulf energy resources as the U.S. vital interest along with other geopolitical reasons such as the Greater Middle East Project (Guney & Gokcan, 2010; Naji, 2004) was what could be existed behind the U.S. foreign policy or using military action against Iraq. This policy was justified through justifications such as promotion of

democracy and protection of freedom as the U.S. values. From this viewpoint, it was a 'resource war' – a war for natural resources which has always been a critical motive (Le Billon, 2004), whether because of acquiring important raw materials for domestic needs, or for controlling vital resources in a competitive world environment. In fact, accessing global resources, in particular oil, has always been seen as a battleground. Apparently, the twenty-first century will be the same as the twentieth century and one that appears to be the century of oil too (O'Loughlin & Wusten, 1993).

Tracing the reasons for al Qaeda's September 11 attacks, it is also important to note that Osama bin Laden in his 'Letter to America' noted, "You steal our wealth and oil at paltry prices... This theft is indeed the biggest theft ever witnessed by mankind in the history of the world" (Bin Laden, 2002). On the other side and one year later, protecting this 'wealth' was also stressed by President Bush to justify the war against Saddam Hussein in Iraq in 2003 (G. W. Bush, 2003b). Therefore, there was a strong linkage between the U.S. geopolitical code and the Persian Gulf oil as America's vital interests, such that along with other security reasons, this could influence the U.S. leader's geopolitical assumptions in determining the U.S. geopolitical code, and ultimately the orientation of U.S. foreign policy toward the invasion of Iraq. Needless to say, this was the reason Iraq was selected for invasion, as clearly evident in the statement by the Deputy of U.S. Defense Department, Wolfowitz on May 31, 2003,

"Look, the primary difference – to put it a little too simply - between North Korea and Iraq is that we had virtually no economic options with Iraq because the country floats on a sea of oil"[6] (Wolfowitz, 2003).

Oil Control for Hegemonic Goals

With reference to the offensive realism theoretical approach, the invasion of America in Iraq in 2003 and consequently its military presence in the Persian Gulf could be interpreted as America's attempts to prevent emerging regional hegemons and promote its own hegemonic position in the world. From the perspective of geopolitics of oil in the world, this can be seen as a strategic decision to control the largest basin of oil in the world. Thus, this is also a means of controlling other great powers, in particular those states which are potential regional hegemonic states such as China. This perspective is reminiscent of "the global oil spigot" for gaining an efficient rule over the global economy (Harvey, 2003) and exerting leverage over industrial rivals (Mercille, 2010). Indeed, it stresses that the control of oil has always been defined as "the centre of gravity of U.S. economic hegemony" (Bromley, 2006).

America's desire to continue in its highest position, which had remained from the Cold War era, was clearly seen in Bush's speeches and the NSS-2002. However, it had been stated as a necessary step to protect the American values as well as promoting these values across the world. Expansion of freedom, democracy and peace throughout the countries especially amongst, as Bush

said, the uncivilized world had been defined as a significant mission and responsibility for the United States. Bush further said that, "America is a nation with a mission, and that mission comes from our [American] most basic beliefs" (G. W Bush, 2004). In this respect, the National Security Strategy of the U.S. stressed freedom as "the non-negotiable demand of human dignity," that the U.S. assumed the responsibility of leading the expansion of it and its benefits across the world as a great mission (NSS, 2002).

From this perspective, invading Iraq was also to promote democracy as the American value in Iraq and the Middle East. For Bush, a free Iraq in the Middle East would mean "a watershed event in the global democratic revolution," and indeed, Iraq could be regarded as "a model for the broader Middle East" (Bush, G. W., 2003a; 2003; 2004a). Simultaneously, terrorism was defined as a threat to the American values and the civilized world, which was under the leadership of the United States. In this respect, all countries which supported terrorism would be considered as a threat as well. These threats were specified as the 'axis of evil' (G. W. Bush, 2002), the 'rogue states'(NSS, 2002), the 'outlaw regimes' (G. W. Bush, 2003b), and the 'dangerous regimes' (Bush, G. W., 2004b). Iraq was also defined as a state that was trying to proliferate weapons of mass destruction (WMD) and was allegedly a supporter of terrorist groups.

These justifications facilitated the U.S. action against Iraq as well as its military

presence in the Persian Gulf region. In this respect, two significant objectives could be reached through the Iraq War, which were in conformity with the U.S. geopolitical code: first, a regime change that was done to remove a regional threat to the U.S. rich oil friendly countries such as Kuwait and Saudi Arabia, and second, by using these justifications, the United States would be able to continue its military presence in this area and consequently control the largest oil reservoir in the world. By controlling this region, the U.S. would control the oil flows to the industrial countries, and thus, control the global economy. Finally, it could be resulted in controlling other potential regional hegemonic states as well as preventing the emergence of new regional hegemons while promoting its own hegemonic position globally.

CONCLUSION

After the terrorist attacks on September 11, 2001, the U.S. leaders found an opportunity to redefine the U.S. geopolitical code as a Global War on Terror. This global geopolitical code relied on those geopolitical assumptions that would pursue the U.S. global hegemony in particular after the Cold War geopolitical order. With regard to this geopolitical code and through observing the U.S. foreign policy toward the Persian Gulf, in particular the Iraq War 2003, this research suggests two important issues. First, the importance of the Persian Gulf oil as a vital interest for the U.S. and the removal of Saddam from his power were

two imperative geopolitical assumptions that influenced the Bush administration.

Second, amongst the three states claimed as the 'axis of evil' by Bush, Iraq was selected as the target for the U.S. pre-emptive war. It was done because Iraq possessed a huge extendable amount of oil reserves and its oil was necessary for the industrial world. In addition, history had also shown that the Iraqi government could be a potential threat to neighboring states, in particular Saudi Arabia and Kuwait, which were regional allies of the United States. More importantly, the Iraqi oil, along with that from the two mentioned countries, constituted about 68% of the Persian Gulf total exports. Hence, from this view, Iraq could threaten significant amounts of the Persian Gulf oil exports. In the Bush Doctrine, Iraq was introduced as a threat, and thus, the pre-emptive action was defined as a response with the expansion of freedom and democracy being the justifications for the action. From this perspective, therefore, it formed a strong link between protecting the Persian Gulf oil as a crucial element for the U.S. national security and defining the Iraqi government as a certain threat to oil fields of the region and a supporter of terrorism as well. Finally, the Bush Doctrine and Bush's speeches emphasized the importance of expanding the American values and defending them across the world as a global mission for the United States. It was a justification for going to war abroad such as in Iraq.

Furthermore, it was considered as a global responsibility to prevent terrorist attacks on the civilized world and to promote democracy in the Middle East. However, it clearly revealed the U.S. attempt to keep and promote its own hegemonic position, as well as deter other great powers from becoming regional hegemonic states, and this conforms to the tenets of the offensive realism theory. Tracing the Bush Doctrine and his presidential speeches, there was clearly a strong linkage between preserving the U.S. hegemonic position and promoting the American values around the world. In this respect, to preserve its hegemony, the U.S. had to continue its global presence and protect its values. Obviously, adopting the U.S. culture and ideology by other states would reinforce U.S. hegemonic position and consequently prevent the emergence of other potential regional hegemonic powers. In addition, the U.S. military intervention in Iraq and the removal of Saddam Hussein from power would stop Iraqi hegemonic ambitions. As Bush (2003b) and Cheney (2002) noted, this would prevent the Iraqi regime from dominating the entire Middle East.

ENDNOTES

[1] The Yom Kippur War which took place between October 6 and October 25, 1973, was fought between Israel and a coalition of some Arab countries, led by Egypt and Syria. It began when forces of the coalition crossed ceasefire lines and entered the Sinai Desert and Golan Heights, which had been occupied by Israel since the Six-Day War in 1967. This conflict also created serious tensions between the two superpowers, the United States and the Soviet Union, and led to a near-confrontation between them. That war was also called the Ramadan War, or the Fourth Arab-Israel War. For more information see (Dunstan, 2007).

[2] In this respect, the U.S. Department of Energy in 'International Energy Outlook 2002' with reference to the United States as the largest consumer of oil in the world, for more than one-quarter of total world demand had predicted that the primary consumption of oil in America would increase by 1.5 percent annually from 1999 to 2020. Moreover, that oil share in the U.S. energy mix would increase slightly from 39.4 percent in 1999 to 39.7 percent in 2020, totaling 26.7 million barrels per day (EIA, 2002a).

[3] All administrations from President Truman to President Clinton, as well as documents such as 'A National Security Strategy for A New Century - 1998' and 'A National Security Strategy for A New Century - 1999' and 'A National Security Strategy for A Global Age - 2000', which had been projected before the beginning of Bush's presidency emphasized the importance of the Persian Gulf region for the United States to ensure the security of oil flow toward the U.S. and its allies, namely, West Europe and Japan. For more information, see (NSS, 1998, 1999, 2000).

[4] From Saddam's view, Kuwait was part of the Ottoman province, which was under the authority of Basra, and thus, Kuwait belonged to Iraq. However, Saddam's main concern was oil, and from his view, Kuwait owed Iraq because Iraq had fought against Iran for all the Arabs. He also claimed that Kuwait's oil must be used for all the Arabs. For more information, see (Long, 2004) and (Flint, 2006).

[5] Saddam had been introduced as a threat to the security, peace and oil fields of the region as mentioned through Bush Senior in his state of the Union address on January 29, 1991 (G. H. W. Bush, 1991) and Clinton's speech in 1988 (G. W. Bush, 2010, p. 227).

[6] This statement from Wolfowitz has been noted in different sources with minor changes. These sources cite that, "the most important difference between North Korea and Iraq is that economically, we just had no choice in Iraq. The country swims on a sea of oil." See, for instance,(Le Billon, 2004) and (Wright, 2003).

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Exploring Lecturers' Perception on Learning Organization Dimensions and Demographic Variables in Technical and Vocational Colleges

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ABSTRACT

The purpose of this study was to explore the perception of 295 lecturers on learning organization dimensions and demographic variables in technical and vocational colleges in four provinces of Fars, Khuzestan, Boushehr, and Kohgilouyeh and Boyerahmad in Iran. Data was collected using a questionnaire and analyzed utilizing SPSS which included the use of descriptive and inferential statistics. The findings showed that respondents' perceptions were rated from moderate to high in learning organization dimensions with significant differences based on the type of employment, academic rank and education level. No significant differences were observed in gender and marital status towards learning organization dimensions. The relevant literature shows few studies regarding learning organization dimensions and demographic variables locally and internationally. Therefore, the findings can be evaluated as useful information and guidance for educational administrators and leaders in utilizing learning organization dimensions in the management of educational institutions.

Keywords: Demographic Variables, Learning organization Dimensions, Technical and Vocational Colleges

INTRODUCTION AND PROBLEM STATEMENT

Several researchers have shown that organizations which give emphasis on learning and employees empowerment have

come become more successful, adaptive to changes and survive longer than their counterparts (Asadi, Ghorbani, & Naderan, 2009; Dirani, 2009). Garvin (2003) stated that the lack of learning culture makes organizations and individuals simply repeat old practices. The development of learning culture not only helps organization members to create new knowledge, but also helps them remain dynamic too.

Learning in organization is really about empowering the workforce and integrating work with learning in a continuous manner (Bryson, Pajo, Ward, & Mallon, 2006; Ortenblad, 2004). Accordingly, many organizations are trying to recognize and adapt new ways of learning to keep with the enormous changing pace of work. In addition, it has been found that providing learning opportunities for employees to carry out their tasks more effectively with more autonomy and innovative practices are strategies for attaching people to the organizations psychologically (Agarwala, 2003; Krishna, 2008). Watkins (2005) also has stated that educational institutions more than any time need to make rapid and difficult decisions. "One way to help higher education institutions preserve their professional cultures, while still retaining both faculty governance and rapid response, is to create a learning culture, a culture that is structured to make changes more readily" (p. 415).

The subsequent benefits have often been cited as reasons for creating learning organizations. First, learning organization help to increase the levels of innovation regarding the processes, products, and technological application (Alas & Sharifi, 2002; Garvin, 2003). Second, they provide opportunities for leadership and promote a transformational and shared style of leadership within the managerial level of the organization (Chajnacki, 2007; Ellstrom, 2001; Yulk, 1998). Third, learning organizations help to generate, analyze, store and distribute increasing amount of knowledge with the organization and provide appropriate access to employees who deal with more urgent and multifaceted problems (Alas & Sharifi, 2002; Chajnacki, 2007; Garvin, 1993; Marquardt, 2002). Fourth, learning organizations provide opportunities and resources to balance the personal and professional growth needs of employees and encourage them to use new skills in innovative ways (DiBella, Nevis, & Gould, 1996; Senge, 1990).

However, a quick review of learning organization literature shows few empirical researches on learning organization dimensions. In addition, little is known about whether the concept of the learning organization, which originated in a Western context (Marquardt, 2002; Marsick & Watkins, 2003) and in business companies (Senge, 1990) is applicable in educational settings. Moreover, the application of learning organization dimensions in educational settings together with the impact of demographic variables on learning organization dimensions have not been the focus of attention in the past (Tseng, 2010; Wang, 2005). Furthermore, as Iran is a developing country with different social

and organizational culture, the research pertaining learning organization is scarce. This raised the question whether the learning organization model which origin in the West has the capacity to be conducted in Iranian educational contexts to fill the gap of theoretical and empirical knowledge pertaining learning organization dimensions and provide empirical evidences to help educational leaders to manage their colleges more efficiently and effectively.

TECHNICAL AND VOCATIONAL COLLEGES

Providing skilled and semi-skilled human resources for both governmental and private sectors as one of the basic priorities and policies of developed and developing countries has increased the importance of technical and vocational trainings in globalization era (Sadeghi, Sabheyeh, & Keshavarzi, 2008; Tilik, 2002; Zainabadi, Salehi, & Parand, 2007). Asian countries have placed varying emphasis on technical and vocational education, depending upon several historical, social, economic and political considerations. UNESCO adapted in 1974 an important detailed recommendation pertaining to technical and vocational education, and argued for provision of technical and vocational education as a) an integral part of general education; b) a means of preparing for an occupational field; c) and as an instrument to reduce the mismatches between education and employment and between school and society at large (King, 2007).

With regard to Iran, the social, political and economic environment has changed fundamentally in comparison to the past three decades. This difference has become more important over the past ten years with main reforms occurring in educational sectors (Mehralizadeh, 2005; Veisi, 2010). Technical and Vocational Colleges (TVCs) which were established in 1930 served as a means for educating skilled manpower in post high school training i.e. higher education in the technological line in Iran. These professional colleges were the recommendation of a German consultant as complementary to the Faculty of Engineering of the University of Tehran which was an academically oriented institution. The activities of these colleges were gradually terminated in 1965 due to the lack of social status of the Technical and Vocational Education (TVE) as compared with white collar institutions such as the Faculty of Engineering (Ebtekar, 1996).

Developing quantitatively and qualitatively after Islamic Revolution in 1979, TVCs have played significant roles in training, nurturing, and educating competent and qualified manpower in Iran. They are also a pioneer in providing technical and vocational human resources in all fields for both boys and girls. They train human resources to fill the vacancy of lack of technicians in both governmental and private sectors. In line with Iran's march towards a comprehensive development plan, TVCs have focused their efforts to develop technical and professional trainings in all

fields to educate skilled and competent human resources (Behbahani, 2010; Khalaghi, 2003). The number of TVCs is 148 which are the biggest technical and vocational institutions for boys and girls. They admit students from technical and vocational schools which consist of three fields of industry, agriculture and services. All TVCs have been distributed based on geographical considerations in seven regions throughout Iran. These institutions need educational personnel who know how to match theory and practice in action. They should be able to apply the newest teaching strategies in class situation, too (Behbahani, 2010; Ebtekar, 1996; Sadri & Zahedi, 2010). Despite their great importance in providing competent and skillful human resources, they have not been the focus of attention in relation to research and study of new theories of organizational development in the past (Asadi *et al*., 2009).

In addition, the literature of learning organization shows that the concept of the learning organization has received much attention in organizational studies; however, educational institutions have not fully attributed learning organization practices (Alam, 2009; Attafar & Bahrami, 2009; Yang, Watkins, & Marsick, 2004). White and Weathersby (2005) reported some obstacles including challenges of strategy, structure and culture, as well as academic culture clashes that may prevent educational institutions to become learning organizations. In this regard, the concern is whether these institutions have the capacity to create a learning culture to help their staffs, both educational and non-educational to enhance their knowledge, skills and attitudes.

LEARNING ORGANIZATION DIMENSIONS

The literature of learning organization theory shows that for more than three decades it has been the focus of attention as a subject of study, research, training and development (Asadi *et al*., 2009; Pimapunsri, 2008). It has been conceptualized and explored from different angles and through different models by many researchers. Numerous attempts have been made in the past to define the concept of learning organization. Some researchers indicate that the concept itself is still unclear and confusing (Fulmer, Gibbs, & Keys, 1998), whereas some are happy with that (K. Watkins & Golembiewski, 1995). Others recognize the difficulty of describing what a complete learning organization looks like (Watkins & Marsick, 1993). Scholars argue that each organization produces its own learning organization and these particular learning organizations are vigorously and frequently changing (Dirani, 2009). In addition, many organizations in various countries of the world have preferred to adapt learning organization, because of its profound effects and impacts on professional and skill development of their employees (Alam, 2009). Top-level managers in organizations have realized that to increase efficiency, improve customer service, provide defect-free products, and achieve organizational objectives, the learning organization is the best choice

(Ayupp & Perumal, 2008; Jamali & Sidani, 2009). Asadi *et al*., (2009) also stated that the learning organization is valuable as it creates innovative pattern of thinking.

Senge (1990) defined learning organization as the "organization where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to learn together" (p.3). Ortenblad (2002) defined learning organization as an organization that is constantly increasing its capacity to form its future. Sugarman (2001) stated that a learning organization would be good at making new solutions and sharing knowledge with other members who may need it. Watkins and Marsick (1993) defined learning organization as "an organization that learns continuously and transforms itself and one that is distinguished by total employee involvement in a process of jointly conducted and collectively responsible change directed towards shared values or principles" (p.118). Central to Watkins and Marsick's (1993) theoretical framework of learning organization, are seven dimensions including: continuous learning, dialogue and inquiry, collaboration, embedded system, system connection, empowerment and strategic leadership. Watkins and Marsick further developed dimensions of learning organization questionnaire (DLOQ) measuring the learning dimensions on seven dimensions. These seven dimensions are defined based on Watkins and Marsick's (1993) conceptualization in Table 1.

To be innovative and act effectively in managing the organizations, managers need to create learning opportunities for all organization members. Learning in organization is really about empowering the workforce and integrating work with learning in a continuous manner (Bryson *et al*., 2006; Ortenblad, 2004). In a learning organization, every individual's contribution is important to the life and well-being of the organization (Argyris & Schon, 2002; Hiatt-Michael, 2001). Despite the importance of learning organization which has been approved by theoretical and empirical researches internationally, little research can be found in the Iranian context, particularly in educational settings. The following sections provide some information of the methodology, findings and recommendations of this study.

RESEARCH OBJECTIVE

The overall purpose of this study is to determine the level of respondents' perception on learning organization dimensions and differences in continuous learning, dialogue and inquiry, collaboration, embedded system, empowerment, system connection and strategic leadership based on employment type, academic rank and education level to help administrators of TVCs to manage their staff more effectively in Iran.

RESEARCH QUESTIONS

For this purpose, the research questions posed in this study is worded as the following, .

1. What is the level of lecturers' perception of learning organization dimensions in TVCs?

2. Is there any significant difference in perception of learning organization dimensions by lecturers based on employment type?

3. Is there any significant difference in perception of learning organization dimensions by lecturers based on academic rank?

4. Is there any significant difference in perception of learning organization dimensions by lecturers based on education level?

METHODOLOGY

This study employed a quantitative research design to explore the levels of learning organization dimensions and their significant relationship with educational level, type of employment and academic rank among 1606 lecturers of TVCs in four provinces of Fars, Khuzestan, Boushehr, and Kohgilouyeh and Boyerahmad in Iran. G-power statistical software was utilized to determine the sample size. Two sampling methods including proportional stratified random sampling and simple random sampling were employed to collect data from 295 respondents (from all the four provinces)*. It was revealed that the majority

TABLE 1
Learning Organization Dimensions Applied in TVCs

Dimensions	Definitions
Continuous Learning	The extent to which learning is designed into work so that people learn, acquire knowledge, values and skills for personal and career development on the job. The degree an organization tries to create continuous learning opportunities for all of its members.
Dialogue and Inquiry	The extent to which the climate and culture of the organization allows organization members to talk, discuss, explain their experiences and skills and the capacity to listen and inquire into the views of others.
Collaboration	The degree to which an organization tries to design work for organizational members, have shared vision and personal mastery to exchange their views and ideas to think and learn collectively and strengthen working collectively.
Embedded System	The extent an organization prepares organizational members to try to use both high and low technology systems to capture and share learning.
Empowerment	The process of enabling people to act, and participate in policy making in creating a shared and collective vision. This process continues to get feedback from organization members to recognize the gap between the current status and the new vision and to implement a shared vision.
System Connection	The degree to which an organization has open systems to connect the organization to its external and internal environment to help people to see the impact of their work on the entire organization and think globally.
Strategic Leadership	Refers to organizational leaders' competence to think strategically and energize organization to create change, and develop collective vision to help organization members to move in the new direction.

of participants were lecturers (52.5%) who had masters degree (89.4%), while 58.3% were part-time masters students.

DLOQ developed by Watkins and Marsick (1997) consists of 43 items in a 5-point Likert Scale range from "1" as "almost never" to "5" as "almost always was employed to measure lecturers' perception on seven learning organization dimensions. The original questionnaire in English language was translated into Persian language using the forward-back translation approach (Chen, Holton & Bates, 2005). To validate the DLOQ in both English and Persian, academics (how many) and lecturers (how many) with the experience in research in the field of extension and continuing education, educational administration and organizational behavior were employed in Malaysia and Iran. They confirmed the appropriateness of validity of DLOQ for conducting in TVCs. A reliability test (pilot test) was performed on the DLOQ. The reliability coefficient, Cronbach's alpha for seven learning organization dimensions was from .80 to .87, indicating that the reliability of this instrument was relatively high, and thus suitable for this study to be carried out. (confirm with studies to show that this Cronbach alpha value is reliable).

FINDINGS

To determine respondents' perception on learning organization dimensions, the possible mean scores based on five point Likert Scales were categorized into three levels of low (1-2.33), moderate (2.34-3.66) and high (3.67-5). It is based on class interval width. It is the difference between the lower endpoint of an interval and the lower endpoint of the next interval according to the next formula. Class interval width = highest scale value – lowest scale value / number of categories. Class interval width = (5-1)/3 = 1.33. Thus, 1-2.33 = Low, 2.34 – 3.66 = Moderate; and 3.67 – 5 = High (Nunnally & Bernstein, 1994). In addition, descriptive analysis such as mean, standard deviation and frequency were employed. Table 2 depicts the results of descriptive analysis as required by Research Question 1 as follows:

What is the level of lecturers' perception of learning organization dimensions in TVCs?

Table 2 displays TVCs lecturers' perception on the level of learning organization dimensions among their colleges. The results indicate that lecturers' perception on continuous learning, dialogue and inquiry and strategic leadership are at high level, whereas their perception on collaboration, embedded system, empowerment, and system connection are at moderate level. Findings indicated that lecturers' perception in dialogue and inquiry was high with a mean rating of M=3.78 and SD = .41, whereas 166 (56.3%) of lecturers rated high on this dimension, 129 (43.7%) moderate and none rated low. Similarly, the results showed that lecturers' perception in strategic leadership was high with M = 3.72 and SD = .49, whereas 148 (50.2%) of lecturers rated high and 147 (49.8%) rated moderate on this dimension.

Likewise, findings revealed that lecturers' perception in continuous learning was high with a mean rating of M = 3.69 and SD = .46, whereas 169 (57.3%) of lecturers rated high, and 126 (42.7%) rated moderate on this dimension. The findings also indicated that four out of seven dimensions of learning organization including: empowerment (M = 3.53, SD = .53), collaboration (M = 3.47, SD = .57), embedded system (M = 3.43, SD = .55) and system connection (M = 3.40, SD = .53) were at moderate level. None of the dimensions were rated low. Overall, 189 (64.1%) of lecturers rated moderate, 106 (35.9%) rated high and none rated low with M = 3.58, SD = .28 on overall learning organization dimension. These results indicate that TVCs' lecturers perceive

learning organization dimensions among their colleges at high and moderate levels. The level rating from moderate to high in the study indicate that these seven dimensions are carried out and practiced in TVCs and lecturers are not alien with the concept of learning organization dimensions.

Independent sample t-test was utilized to answer Research Questions 2 to 4 as follows:

Is there any significant difference in perception of learning organization dimensions by lecturers based on employment type?

The results of t-test in Table 3 reveal that there are significant differences between full time and part time lecturers' perception in learning organization dimensions. Data

TABLE 2
Descriptive Statistics of Learning Organization Dimensions

Descriptive Statistics	Mean	SD	Frequency		
			Low (43-100)	Moderate (101-158)	High (159-215)
Continuous Learning	3.69	.46	--	126 [a] (42.7) [b]	169 (57.3)
Dialogue and Inquiry	3.78	.41	--	129 (43.7)	166 (56.3)
Collaboration	3.47	.57	9 (3.1)	189 (64.1)	97 (32.8)
Embedded System	3.43	.55	18 (6.1)	200 (67.8)	77 (26.1)
Empowerment	3.53	.53	--	190 (64.4)	105 (35.6)
System Connection	3.40	.53	10 (3.4)	205 (69.5)	80 (27.1)
Strategic Leadership	3.72	.49	--	147 (49.8)	148 (50.2)
Overall Learning Organization	3.58	.28	--	189 (64.1)	106 (35.9)

Note: Low (1-2.33), Moderate (2.34-3.66), High (3.67-5), [a] = Frequency/Count, [b] = Percent

indicated that full time lecturers had higher mean scores in learning organization dimensions than part time lecturers in TVCs in Iran. Thus, it can be concluded that full time lecturers' perception was different from part time lecturers' perception on learning organization dimensions in TVCs.

Table 4 displays analysis of learning organization dimensions based on academic rank as required by Research Question 3 as follows:

Is there any significant difference in perception of learning organization dimensions by lecturers based on academic rank?

Table 4 shows significant differences in lecturers and teachers' perception towards learning organization dimensions. Lecturers had higher perception level than teachers in all learning organization dimensions. The

significant differences between lecturers and teachers in all learning organization dimensions signify that academic rank was an appropriate indicator to make difference between lecturers and teachers in TVCs.

Table 5 depicts the analysis of learning organization dimensions towards education level as required by Research Question 4 as follows:

Is there any significant difference in perception of learning organization dimensions by lecturers based on Education Level?

T-test analysis in Table 5 reveals that there were significant differences between perceptions of doctorate and master degree holders and below in relation to learning organization dimensions in TVCs. Doctorate lecturers showed higher mean scores than master and below degree holders in TVCs,

TABLE 3
Means Comparison of Learning Organization Dimensions by Employment Type

Learning Organization Dimensions	Employment Type	N	Mean	SD	t-value	*p*
Continuous Learning	Full Time	123	3.83	.46	4.605	.001
	Part Time	172	3.60	.42		
Dialogue and Inquiry	Full Time	123	3.97	.37	7.259	.001
	Part Time	172	3.64	.38		
Collaboration	Full Time	123	3.60	.57	3.321	.001
	Part Time	172	3.38	.56		
Embedded System	Full Time	123	3.54	.59	2.633	.009
	Part Time	172	3.36	.51		
Empowerment	Full Time	123	3.63	.53	2.699	.007
	Part Time	172	3.46	.51		
System Connection	Full Time	123	3.55	.52	4.275	.001
	Part Time	172	3.29	.51		
Strategic Leadership	Full Time	123	3.89	.49	5.175	.001
	Part Time	172	3.60	.46		

P<.05   df=293   SD = Standard Deviation

TABLE 4
Means Comparison of Learning Organization Dimensions by Academic Rank

Learning Organization Dimensions	Academic Rank	N	Mean	SD	t-value	*p*
Continuous Learning	Lecturer	155	3.89	.42	9.074	.001
	Teacher	140	3.46	.38		
Dialogue and Inquiry	Lecturer	155	3.95	.38	8.260	.001
	Teacher	140	3.59	.35		
Collaboration	Lecturer	155	3.63	.59	5.025	.001
	Teacher	140	3.30	.51		
Embedded System	Lecturer	155	3.53	.60	3.280	.001
	Teacher	140	3.32	.48		
Empowerment	Lecturer	155	3.63	.54	3.523	.001
	Teacher	140	3.41	.50		
System Connection	Lecturer	155	3.52	.55	4.120	.001
	Teacher	140	3.27	.48		
Strategic Leadership	Lecturer	155	3.89	.48	6.571	.001
	Teacher	140	3.54	.43		

$P < .05$ df=293   SD = Standard Deviation

TABLE 5
Means Comparison of Learning Organization Dimensions by Education Level

Learning Organization Dimensions	Education Level	N	Mean	SD	t-value	*P*
Continuous Learning	Doctorate	34	4.01	.42	4.435	.001
	Master and below	261	3.65	.44		
Dialogue and Inquiry	Doctorate	34	4.00	.36	3.515	.001
	Master and below	261	3.75	.40		
Collaboration	Doctorate	34	3.77	.52	3.296	.001
	Master and below	261	3.43	.57		
Embedded System	Doctorate	34	3.67	.62	2.683	.021
	Master and below	261	3.40	.53		
Empowerment	Doctorate	34	3.92	.49	4.708	.001
	Master and below	261	3.48	.51		
System Connection	Doctorate	34	3.67	.49	3.211	.001
	Master and below	261	3.36	.53		
Strategic Leadership	Doctorate	34	4.02	.46	3.888	.001
	Master and below	261	3.68	.48		

$P < .05$ df=293   SD = Standard Deviation

indicating that doctorate lecturers, though their number is less than master degree holders and below, spend more times to participate in practicing of learning organization dimensions than master degree holders and below.

DISCUSSION

The findings revealed that lecturers had a moderate to high level of understanding of what the learning organization dimensions concepts might mean. The DLOQ results obtained from self rating indicated that lecturers' perception in continuous learning, dialogue and inquiry and strategic leadership dimensions were at high level, whereas their perception in collaboration, embedded system, system connection and empowerment were at moderate level, suggesting that these dimensions could be further improved. In addition, the findings showed that lecturers' perception in overall learning organization dimensions was at moderate level.

Dialogue and inquiry dimension was rated at high level indicating that lecturers give open and honest feedback to each other, listen to others before speaking, treat each other with respect, spend time building trust with each other and are encouraged to ask why regardless of the rank in TVCs. The high level rating in dialogue and inquiry pointed to the significant role played by educational administrators and leaders in promoting a learning culture at the individual level by providing an open atmosphere of talking, communicating and questioning among lecturers in TVCs. It also

implies that establishing a climate in which lecturers felt safe to offer an opinion and to have an expectation that their opinions would be valued, was a significant key factor and the role of administrators seemed to be significant in this process. This result was in line with Asadi *et al.*, (2009) findings in Iran among physical educational professionals, Zahabioun and Yousefy's (2006) results and Kumar's (2005) findings in Malaysia, whereas contradicting with Dirani's (2007) and Wang's (2005) findings.

Strategic leadership dimension was the second highest, indicating that educational leaders of TVCs had charismatic power, mentor and coach, give people control over the resources they need to accomplish their work and are authoritative in creating learning opportunities by preparing a fine knowledge management system. The high level also indicates that educational leaders and administrators have a clear understanding of their responsibility to act as facilitators and supporters of learning in TVCs. This result was supported by Zahabioun and Yousefy's (2006) findings in Iran, and Pimapunsri's (2008) findings in Thailand.

Similarly with dialogue and inquiry and strategic leadership, continuous learning opportunities was rated at high level, indicating that lecturers in TVCs have the opportunity of discussing mistakes, share knowledge and skills with their colleagues, help each other learn, consider problems as opportunities for learning, supported and rewarded financially for learning. In addition, it can be concluded

that communication among staffs, feedback, and active listening are encouraged, and prioritized in comparison to hierarchy and status. The high level rating in continuous learning indicated that there was general consensus that learning culture was supported by educational administrators as long as the learning was seen to bring benefit to the colleges. Zahabioun and Yousefy's (2006) findings, and Pimapunsari's (2008) results were similar to the continuous learning results in this study.

System connection dimension was revealed to be at moderate level according to the lecturers' perception in TVCs. System connection reflects global thinking, connecting the organization to its internal and external environment, reciprocal communication at all levels among lecturers, balancing between work and family affairs, and working to meet mutual needs. Watkins and Marsick (1996) stated that training global leaders, providing virtual networks, performing employee opinion surveys, and providing computer data bases are various strategies that can be used to connect the institutions to the environment. Asadi *et al.*, (2009) also stated that being low at system connection maybe the result of not connecting with internal and external professional communities to meet mutual needs.

Lecturers' perception on embedded system was at a moderate level. According to Watkins and Marsick (1993), creating new systems will have a basic contribution towards providing continuous learning opportunities in organizations. Krishna and Casey (2008) also stated that social contacts

through shared practices in organizations will create a strong bonding among organization members. Accordingly, the moderate level of embedded system in TVCs can be the result of not having enough tools and technology in knowledge management, limitation in paying attention to establishing knowledge networks and communities of practice, few opportunities of sharing information and not having enough facilities for lecturers to use their skills and knowledge. Dirani's (2007) findings in banking sector in Lebanon and Wang's (2005) results in China are also consistent with the results of the current study.

It was revealed that empowerment dimension was at moderate level. Kanter (1993) based on organizational empowerment theory, stated that employees' empowerment towards a collective vision will provide opportunities for learning which in turn influence employees' work, attitudes and behaviors. Chen and Chen (2008) also stated that employees' empowerment can occur as a result of participating employees in decision making process. In addition, O'Nail (2003) and Watkins and Marsick (1993) have remarked that lack of necessary coordination among different parts of the organization and existence of an overcautious atmosphere that leads to conservative behaviors can affect empowering people towards a collective vision negatively. Regarding the empowerment dimension, Dirani (2009), Wang (2005), Asadi *et al.*, (2009) and Veisi (2010) has reported results similar to the current study.

The results regarding collaboration revealed that lecturers have rated this dimension at a moderate place. Watkins and Marsick (1996) stated that collaborative atmosphere of learning in organizations foster and develop job related skills. The collaborative efforts cause each member of the organization shares knowledge and experience with each other. The findings pertaining collaboration are in line with White and Weathersby's (2005), Bui and Baruch (2010) statements that academics are highly individualistic in their work and seek to reach personal development. The findings of this study were also in line with governing culture in higher education organizations and the society in Iran. Based on a cross-cultural study, Alavi and McCormick (2004) stated that Iranian organizations face some problems in team learning, system thinking and developing shared visions. They stated that some aspects of management theories and models which their roots are in highly developed countries may not be completely in line with cultural characteristics of other countries such as Iran (Alavi and McCormick, 2004). What emerged from this study was a picture of TVCs that were utilizing learning to develop their competitive edge, remain dynamic, create knowledge and skills, and integrate work with learning to attach lecturers to colleges psychologically.

Since there have been few researches studying how demographics can impact learning organization dimensions, whether demographic compositions characterize learning organization dimensions or not remains unknown (Tseng, 2010; Wang, 2005). The results indicated that there were significant differences in lecturers' perception towards learning organization dimensions based on type of employment, education level and academic rank. This indicates that lecturers had different understanding pertaining learning organization dimensions in TVCs.

In terms of type of employment, there were significant differences between full time and part time lecturers' perception in all learning organization dimensions. In all comparisons, full time lecturers scored the highest. Mean score of full time lecturers in all dimensions were higher than mean score of part time lecturers in all dimension of learning organization. It signifies that full time lecturers pay more attention to the activities performed regarding learning organization dimensions in TVCs in Iran. Another possibility is related to the fact that part time lecturers are not permanent employees that may affect their perception regarding learning organization dimensions in TVCs. This phenomenon indicates that part time lecturers have the strongest sense of the need to improve learning organization dimensions.

For academic rank, there were significant differences between lecturers' perception of being in the position of lecturer and teacher in learning organization dimensions in TVCs in Iran. Those who were lecturers showed higher perception level in comparison to those who were in position of teacher in seven learning organization dimensions. The results indicated that the higher the level

of academic rank, the more mean scores regarding the perception level of learning organization dimensions.

For education level, the significant differences between perception of lecturers with degree of doctorate and master and below connote that doctorate lecturers may have higher education contributes to one's understanding of the value of learning organization dimensions than master and below degree holders in TVCs. Lecturers in higher level of education obtain higher perception on learning organization dimensions than lecturers in lower level of education. It was revealed that education level was a significant indicator in learning organization dimensions between doctorate and master and below degree holders in TVCs. The result of this study regarding education level is in line with Tseng's (2010) findings in Taiwan, whereas Lim's (2003) findings in private organizations in Korea were inconsistent with the results of this study. These results revealed that perception level of learning organization dimensions was varied according to education level, type of employment and academic rank.

CONCLUSION AND IMPLICATIONS

The study indicated that lecturers were clearly aware of the learning organization dimensions and generally saw the learning organization evident in their colleges through the provision of opportunities to increase their knowledge and skills. On the other hand, it was evident that lecturers were quite content with their working lives. The study provided empirical and theoretical information for educational administrators and leaders to prepare educational programs, standards and other professional development activities. It also helps them develop and sustain a culture conducive to learning and adapt it as a means of survival and success. The findings of this study are valuable sources for educational administrators, leaders and human resource developer professionals to understand the present status, differences and relationships in learning organization dimensions in TVCs. By providing learning opportunities in the light of learning organization dimensions, educational administrators send a message to lecturers that TVCs care about them and support them.

The results revealed that respondents in the position of full time, doctorate and lecturer had higher perception of learning organization dimensions than part time lecturers, master and below degree holders and teachers in TVCs. This indicates that educational administrators should try to preserve and further develop the present status of full time, doctorate and lecturers in TVCs by providing them opportunities to attend such events as courses, seminars, conferences and workshops. In addition, to enhance and develop perception of part time lecturers, teachers and master and below degree holders pertaining learning organization dimensions in TVCs, educational administrators should provide them programs such as training, meetings, project teams, symposiums and workshops.

As respondents in full time, doctorate level and lecturer showed the strongest sense of improving the learning organization dimensions; it can be inferred that demographic factors can have different influences on seven learning organization dimensions and need to be further investigated. For researchers, this study contributes to the understanding of the learning organization theory locally, nationally and internationally and further research. Furthermore, it also provides a better understanding of learning organization dimensions in educational context based on personal variables, based on which, more programs can be developed. The applicability of DLOQ originally developed in western countries indicated that the Iranian contexts and western contexts share a high level of similarity. This study also proved that the learning organization dimensions are applicable and understandable by lecturers in TVCs.

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The Effect of Exposure to Cartoons on Language Proficiency

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ABSTRACT

Today, access to various audiovisual programs such as cartoons has become very easy through the development of audiovisual technologies such as CD and DVD players. In the same line, many studies have emphasized on the psychological values of utilizing cartoons in language learning. Accordingly, the present study aims at investigating the effect of exposure of cartoons on language proficiency at the intermediate level. To this end, a language proficiency test was administered to 90 language learners. Then, a smaller population of 40 language learners were selected as intermediate language learners and randomly divided into two groups, i.e. group one and group two. During the experiment, group one was instructed via the use of cartoons. In contrast, group two was instructed by a sample of selected audiovisual programs rather than cartoons. At the end of the study which lasted for 6 weeks, both groups took another sample language proficiency test to find out whether or not if any changes happened regarding their language proficiency. The results of the post-test showed that the first group participants who had exposure to cartoons had lesser language proficiency improvement in comparison to the second group of participants who had exposure to non-cartoons programs. This proved that the quality of the language input should be given initial importance.

Keywords: Exposure, Cartoons, Language proficiency

INTRODUCTION

There are many internal as well as external factors which influence second language acquisition (SLA). Among them, the language input that learners receive in SLA is one of the external factors which plays a fundamental role. According to Ellis (2008),, "theories of SLA attach

different importance to the role of input in language acquisition process but they all acknowledge the need for language input" (Ellis, 2008, pg.243).. Considering the fact that some sort of language input is necessary to acquire the language, the ever-lasting developments in audiovisual technologies has proven to be very effective in providing the language learners with easy access to various audiovisual programs which can be incorporated in various language learning situations (Bahrani & Tam, 2012). In fact, various types of audiovisual mass media programs brought by different technologies have the potential to provide the necessary language input for language learning in both English as a Foreign Language (EFL) context and English as a Second Language (ESL) context. These types of programs are considered as sources of authentic language input which have the potential to indirectly involve the language learners in the language learning process.

The use of authentic language input through authentic materials in foreign/ second language learning has a long history. For example, Henry Sweet (1899, cited in Gilmore, 2007) is considered as one of the first linguists who utilized authentic texts because he was aware of their potential advantages over contrived materials.

Taylor (1994) defined authentic language material as any material in English which has not been specifically produced for the purpose of language teaching. Gilmore (2007) considered authentic language materials as the language conveying a real message which is produced by a real

speaker or writer. In the same line, Nunan (1999) defined authentic language materials as spoken or written language material that has been produced in the course of real communication and not specifically produced for the very purpose of language teaching.

There are varieties of authentic teaching sources and materials available to EFL/ ESL teachers to utilize different materials for different needs for various teaching situations in formal and in informal language learning settings. While social interaction as a source of authentic language input is not available in EFL context, other sources of authentic language input are available in both EFL and ESL contexts. In this relation, desktop technology such as computers and non-desktop technologies such as through the use of TV and radio can provide easy access to authentic audiovisual language input for SLA development in both EFL and ESL contexts.

The review of the literature on the integration of different audiovisual mass media programs that provide authentic language input for language learning highlight the pedagogical value of such materials. As Gebhard (1996), p. 183) put forth, there are "many sources of authentic language materials from various audiovisual sources such songs, cartoons, news broadcasts, movies, and documentaries that language teachers and learners can use for language learning purposes" (Gebhard 1996, p. 183).

In the same line, many studies have highlighted the pedagogical values of

employing various audiovisual mass media programs such as news broadcasts, movies, songs, and cartoons to provide authentic language input for language learning. Among them, news broadcasts have been observed to boost listening comprehension and speaking proficiency as well as help language learners build up their vocabulary over time (Bahrani & Tam, 2011; Baker, 1996; Brinton and Gaskill, 1978; Poon, 1992). Movies, songs, and cartoons, for example, have also been considered to be pedagogically valuable authentic audiovisual language materials for language learning because they reduce the affective filter and increase motivation (Aida, 1994; Chapple & Crutis, 2000; Clark, 2000; Doring, 2002; Heffernan, 2005; Lowe, 1995; Ryan, 1998; Schoepp, 2001; Trapp, 1991). However, more particularly, the studies that have considered cartoons as a source of authentic language input have focused on the psychological aspects of employing such materials in language learning (which source). Indeed, the effect of exposure to cartoons on language learning has not been investigated empirically.

In the view of the above, the present research aims at shedding light on the studies which highlight the use of different audiovisual programs, particularly cartoons, as authentic sources of language input for SLA. More specifically, the present research will provide empirical evidence on the effect of exposure to cartoons as a source of authentic language input on language proficiency.

CARTOONS IN LANGUAGE LEARNING

The application of various authentic programs such as news, movies, songs, and cartoons from a wide range of audiovisual technologies such as satellite or conventional TV to provide the necessary language input for SLA have attracted increased interest among researchers since the 1970s. Although, the review of the related literature indicates that most of the researches around the use of audiovisual news for SLA were anecdotal than experimental, a few researchers such as Brinton and Gaskill (1978), Baker (1996), and Poon (1992) provided empirical evidence of the role of exposure to news on improving listening skills. The results of these studies were based on the findings from pre-post tests which were administered to an experimental and a control group of language learners where the experimental group had exposure to news whereas the control group did not. More recently, Bahrani and Tam (2011) also found out that exposure to news as a genre specific listening material compared to miscellaneous listening materials reinforces speaking proficiency more.

Without providing empirical evidence, Ryan (1998), Chapple and Crutis (2000), Heffernan (2005) also considered movies as authentic and appropriate teaching materials which are intrinsically motivating for SLA. Aida (1994), Lowe (1995), Schoppe (2001), and Trapp (1991) have also proposed songs in the foreign/second language classroom to lower anxiety and increase motivation, provide physiological benefits, guide

lesson planning and practical classroom, familiarize the language learners with dialectal variations, and enhance cultural awareness and sensitivity.

The pedagogical value of cartoons as an authentic source of language input has been the focus of few studies . In an anecdotal study conducted by Clark (2000), it was underscored that cartoons can engage the attention of the learners and present information in a non-threatening atmosphere. Moreover, cartoons have the potential to push thinking processes and discussion skills (Clark, 2000). Another study was carried out by Doring (2002) focusing on the effect of exposure to cartoons on language learning. Reflecting on his own experience of utilizing cartoons, Doring (2002) underscored the point that cartoons can encourage thinking processes and discussion skills. Cartoons can also engage the attention of the learners and present information in a non-threatening atmosphere. To Doring (2002), the language learners who had exposure to cartoons could produce oral answers that were very proactive and interesting in various discussions held in the classes. In addition, the discussions were linguistically rich and the students had high confidence. It seems that the high confidence that the language learners acquired is due to exposure to the cartoons which create low affective filter atmosphere for learning.

In the same line, Rule and Ague (2005) carried out a research on students' preferences to use cartoons in language learning. Similar to songs, cartoons are preferred because they create low affective filter atmosphere which cause high degree of motivation. The high motivation achieved through exposure to cartoons is claimed to improve the memory of the language learners when they try to make connection between the new materials and the prior knowledge through analogy in a comfortable atmosphere (Rule & Ague, 2005). Rule and Ague also claimed that students who use cartoons can improve different language skills and achieve higher test scores. However, they did not further clarify which language skill(s) can be enhanced through exposure to cartoons.

In short, the point to be highlighted is the lack of empirical evidence to support the pedagogical values of cartoons for language development. In fact, the limited number of studies on the use of cartoons in language learning classes has highlighted the pedagogical value of cartoons in an anecdotal manner. In other words, they have emphasized the psychological aspects of utilizing cartoons in language learning without providing empirical evidence of the effect of the pedagogical values of cartoons.

RESEARCH QUESTIONS

The present study was set to answer the following research questions:

1. To what extent does exposure to cartoons as a source of authentic language input improve intermediate language learners' language proficiency?

2. To what extent does exposure to miscellaneous programs as a source of authentic language input improve intermediate language learners' language proficiency?

METHODOLOGY

Participants

The participants involved in this research comprised 40 intermediate language learners, both males and femalesaged between 22 to 31 selected from the Islamic Azad University in Iran, which is an EFL context. The 40 intermediate participants were selected from a population of 90 language learners majoring in TEFL on the basis of the scores which they obtained from a sample language proficiency test.

Instruments and materials

The first instrument was a sample IELTS language proficiency test which was used as a pre-test. The second instrument which was used as a post-test was another sample language proficiency test from IELTS. Both sample IELTS language proficiency tests were verified to be parallel and reliable before the study was carried out.

Regarding the materials that were used, it should be noted that two kinds of different audiovisual materials in the form of CDs were prepared and utilized. The first material was a collection of 10 hours of various cartoons such as Shrek 1, 2, 3, Toys, and Ice Age. The second material was a collection of 10 hours authentic programs rather than cartoons including various segments of news, movies, documentaries and songs.

Procedure

This research was conducted based on pre-test and post-test design. The first step to take, before the participants were selected, was to verify that the two sample IELTS tests were parallel. Parallel tests are two tests of the same ability that have the same statistical means and variances with the same psychometric indices such item difficulty, item discrimination, reliability, validity when administered to the same group with a short interval. Although we may never have strictly parallel tests, we treat the two tests as parallel if the differences between their means and variances are not statistically great (Bachman, 1990, p. 168).

In view of that, both sample IELTS language proficiency tests were administered to 10 trial language learners with an interval of 2 days. Then, the means and the variances of both tests were calculated separately. The results of the statistical analysis of the both tests are shown in the following table.

According to the statistical analysis of the data obtained from the administration of both tests, the mean score for the first test was 5.57 and the mean score of the second test was 5.43. Furthermore, the variance of the first test was 0.51 and the variance for the second test was 0.54. This implies that the means and the variances of both tests were almost the same. Accordingly, both tests were verified to be parallel.

The second step was to verify the reliability of the two parallel IELTS language proficiency tests. Utilizing the scores obtained from the administration of both IELTS tests in the first step of instruments verification process, the researchers employed parallel tests method to verify the reliability of the two sample parallel IELTS tests. The results of the statistical analysis of

the reliability coefficients of the two parallel tests are shown in the following table.

From the results of the statistical analysis, the correlation between the two parallel tests was positive and significant. Moreover, the reliability coefficients of the two tests were calculated as 0.73 and 0.80.

After verifying both tests to be parallel and reliable, one of them was administered to 90 language learners and 40 participants who scored 5 or 5.5 out of 9 were selected as intermediate language learners. The 40 language learners were then randomly assigned to group one and group two with equal number of participants.

Throughout the experiment which lasted for 6 weeks (4 hours a week) in two separate conversation classes run by the same instructor, the experimental group was instructed with cartoons, while the the control group was instructed with miscellaneous programs.

During the experiment and for every session, group one was asked to watch and listen to a sample from the cartoon collection which was selected by the instructor outside the classroom. Participants were required to write a summary of whatever was heard. Later, when the class met, the instructor played the selected part of the cartoon again and the participants were required to participate in a follow up discussion. The same was done with the second group with the miscellaneous programs.

After 6 weeks of exposure, all the participants took the second sample language proficiency test from IELTS as a post-test to find out whether there was any change in their language proficiency.

RESULTS AND DISCUSSION

To provide answers to the research questions, the data obtained from the administration of pre-post tests to group one and group two

TABLE 1
Descriptive statistics related to the administration of the two tests to the same group

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
First Test	20	4.00	6.00	5.57	0.758	0.51
Second Test	20	4.00	6.50	5.43	0.745	0.54
Valid N	20					

TABLE 2
Reliability Statistics related to the two parallel tests

Common Variance	0.46	
True Variance	0.49	
Error Variance	0.06	
Common Inter-Item Correlation	0.83	
Reliability of Test 1 (Cronbach's Alpha)	0.73	N=10
Reliability of Test 2 (Cronbach's Alpha)	0.80	N=10

were compared statistically by means of paired samples t-tests. The following tables show the statistical analysis of group one and group two participants' pre-post tests scores.

In relation to group one performance in the pre-post tests, it should be mentioned that the mean score of the participants in group one in the pre-test was 5.04 out of 9. This mean score rose to 5.09 in the post-test which indicates the fact that a minor progress was made in their performance. The t-test result obtained was not significant (t=-0.754, df=19, paired sample, one-tailed, ns.) which indicates that the improvement was not significant.

In relation to the data obtained from the pre-post tests for group two, the mean score in the pre-test was 5.03 out of 9 and in the post-test was 5.67 out of 9. This progress can be interpreted as improvement. However, in order to find out if this positive change in the mean score can be interpreted as a significant improvement or not, a statistical analysis of t-test should be conducted for the scores of group two. The result of the t-test that was performed shows that the difference is significant (t=-3.764, df=19, paired sample, one-tailed, p<0.01).

The reason behind the difference in the language proficiency development of both groups may be related to the quality of the language input embedded in the type of audiovisual mass media programs which they had exposure to during the experiment. In relation to the first group of participants' insignificant improvement in language proficiency through exposure to cartoons, the point can be mentioned that although cartoons are considered to be pedagogically valuable sources of authentic language materials which have the potential to be utilized for language learning (Clark, 2000; Doring, 2002; Rule & Ague, 2005), the type of language input which is embedded in cartoons is largely modified or simplified to ease comprehension. However, while comprehending modified or simplified language input of cartoons requires less cognitive processing for intermediate

TABLE 3
Descriptive statistics related to group one pretest and posttest results

Groups	N	MEAN	SD	t-test
Group one pretest	20	5.04	0.43	_0.754*
Group one posttest	20	5.09	0.65	

*T-observed= -0.754 T-critical=1.729 T-observed is smaller than t-critical

TABLE 4
Descriptive statistics related to group two pretest and posttest results

Groups	N	MEAN	SD	t-test
Group two pretest	20	5.03	0.58	_3.764
Group two posttest	20	5.67	0.49	

T-observed=-3.764 T-critical=1.729 T-observed is bigger than t-critical

language learners because of the type of data which is presented in a way to facilitate comprehension, it does not contribute a lot to SLA.

According to the observations of the researchers from both groups, the participants in the first group showed great interest in watching the selected cartoons and participated in the follow up discussions about the content. Moreover, they had fewer problems in comprehending the language embedded in the dialogues of the cartoons. This could be due to the fact that the language, and more particularly the vocabulary items, which are used in cartoons are not specialized. Nevertheless, the type of language input which the first group participants had exposure to might not have included much language data as opposed to the current level of the intermediate language learners to contribute to language proficiency development. According to White (1987), when an aspect of the language input is comprehensible, the acquisition of the missing structures would not occur. In fact, the incomprehensibility of some aspects of the given language input to the language learners draws their attention to specific features to be acquired.

In contrast, the participants in the second group who had exposure to various types of audiovisual programs, could improve their language proficiency to a significant level although they expressed some difficulties in relation to comprehending the language input which was presented to them. Non-cartoons materials such as news and movies include more unmodified language input

which required more input processing for comprehension. Cartoons, on the other hand, include more modified input which facilitates comprehension rather than causing language acquisition. As a matter of fact, comprehending other types of audiovisual programs rather than cartoons may require much more input processing. However, these types of materials include unmodified input which can contribute much more to SLA than modified input.

CONCLUSION

Various types of audiovisual programs such as cartoons, movies, songs, and documentaries have proved to be effective in increasing the motivation of the language learners. It is also believed that these types of programs are rich sources of authentic language input. However, some of these materials may not include the necessary or enough language input to contribute to language proficiency development.

In view of the above, the present research showed that intermediate language learners do not benefit a lot from exposure to cartoons. In contrast, they can benefit more from exposure to non-cartoon materials. One of the reasons behind the insignificant improvement of those intermediate participants who had merely exposure to cartoons may be related to the amount of language input which is embedded in cartoons. Cartoons include a type of language input which may not contribute to intermediate level language learners' language proficiency enhancement.

LIMITATIONS OF THE STUDY

This study examined the effect of exposure to cartoons as a source of authentic language input compared with the exposure to miscellaneous audiovisual programs rather than cartoons on language proficiency of intermediate language learners. Empirical evidence in the form of class observations in the two groups and student opinions on other types of audiovisual programs could be the investigations for future studies. In addition, the non-cartoons programs grouped together for this comparative study is movies, songs, news and documentaries. Other Studies which focus on other forms of non-cartoons programs may offer different results. The participants of the present research were intermediate language learners. Therefore, the findings cannot be generalized to low or advance levels language learners. In fact, the need to conduct the future studies with low or advanced levels language learners is warranted. Finally, another limitation of the study that should be highlighted is related to the language input of the two types of materials used. Although the instructor used the same methodology for both classes, first by watching the 'input', summarizing and then participating in the follow-up discussions, there was no control on the 'input' in terms of similarity of theme and level of difficulty. Accordingly, further studies can be conducted using various types of audiovisual programs which include almost the same difficulty level of language input.

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Lifelong Learning: The Experiences of Malaysian School Teachers

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ABSTRACT

Lifelong learning has been closely related to the development of human capital from an economic perspective. The focus of this research study is the social and cultural motivating and facilitating factors that might have contributed to the life long learning experience as perceived by the interviewees. Fifteen participants, who have worked as educators or who are currently teaching in various educational settings, which include primary, secondary and tertiary levels, took part in this study. The themes that emerged, from a phenomenological in-depth qualitative interview approach, were analyzed using the constant comparison method. The findings reveal that the process of life long learning experience encompasses various stages, namely dissatisfaction, reflection, decision making, overcoming obstacles, and on-going growth. Both system support from a wider context and micro family support were found to be essential. Various facilitative factors from the local culture were revealed. A model of lifelong learning for school teachers was identified.

Keywords: Lifelong learning, lifelong learning experience, lifelong learning model, school teachers, motivation

INTRODUCTION

Higher tertiary education has been identified worldwide as an engine of economical growth (Brown & Lauder, 2003). Malaysia, aiming to become a developed and high income nation by the year of 2020, views education as a vital means to increase its human capital, thus higher education has been regarded as "catalysts for industry transformation" (PEMANDU, 2010). High amount of funds have been invested in education and it seems that a high return was obtained. The education sector has contributed close to RM27 billions or 4 percent of it Gross National Income in 2009 (Economic Transformation Programme, 2010).

However, one of the main concerns in the higher education sector in Malaysia is the mismatch between education and the skills needed to meet the increasing demands of a forever changing environment (Kok & Tan 2011). Sulaiman and Burke (2009) found that skills development is needed to address the issues of unemployment among Malaysian graduates. Therefore both formal and lifelong education are needed in the development of human capital in order to keep skills relevant and the workforce competent. In order to facilitate the continued acquisition of knowledge and development of those skills in the world of work, the implementation of the concept of lifelong learning is essential, being beneficial for the development of individuals as well as society (Field, 2005).

Lifelong learning and human capital

This concept of lifelong education was initiated by UNESCO in 1965. Since then the development of adult education began to promote the extension of the education process throughout life. It advocated continuous learning (OECD, 1996), and highlighted the importance of knowledge and skills development throughout life (Europa, 2003). Jacques Delors, the President of the European Commission passionately promoted the "four pillars of lifelong education" in his introduction to "The necessary Utopia" (Delors, 1999). The four pillars of lifelong education include learning to know, learning to do, learning to be and learning to live together. He was of the opinion that education should be

viewed in a broader context which includes interaction with society. As the purpose of education is to draw out "the treasure within" individuals and individuals are living within a community, the wider education such as its philosophy, learning climate, practices and the environment within which the individual learner is located should be viewed as a whole.

The dimension of "To Know" is inseparable from the dimension of "To Do", meaning, true knowledge will lead to behavioural change that should enhance occupational skills in the workforce. Furthermore, the dimension of "To Do" which involves engaging in activities, exhibiting behavioural change is bound to have effect on the dimension of "To Be", the learner's identity and the way he leads his life. This has been further described in terms of the development of personality that would enable a person to act with "greater autonomy, judgement and personal responsibility" (Lee, Chia & Nik Hasnaa, 2011). The emphasis on "To Live Together" reminds us that we live in a diverse society and in order to live harmoniously with others who are different from us, we need to learn to know them and to understand their culture, tradition and values. Lifelong learning has been used not only as a mean to cope with the challenges of a rapidly changing workplace in this post modern world which include "uncertainty, risk and insecurity" (Beck, 1992), but also as a way to teach individuals to live in appreciation of others. This concept encourages learners who engage in the lifelong learning process

to develop a positive attitude to diversity and differences so that they respect the values of pluralism, which is essential in this increasingly "globalized village".

In summary, the above mentioned four pillars of lifelong learning, the ultimate goal of lifelong learning experience, are not merely directed towards the betterment of self but also in the relationship with others.

Lifelong learning in Malaysia

Malaysia has adopted human capital theory as the dominant theory in lifelong learning. Developing human capital was one of the six main thrusts highlighted in the National Education Blueprint 2006-2010, and the human capital theory is closely related to economic development (PEMANDU, 2010; Tenth Malaysian Plan 2011-2015). A study by Ghebllawi and his associates (2011) have confirmed that the development of lifelong learning in Malaysia was largely initiated by the government and closely connected to employability and productivity. This is in line with the development in many countries (Aston & Sung, 2003; Coleman, 2003), where the promotion of lifelong learning is aimed at developing human capital and thus promoting a healthy economy (Peter, 2007). Hence, lifelong education is viewed as an investment for imparting economically useful knowledge and developing skills. However, Peter (2007) reminds us that lifelong learning should not be limited to its instrumental utility. Hence, this human capital theory may not sufficiently describe the notion of lifelong learning experienced by the lifelong learners. Firstly, the benefits

of lifelong learning should not be limited to economic gains, as it is found that lifelong learning has many other benefits such as transformative and empowering effects on individuals (Bennetts, 2003), creation of wisdom, values, compassion and the construction of meanings (Ikeda, 2001). Secondly, there are challenges and obstacles to be overcome when learning is extended throughout life such as coping with fragile learning identities (Gallacher *et al*., 2002). Furthermore, adult learners are often faced with many challenges as they need to balance several social and family responsibilities while engaged in learning. Human capital theory does not address issues such as motivating, or facilitating factors in learning. Therefore this paper focuses on those elements of the external environment that serve as motivating factors that enable or facilitate learning.

Motivating and facilitating factors in lifelong learning

Motivation in learning has progressed from using a behavioural approach to focusing on students' needs (Brophy, 1983), and also on the effect on learning (Nisan & Shalif, 2006). The former uses rewards and punishments, whereas the latter focuses on intrinsic motivation. According to Deci and Ryan (1985, 2000), intrinsic motivation is largely based on the internalization of social expectation which arose from a social learning theory perspective (Bandura, 1977). Intrinsic motivation describes self-determined activities which seem to be innately a quality of a person which is

similar to the construct of 'locus of control' (Heider, 1960).

Maslow (1943) proposed a hierarchy theory of needs to explain human choices of behaviours. His "needs hierarchy theory" includes basic needs at the bottom and self-actualization at the top. According to this theory, taking up learning opportunities, be it formal or informal, could be understood as a means to fulfill the need to cope with challenges from the environment. In a constantly changing society, people tend to seek education in order to upgrade their knowledge and skills in order to cope with the challenges of work. All the above mentioned motivation theories basically have their foundation in the psychology of learners, and are relevant to lifelong learning, because research shows that motivation is essential for learning (Gallo & Ronaldo, 2011).

Cross (1981) proposed a chain-of-response (COR) model for lifelong learning. She held that learning activities should be viewed as series or a chain of behaviours or activities. The assumption of her model was that participants have an inner logic guiding them to various kinds of learning activities, "whether in organized classes or self-directed, is not a single act but the result of a chain of responses, each based on evaluation of the position of the individual in his or her environment" (Cross, 1981, pp. 125). She holds that a seven-stage process of adult learning is initiated from within and it involves the learner's own self-evaluation, attitude, motivation, life transitions, opportunities and barriers, information and decision making.

The model proposed by Cross advances our understanding of lifelong learning as it takes into consideration the internal processes involved, especially the effects of life events and transitions (Merriam & Caffarella, 1999; Ng, 2006).

However, both need approaches such as that of Maslow's and Cross's models have been criticized for being highly psychologically focused and for discounting the effects of the external environment. It was proposed that individuals could function in a lineal and unaffected manner regardless of the influences or impacts of their context or environment. The critics of those psychologically focused models nevertheless believe that because individuals live within a society, the interaction between environment and individuals is important.

Subsequently, building on Cross' model, Ng (2006) developed a complementary lifelong learning model which incorporates several sociological factors. While Cross started with self-evaluation, Ng started with the triggering factors, hence contributing to our understanding of the lifelong learning concept by adding on the antecedent sociological factors. Cross also suggested that self-evaluation is the triggering motivation of lifelong learning, while Ng argued that it is external sociological factors that trigger contemplation of learning. In short, Ng stresses that, since individuals live within a community, the context of the environment in which the individuals are located is important.

While there are many other models in lifelong learning, this paper focuses on the interaction between individuals and

the environmental motivators for learning, therefore Cross's and Ng's model will be preferred. This approach emphasizes the importance of environment and is supported by Vygotsky (1987). However, he also pointed out the need for learners to take responsibility for their own learning. While acknowledging the effect from the environment, individuals play an active role in learning to make it meaningful. It is not the issue of whether the triggering event or the contemplating mind is more important, rather it is the interaction between the two. Therefore, the intrinsic motivation can be triggered or enhanced through a positive response from the environment (Law *et al*., 2009).

OBJECTIVES OF THE STUDY

Drawing on the synthesis of Cross's and Ng's work, this research seeks to understand and discover the following from the participants:

1. The facilitating factors, both the external environmental and the micro perspectives, which might have contributed to their lifelong learning experiences.

2. The participants' common lifelong learning experiences.

METHODOLOGY

This is a qualitative phenomenological inquiry-oriented research study which focuses on in-depth narrative interviews to draw out the participants' stories (Seidman, 2006). Two researchers were involved in the data collection and data analysis processes. The purposive sampling method was used

in recruiting fifteen research participants (seven males and eight females) who had engaged in lifelong learning experiences. The participants were recruited through snowball sampling and their ages ranged from 45to 65 years. All but two of the participants were interviewed two times, half an hour to two hours per participant. Since both researchers were over 50 years old, perhaps the participants felt quite comfortable interacting and mingling with the researchers as they both might be viewed as part of the group members who pursuing lifelong learning. Consequently, it was very easy and natural for them to engage in processes of disclosing their past, and talking about their present and the plan for the future. They were encouraged to explore their inner thinking and feeling through their sharing of their struggles or difficulties as they traveled in their learning journey. The commonality of all of the participants was that they either have worked as educators or are still working at various educational institutions at the time of interview. Two of the participants are retirees. One of the retirees is currently doing his Masters course while the other one had worked as a technician with a government agency and is now a foundation student. The next twelve participants are currently teaching in schools with six of them at elementary level and the other six at secondary level. The last two participants, on the other hand, are university lecturers, though they were secondary school teachers before.

Semi structured questionnaire was used during the interview with the participants. The participants' stories were recorded,

transcribed and further analyzed for common themes. The themes which emerged from this phenomenological qualitative interview approach were analyzed using the method suggested by Creswell (1998). Common themes from the verbatim responses were analyzed and constant comparison method was done in order to focus on the deep and lived experiences provided by the participants.

All the participants had given their consent for the interviews to be recorded as they were assured that their personal identity would be kept anonymous. In their sharing about their past experiences, they discovered how their decisions to participate in this learning journey have made impact in their lives and the lives of their significant others. This narrative approach of storytelling from a retrospective perspective is thus capable of producing social knowledge of qualitative aspects such as the meaning making process and of revealing patterns for the phenomenon under studies, thus "explains what is going on in this world" (Glaser & Strauss, 1967)

Data analysis followed rigorous constant comparison techniques developed by Strauss and Corbin (1998). Excerpts were quoted using the original spoken English of the participants without "tidying up" to retain the voice of the participants.

RESEARCH FINDINGS

Motivating factors and various stages involved in the process of lifelong learning were uncovered.

(A) Motivating factors

Two overarching motivating factors (refer to diagram 1) were discovered in this study. One was the external support from the government (Ministry of Education) and the other was the micro and socio-contexts that have contributed to the participants' lifelong learning endeavors. From the participants' narrative accounts of their learning journeys, it is apparent that lifelong learning would not be possible without the macro supports from the system such as the NKRA scheme and the support of their family members, colleagues and friends.

Many participants mentioned the NKRA scheme, one of the strategic initiatives implemented in line with the 10th Malaysia Plan to upgrade all primary and secondary teachers to degree level. Consequently, there was a massive recruitment of teachers' into various degree programs starting in 2011.

> *"Most teachers are very happy to sign up as long as it is fully supported by the government, so I also signed up. There is an atmosphere of learning and we will car pool to attend course together"*

(Female primary school science teacher, 18 years teaching experience from Skudai, Johor).

Other participants said:

"My parents help me to take care of young children during the weekends when I need to travel to another city to study."

(Female, primary school teacher, of 7 years teaching experience, from Ipoh)

"When I am not around, my husband helped me to oversee and supervise children doing homework, especially for my secondary school son. Without my husband's help, I will be torn apart."

(Female, primary school teacher, of 7 years teaching experience, from Ipoh)

(B) Process oriented with various stages

The findings show that the lifelong learning as experienced by these participants was process oriented with various stages, namely: dissatisfaction, reflection, decision making, overcoming obstacles, and on-going growth. The enabling and facilitating factors that prompted and supported their lifelong learning were revealed. A learning model was derived from these participants.

Stage One: Reflection and Evaluation

The narratives of the participants revealed that their lifelong learning experiences started with life reflection or life evaluation. The event that triggered off changes typically was a deep sense of dissatisfaction and unhappiness at some point of time in participants' lives. It was followed by some evaluation as participants reflected on their life experiences whereby:

(1) they compared their life with other people around them; (2) they felt bored with their work doing the same teaching chores, thus feeling a burning need for a change; (3) they were challenged by the rising demands of their jobs in term of new skills and competencies; (4) they were motivated to pursue a long hidden dream as they had felt that they had completed their family responsibilities or had reached a turning point in life such as retirement.

A few participants disclosed that they had compared their salaries with recent graduates who had just started teaching but are earning a higher salary. To date, the salary scale for non-degree holder teachers is DG29 to DG32, but a degree holder is on scale DG41, which is a big jump in terms of starting salary. Thus, their main motivation was to earn a better salary.

Turner (2002) summarized the experience of employees in the United Kingdom who had taken responsibility for their own learning and development in the phrase, "Lifelong learning equals to lifelong earning" which describes the job market reality that education is a way to social mobility and an increase in one's status and prosperity (Brown & Lauder, 2003).

Besides salary comparison with their colleagues, the demands of changes in workplace also played a role in their decision

to continue their study. The following are some of their statements:

> "We have to update ourselves with abundant of knowledge, the world is changing."

> "I remember I felt really bored of day in and day out repeating the same teaching course. I was 38 years old then. I felt like I won't be able to bear such boring routine schedule if I were to continue teaching for 20 more years. I was looking for a change, something more challenging"

(Female, primary school Home Science teacher, 24 years of teaching experience, from Kulim, Kedah).

One participant signed up for a Masters course after his retirement.

> "When I finally retired, I asked myself, what is next?"

(Male, 58, secondary school teacher, retired after 32 years of teaching, from Ipoh, Perak).

Stage Two: Opportunity and Decision Making

The decision making process for engaging in lifelong learning shows that the participants were motivated after a critical life review and they took action, responding positively to the opportunities available to them. Some of the important factors influencing their decision to return to education were better access to relevant information, good support network from family and friends, and attractive government incentives, and support system.

The financial support scheme from an eco-systemic environment, such as the NKRA scheme from the educational system mentioned earlier, is essential to motivate lifelong learning.

This participant grasped the opportunity available and made the decision to sign up a degree course:

> "I signed up when I was 48 year old because I have to wait till all of my three children were in the secondary schools. Then the following year, new regulation for application of biasiswa (scholarship) had changed and was only available for those teaching staff under the age of 46. I was very lucky. But my colleagues commented that I won't be benefited much after my graduation as I was quite aged then. The whole degree course cost fifteen thousands, but with sponsorship, I only paid $120 per term and $360 per year. I would regret it very much if I never did it. It was like making up for the loss and pursuing my dream."

(Female, 53, primary school teacher with 33 years teaching experience, from Kampar, Perak).

The *biasiswa* mentioned above is a government scholarship provided to enable teachers to upgrade themselves in the

teaching profession. Due to the increase in salary scale from DG32 to DG 41, many of the participants were motivated by the monetary benefit. This particular participant had waited until three of her sons entered secondary schools before taking up this opportunity. With hindsight, she commented she was lucky as it was the last time that 48 year old applicants were accepted, as the policy changed in the subsequent year to limit the applicant's age to 46. Therefore responding quickly to the opportunity available was important.

Stage Three: Supports and Overcoming Obstacles

After the decision making stage, the participants' journey towards the completion of a four year degree course was not easy as all but one of the applicants were still holding full time teaching positions. Their challenges included having to balance their many responsibilities to families, children, and work. Occasionally, they questioned their own rationale for signing up for the courses. There were also times when some felt like giving up. However, the encouragement and support they received helped them to persevere until the completion of their studies.

One participant faced a two hour drive once a fortnight to another university (UTHM in Batu Pahat) which is more than 150 miles from her hometown in Johor Bahru. She felt that she had learnt to organize her time more effectively so that she could prepare lessons for her full-time teaching job, finish the course assignments

on time, arrange for home-stay, and plan for the traveling time. Each course lasted for 10 weekends. She had classes from 8am to 10pm on Saturday, and 8am to 12pm on Sunday. It took perseverance as she usually had to stay up late to do her research and writing.

"But, it really is worth all the efforts. When I compare myself with other colleagues who have young children, who need to struggle to balance between family, career and studies, I consider myself fortunate."

(Female, 40, primary school science teacher, 18 years of teaching experience, from Skudai, Johor).

This realization occurred during her conversations with other colleagues. This participant considered herself to be lucky because she found out that some of her female colleagues with young children had a much harder struggle to manage their time.

It was found that women in this study have to overcome more obstacles to learning than did the male participants. Traditionally women deal with multiple roles and family tasks and therefore face more obstacles to learning.

"A group of supporting coursemates helps a lot. I need not drive since my other colleague is driving, so a group of us car-pool when travelling from Ipoh to Penang on alternate weekends".

Besides overcoming the travel difficulties and sharing domestic tasks, elderly participants struggled with learning to utilize and be familiar with the modern information communication technology (ICT).

> *"As I am in my age of 60, so it was tough for me to use the modern information communication technology (ICT). But the young people in my class helped me a lot."*

> *"It was the younger classmates who did the assignment very fast using computer, but I was really slow."*

Information technology has transformed the way we learn and communicate with others. Elderly people may need help in adapting to these changes.

Soul searching question: "Why am I doing this?"

This is a very difficult question which kept confronting the participants. When facing with unceasing demands and challenges, the participants kept questioning their motives for their commitment to lifelong learning.

> *"I felt guilty sometimes, as I was not there for my children, to supervise them for their school work".*

(Female, 50, primary school Home Science teacher, 24 years of teaching experience).

Negative comments from loved ones made participants think hard. Those moments of reflection and critical soul searching enhanced the decision to study.

> *"My wife once told me 'Stop doing all those study and examination. It is our children turn now and our time is over'. When I finished my MA, she said, 'So what?' Those negative comments motivated me a lot. I wanted to show and let people know, I can do it."*

(Male, 65, Assistant Professor, retired from government sector, administrative position in a private university, from Perak).

Another participant had gone through a process of self doubt. She asked herself some soul searching questions, and eventually she realised that it was her need for self-improvement that sustained her through the difficult process.

> *"It was a great challenge for me. Alternate weekends, I had to attend my tutorial classes which were from 9am to 5pm. There were assignments and examinations. It was very stressful. At times I felt like giving up, and I kept asking myself why do I commit myself to such a task I am no longer young?"*

(Female, 50, Secondary school teacher, 27 years of teaching experience, Ipoh, Perak).

Postponement and temporary exit

Two of the female participants waited for their children to enter secondary school before signing up for a degree course. But by that time they are already in their mid and late forties. A male participant postponed his studies due to work commitments which required him to travel extensively.

> *"I have to postpone the idea of study. After my full retirement I have more time and financially stable I felt that it is time for me to pursue my dream for tertiary education."*

(Male, 65, Consultant in Malayan Employer Association, from Kuala Lumpur).

More female than male participants postponed their studies because of family responsibilities, especially taking care of young children. Postponement among male participants was mainly due to the heavy work load of their jobs and their responsibility for family finances. However, they finally got to return to studies. They described the return to studies as pursuing a "dream".

> *"And now I have more time and financially stable I felt that it is time for me to pursue my dream for tertiary education."*

(Male, 65, Consultant in Malayan Employer Association, from Kuala Lumpur).

> *"I waited till my children have gone to the university. And 3 years ago I decided to uproot my family from Alor Star to Kampar to pursue my dreams for a university education."*

(Male, 65, Foundation student at UTAR, 32 years working experience as technician in Drainage and Irrigation Department of Ministry of Public Services).

One of the participants who was 65 and currently a lecturer in a private university, said he was like "a little boy who always enjoys study" so his dream never ceased and eventually he got his PhD degree when he was 64.

Role model

There were a few participants who felt that they were encouraged by some role models around them and after taking up the learning process, they themselves hoped to be role models for others.

> *"I remember there was one assignment, my other classmates took only an hour to complete while I sat there for 5 hours. It was a new subject for me, I really put my focus down on that subject, I told myself if they could do it, I also can do it. Since I was a matured students, I didn't want just get a pass, I wanted to be a role model for my own children."*

(Primary school teacher, 26 years of teaching experience).

She herself was inspired by a sixty-year old former headmaster whom she met in the university. He looked quite elderly with grey hair and he hoped to pursue a PhD after a degree course. All of his children graduated from university and he was a "free man" in his golden age. With a lot of time, he was pursuing a high degree. After speaking with him, she concluded, "We should not put a full-stop to learning."

Another mother shared:

> *"I felt that I am so fortunate to do assignments together with my teenage son. Every night he studies for his examination and I also busy with my home work. He cannot complain because I am also doing the same."*

(She has 20 years teaching experience and she is teaching in a secondary school in Perak state).

Stage Four: On-going Growth

When asked in what ways they have benefited from this learning process, the participants said that they had gained new knowledge and learnt new teaching strategies that could be applied in the work place. Most mentioned they were happy because the last pay drawn before their retirement would affect the amount of the pension they could look forward to. Most importantly, they were proud to have the recognition of having completed a degree course. It showed that they had done something significant in their lives. Besides, they also shared that they had become very

different people; more confident, daring to take risks and able to perform better at work, more competent, and able to face other challenges in their lives.

> *"Previously I wanted to stay in my comfort zone, but now I have grown a lot and more confident to take on new courses. I feel that I am more equipped and feel very much refreshed to teach the students."*

(Female, 50, primary school Home Science teacher, 24 years of teaching experience).

This lifelong learning journey was found to be transformative and rewarding (Kok & Low, 2011). While not meant for drawing generalizations, the following diagram of the learning model serves to describe the overall lifelong learning experience of the participants which encompassed various stages as a result of interaction with the environment:

The diagram (Fig.1) presents a visual summary of the findings.

DISCUSSION

Environmental motivating factors in lifelong learning, both the macro and micro will be discussed in this section. Interpersonal relationships were found to be a motivational factor in the complex process of lifelong learning.

Environmental motivating factors

The facilitating factors found in this study confirm previous research findings on the
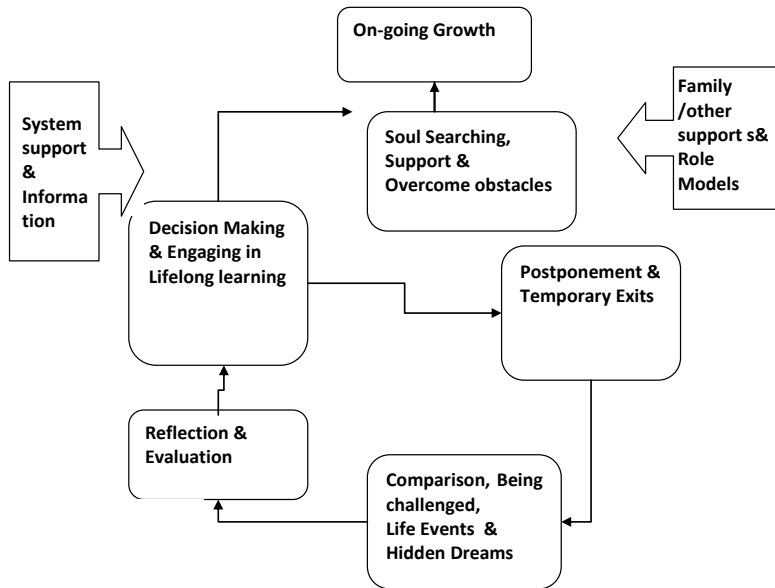
Fig.1: Lifelong learning model derived from school teachers

importance role of motivation from the environment (Pan, 1977; Law *et al*., 2009) which has its theoretical framework from Bronfenbrenner (1979) where family, and community play a role in learning. The similar pattern in the learning process also highlighted the relational aspect in learning. Just as Cross (1981) conceptualized lifelong learning as a chain of activities instead of a single isolate event, the findings of this research found that lifelong learning should be conceptualized from a large community. What actually constitutes lifelong learning is a complex process and should not be viewed from personal and individualized perspectives.

Traditionally, motivation theories were constructed on a two dichotomy extreme, which is either intrinsic or extrinsic classification. The former depicts

a motivational construct that is driven from within and seen as a preferred way of learning compared to the latter which is seen as being driven by external rewards. The findings of this study reject the above simplistic dichotomy classification, as it was evidently found that there was complex interactions between individuals and the environment. It was found that most of the participants rose to the occasion when challenged by external environmental factors. Both the presence of challenges and supports were found. Challenges include the demands from work and coping with the forever changing environment. The environmental supports include the macro (NKRA scheme initialed by Malaysian government) and micro aspects (practical help from the immediate family and friends). On one hand reflecting upon and making the

decision to engage in lifelong learning is intrinsic, on the other hand, learning may not be possible without the environmental supports from both the macro and micro system These supports facilitate and sustain learning, help the learners to overcome obstacles to learning. Therefore, it would not be correct to attribute the learning solely to external rewards even in the cases that participants were motivated by a rise in salary as there was a complex interaction between individuals and environment which involved meaning making process (Connelly & Clandinin, 2006; Ikeda, 2001).

Interpersonal relationships: a complex of interactive processes in learning

Lifelong learning is viewed as a contested concept, compounded by multi-dimensional aspects; neither simple dichotomy classifications nor theories of linear construction can sufficiently explain its complex learning process. Bandura (1977) has rightly located the complex learning process in a social context, whereas many psychological motivational construct that derived from Maslow's approach (1943), such as locus of control and intrinsic motivation theory approach (Heider, 1960) will be individualised focused. Coffield (2000) criticized a pure psychological motivational construct as being a lack of interpersonal relationships. When examining closely the common lifelong learning patterns of the participants presented in this study, the relational aspect was found to be heavily loaded with emotions. There was a strong sense of human bonds and support

in the experience of lifelong learning as revealed by the participants. Firstly it was due to comparisons with colleagues that the participants felt frustrated and dissatisfied; the postponement of learning was caused by social and family responsibilities; the facilitating factors that enable and sustain learning also came from the family and learning communities, from colleagues and friends; role models were also available from the context within which the individuals interacted. Lastly, the self-identity of the learners was transformed (Gallacher *et al*., 2002).

Gallo and Ronaldo (2011) acknowledged the limitation of intrinsic motivation theories and hold that the extrinsic motivators in learning are important. Hazidi and Hamid (2011) who conducted research on the motives of in-service teachers pursuing a bachelor degree on teaching programs also found that the study's participants had given similar answers such as "being left behind" "feel pressured" "was forced to get ready". Those answers were the consequence of their response to changes in their environment. Ng's research findings (2006) have showed that interaction triggered life reflection, which subsequently facilitate the decision to engage in lifelong learning. Socio-cultural and contextual factors indeed play important roles in motivating and supporting lifelong learning (Law *et al*., 2009). Those emotions were the result of complex interaction processes with the people in the environment. The role of emotions arising from the interpersonal relationship that promote and sustain lifelong learning cannot be undermined.

LIMITATION OF THE STUDY

This research has some limitations. First, it is not meant as a generalization, the model presented reflects only the common pattern of learning experiences of a handful of high status professional people who engaged in formal education. There are many people outside the government sector or educational system who are not qualified to apply for sponsorship for formal education. They may want very much to fulfill their long felt education needs and ambitions, but do not have the money to fund learning. Their learning experience may be different. Second, the factors gathered in the research may be situational; dependent on the context of the research. It revealed values from the support system of Malaysia, a collectivist context where family support normally is valued.

Field (2000) has highlighted the phenomenon that few opportunities were presented for unskilled workers and this may create new inequalities. It is hoped that similar learning opportunities can be expanded to people from a wider range of social backgrounds to develop a learning community and society (Gorard & Rees, 2002).

CONCLUSION

The findings of this research highlighted the motivational aspects of lifelong learning which were absent from an economic or human capital approach. It also highlights the importance motivational factors from the environment. Both the macro and micro supports are needed to facilitate and sustain lifelong learning. Motivation for lifelong learning would include the aspect of complex interpersonal interactions.

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Willingness-To-Pay for Monorail Services: Case Study in Penang, Malaysia

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ABSTRACT

The main objective of this study is to examine the determinants of consumers' willingness-to-pay for monorail transportation in Penang (Malaysia). Cross sectional primary survey data with a total of 498 respondents is used for the analysis via a censored regression model. The results demonstrate that habit of recycling, experience in using urban rail-based transportation and problems of insufficient cark parks have the significant effects on the willingness-to-pay for a trip of monorail to travel to work. Whereas, age, gender, ethnicity, income, education and personal perspective on public transportation system are found to have no significant impact on the willingness-to-pay for a trip of monorail to travel to work. Based on these findings, several policies are recommended.

Keywords: Congestion, monorail, transportation, willingness-to-pay, Malaysia

JEL classification code: D10, D12

INTRODUCTION

In this age of industrialisation society, the problems of heavy traffic congestion in Penang, which is one of the developed states in Malaysia, is getting more serious. Two primary reasons exist attribute to the

said situation. First, the existence of great job opportunities in Penang where the free trade zone in Bayan Lepas posed as a centre to cluster all the labour-intensive manufacturing industries (Yeoh, 2011)[1]. Second, Penang ranks as the eighth most liveable cities in Asia, which has a very good standard of living (Tan, 2010). For these reasons, many people migrate to Penang. As a result of an increasing population in

[1] Bayan Lepas is Penang's main factory area where consists of nearly 200 multinational companies (MNC).

Penang, the demand for private vehicles in Penang increases in tandem which eventually results in the rise of and problem of serious traffic congestion, especially during office rush hours.

Report shows that there are approximately 2.21 million registered vehicles in Penang in 2010 with a large proportion of them are private owned vehicles (The Star, 2011). Despite of its small land capacity, Penang has the third most number of newly registered vehicles in Malaysia where a total of 110882 new vehicles are registered (The Star, 2011). Besides, it is noteworthy that there is currently a lack of public transportation in Penang due to a huge increase in travel demand. Worst of all, it is estimated that the travel demand will increase by approximately 25% – 50% by 2030 (Kaur, 2012). Kaur (2012) also highlighted that if the authorities can improve the public transportation system in Penang, the third link between the island and mainland would not be necessary. In view of these serious traffic woes in Penang, monorail (i.e. urban rail-based transportation) is proposed by the government as the solution to these matters. However, the project has been rejected indefinitely after being reviewed. Hence, not much significant traffic improvements have been made thus far.

Given the fact that Penang residents are often burdened with having to put up with serious daily traffic congestion problem daily, the monorail system appears to pose as the most viable alternative public transportation to overcome this problem.

However, a fundamental question yet to be answered is whether there exist the significant benefits received by the residents in using this alternative transportation mode in the debate of how much an individual is willing to pay for the monorail system as an alternative public transportation to avoid congested roadways. The main research question that arises include what factors will affect individual's willingness-to-pay (WTP) for the monorail as an alternative public transportation to work daily. A better understanding of these determinants is important for the public policymakers in promoting usage of the monorail system, in solving the traffic congestion problem as well as for future planning purposes. Considering this research gap, present study attempts to contribute to the existing literatures and society by investigating the determinants of WTP for the monorail system in Penang.

THEORETICAL FRAMEWORK

In present study, the SLOTH model, which originally introduced by Cawley (2004), is used as a proxy to explain individuals' behaviour in using public transport. SLOTH is a model to describe how individuals allocate their time on various activities in order to maximise their utility. Specifically, the SLOTH model is written as:

$$U\,(S, L, O, T, H) \qquad (1)$$

where, U = utility; S = time spent in sleeping; L = time spent in leisure activities; O = time spent in occupation; T = time

spent in transportation; and H = time spent in home activities. All of these activities possess direct impacts on individuals' utility but the impacts may vary across individuals.

According to Cawley (2004), SLOTH model also refers to the time constraint that individuals face when maximising their utility. Since there is only 24 hours per day, the sum of the time spent in SLOTH must equal to 24. As such, the time constraint that based on SLOTH model is written as:

$$S + L + O + T + H = 24 \qquad (2)$$

As argued by Cawley (2004), if given the choice, individuals would rationally choose to allocate their time in the activity that could yield larger marginal net utility. For example, if the marginal net utility of spending time in public transport is smaller than private owned vehicle, rational individuals will choose to use more private owned vehicle than public transport. However, by holding the marginal net utility of spending time in private owned vehicle constant, if the marginal net utility of spending time in public transport rises dramatically due to an improvement in public transport system, individuals would tend to reallocate their time and choose to spend more time in public transport than private owned vehicle.

Moreover, Cawley (2004) also emphasised that individuals maximise their utility depend on their budget constraint. Given the limited resources, individuals need to choose to purchase between transportation goods and other non-transportation goods.

Assuming that individuals are not allowed to borrow money, the money that individuals spend on transportation goods and other non-transportation goods must equal to their earning. As such, the budget constraint is expressed as:

$$Y.P_Y + X.P_X = W.O \qquad (3)$$

where, Y = amount of non-transportation goods purchased; P_Y = price of non-transportation goods; X = amount of transportation goods purchased; P_X = price of transportation goods; W = hourly wage; and O = time spent in occupation.

Similarly, if given the choice, individuals would rationally choose to spend their money on the goods that could yield larger marginal net utility. For instance, if the marginal net utility of spending money on private owned vehicle is larger than public transport, rational individuals will choose to use more private owned vehicle than public transport. However, by holding the marginal net utility of spending money on private owned vehicle constant, if the marginal net utility of spending money on public transport rises due to a reduction in its usage price, individuals would tend to reallocate their money and choose to use more public transport than private owned vehicle. It is, therefore, one can conclude that rational people would choose to forgo the type of transportation that they value less for the type of transportation that they value more.

LITERATURE REVIEW

Since the early development of literatures, WTP has been used as a tool to measure the values and the benefits of non-market goods and services given that it can accurately reflect the consumers' preferences. To our knowledge, WTP is initially used by the environmental economists to value the goods that are non-traded and without property rights such as air, water, forests and wildlife populations (Tietenberg & Lewis, 2008). To date, researchers from various disciplines have used it for policy planning purposes. For instance, Johnson *et al.* (2000), Wagner *et al.* (2000) and Milligan *et al.* (2010) used it to determine the values of health care, Steelman and Powell (1991) and Gertler and Glewwe (1992) used it to value education system, Davis and Tisdell (1999) and Kim *et al.* (2007) applied it as a tool to value the place of interest where tourists visit, Surendran and Sekar (2010) use it to study the forest eco-system, and Zarkin *et al.* (2000) and Cohen *et al.* (2004) used it to evaluate the drug abuse treatment and crime control programmes.

On top of that, WTP has also been used to measure the value of transportation related goods such as air and traffic noise pollution (Feitelson *et al.*, 1996; Saelensminde, 1999; Bjoner, 2004; Fosgerau & Bjorner, 2006), improvement in transportation (Khattak *et al.*, 2003; Molin & Timmermanns, 2006; Eboli & Mazzulla, 2008), improvement in road surface (Walton *et al.*, 2004) and reduction in travel time (Calfee & Winston, 1998; Brownstone *et al.*, 2003; Phanikumar & Maitra, 2007; Asensio & Matas, 2008; Takada & Fujiu, 2010).

Study by Brownstone *et al.* (2003), who investigated the determinants of WTP for a reduction in travel time in San Diego, found that women, middle age cohorts and those with higher income and higher education level are willing to pay more for faster transportation. Using toll fees as a proxy to measure individuals' WTP to avoid traffic congestion, Calfee and Winston (1998) observed that income is not significantly correlated with the value of travel time.

Senbil and Kitamura (2004), who explored the factors affecting WTP for expressways, suggested that females generally value the highway more than males. Markose *et al.* (2007) exhibited that higher income earners are willing to pay more to save their travelling time because of their greater opportunity cost, whereas, lower income earners are less responsive to the increasing cost of congestion. Brent (2006) and Carson (2000) indicated that individuals who are more aware of the environmental issues are more likely to use public transport.

Based on the case of Barcelona, Asensio and Matas (2008) found that males and those individuals with more children value their travel time more by using a more expensive but shorter alternative route. The study also revealed that older commuters are willing to pay more money to save their travel time. Phanikumar and Maitra (2007) examined the WTP for rural bus services and observed that socioeconomic factors such

as age, gender and income do not possess any significant impacts on the WTP for a reduction in travel time.

METHODS

Variables

Owing to the current lack of study on the WTP for public transport in Malaysia, the explanatory variables for present study are selected closely based on the previous studies that have been conducted elsewhere (e.g. Calfee & Winston, 1998; Brownstone *et al*., 2003; Phanikumar & Maitra, 2007; Asensio & Matas, 2008; Takada & Fujiu, 2010). To sum up, the explanatory variables of present study consist of age, gender, ethnicity, marital status, income, education,

habit of using recyclable bags, experience in using urban rail-based transportation (e.g. monorail, MRT, LRT, Komuter), personal perspective on Malaysia public transportation system and problems of insufficient cark parks (Table 1).

Age of respondents is included in present study as a continuous variable, and it is hypothesised to have positive effect on the WTP for monorail. Respondents' gender is included as one of the dummy variable in present study, where males are represented by a value of 1 and females are represented by 0. Based on the findings of past studies, females are expected to have higher WTP for monorail than males.

Provided the homogeneous nature of the population in most of the countries, previous

TABLE 1
Definition of variables in the statistical model

Variables	Definitions
Dependent variable	
monorail	Willingness-to-pay for a trip of monorail to travel to work (RM)
Explanatory variables	
Age	Respondent's age in years
Male	Respondent is male
Malay*	Respondent is Malay
Chinese	Respondent is Chinese
Indian	Respondent is Indian/others
Single	Respondent is single
Low	Respondent's income is < RM 1000
Lower-mid	Respondent's income is RM 1000 – RM 2999
Upper-mid	Respondent's income is RM 3000 – RM 5999
High*	Respondent's income is > RM 5999
Tertiary	Respondent has tertiary education
Recycle	Respondent prefers to use recyclable bag than plastic bag
Experience	Respondent has the experience in using urban rail-based transportation
Efficient	Respondent thinks that the Malaysia public transportation system is efficient
Park	Respondent faces the insufficient cark park problems

*Note: *Refers to the reference groups*.

studies often do not take into account of ethnic variables. However, since Malaysia is well known for its uniqueness of multi-ethnic composition, respondent's ethnic background is taken into consideration in present study as three major groups (i.e. Malay, Chinese and Indian/others) to allow ethnic comparison. This is in light of the possible impacts of cultures, religions, racial-political and ethnic privileges on individuals' preferences for monorail. As emphasised by Ng *et al.* (2009), Chinese in Malaysia tend to face more barriers in economic advancement compared to Malays, thus they often engage in a hectic and fast-paced lifestyle in order to cope with their high cost of city living. For these reasons, Malaysian Chinese are expected to value monorail more than Malays given that monorail could ease their busy schedule.

Since the presence of children in a family may pose as a barrier to use monorail services as an alternative transportation to work as parents often need to provide transports for their children. Given the limited availability of data, present study uses marital status as a proxy to measure these family commitments, whereby, respondents who are single are coded as 1, and those who are married, divorcé or widow(er) are coded as 0. As such, it is anticipated that single individuals would have higher WTP for monorail than the married, divorcé and widow(er).

Following the guideline used by Cheah (2011) based on a sample of Penang, income variable is divided into four groups: low (< RM 1000), lower-middle (RM 1000 –

RM 2999), upper-middle (RM 3000 – RM 5999) and high (> RM 5999). Based on the previous findings, it is hypothesised that higher income individuals would have higher WTP for monorail than the lower income individuals.

Present study uses a dummy variable to indicate respondent education background as 1 refers to the respondents who have at least tertiary education, 0 otherwise. Based on the previous studies, it is anticipated that individuals who have tertiary education are willing to pay more for monorail than those who without tertiary education.

In present study, respondents' recycling behaviour is used as a proxy to indicate their environmental awareness. Respondents who prefer to use recyclable material made bag than plastic bag are coded as 1, whereas those who do not have such preferences are coded as 0. The hypothesis is that individuals who have recycling behaviour would have higher WTP for monorail than those who do not have such behaviour.

Considering the possibility that familiarity with urban rail-based transportation may positively impact one's WTP for monorail, respondents who have the experience in using urban rail-based transportation is entered into the current model as 1, and 0 otherwise. Further, respondents' personal perspective on the Malaysia public transportation system is also included as a dummy variable in present study, given that it may be a determining factor of individuals' WTP for monorail. As such, if individuals think that the current public transportation system is efficient are

coded as 1, otherwise 0. It seems reasonable to anticipate that individuals who think that the current public transportation system is efficient would have higher WTP for monorail.

Last but not least, respondents who are currently facing the insufficient cark park problems in their residing areas or workplaces are denoted as 1, whereas those who are not facing such problems are indicated as 0. It is expected that car park issues in the residing areas or workplaces may affect individuals' preference for monorail. In particular, individuals who face the insufficient car park problems may have higher WTP for monorail than those who are not facing such problems.

Statistical analysis

By using the cross sectional survey data, a problem that occurs is the existence of zero amounts reported by large observations in the sample. Possible reason that arises may due to the lack of preference for the good and services. As such, application of ordinary least square (OLS) that does not take into account of such barriers for statistical analysis will definitely yield biased and inconsistent results (Maddala, 1983; Kang & Tan, 2004; Greene, 2007). It is therefore, to deal with such censored data (censored at the limit of zero expenditure), tobit model is suggested to be used (Tobin, 1958). In general, tobit model can be expressed as:

$$
\begin{aligned}
y_t &= X_t\beta + u_t && \text{if } X_t\beta + u_t > 0 \\
&= 0 && \text{if } X_t\beta + u_t \leq 0, \\
t &= 1, 2, ..., N
\end{aligned}
\tag{4}
$$

where, y_t = WTP for a trip of monorail to travel to work (RM); X_t = explanatory variables that are hypothesised to affect the WTP for monorail; β = coefficients for the explanatory variables; u_t = error terms of the regression which assumed to be zero mean and constant variance $N(0,\sigma^2)$.

Data

Data used in present study was collected based on convenience sampling method. The survey was conducted at the selected manufacturing factories located in Bayan Lepas, Penang from February 2011 to April 2011. The inclusion criteria were those who were being employed full-time in the factories and had been residing in Penang for at least 12 months. Prepared questionnaires were distributed for self-administration by the respondents, despite, some explanations were provided upon giving out the questionnaires.

During the survey, several questions regarding the perspectives for monorail were addressed. In particular, respondents were asked to indicate whether they were willing to use monorail as an alternative transportation to travel to work, and how much they were willing to pay for a single trip. The targeted sample size was 508 respondents which represented 1611600 populations of Penang (SERI, 2011). The response rate was about 98% (498

respondents). Stata statistical software (version 9) was used to perform the statistical analysis.

RESULTS

The characteristic of survey respondents is presented in Table 2. Out of the total 498 respondents, 424 (85%) are willing to pay for a trip of monorail to travel to work, and 74 (15%) are not willing. The average amount of money that the respondents are willing to pay for a trip of monorail to travel to work is around RM 2, which is almost equivalent to the average price of monorail in Kuala Lumpur. Mean age of the respondents is approximately 31 years old.

Approximately 47% of the respondents are male, and 50% are single.

Overall, the ethnic breakdown is as follows: 27% Malay, 61% Chinese and 12% Indian/others. Majority of the respondents are in the lower-middle income group (54%), followed by those in the upper-middle (32%), high (10%) and low (4%) income groups. A large proportion of the sample (78%) have tertiary education. About 87% of the respondents prefer to use recyclable material made bag than plastic bag. More than three-quarter (84%) of the respondents have the experience in using urban rail-based transportation. Only minority (33%) of the respondents think that

TABLE 2
Descriptive analysis of variables in the statistical model

Variables	Percentage or mean (SD)		
	Those who are willing to pay for monorail (n1 = 424)	Those who are not willing to pay for monorail (n2 = 74)	Total sample (N = 498)
Monorail	2 (2)	-	2 (2)
Age	31 (6)	31 (7)	31 (6)
Male	46	49	47
Malay	26	35	27
Chinese	61	58	61
Indian	13	7	12
Single	51	42	50
Low	4	4	4
Lower-mid	53	58	54
Upper-mid	33	27	32
High	10	11	10
Tertiary	80	68	78
Recycle	91	68	87
Experience	84	78	84
Efficient	35	22	33
Park	84	57	80

Note: For continuous variable, the value refers to mean, whereas for dummy variables, the value refers to percentage. SD refers to standard deviation.

the current Malaysia public transportation system is efficient. Last, around 80% of the respondents face the problems of insufficient cark parks in their residing areas or workplaces.

Estimation results for tobit analysis of WTP for monorail is summarised in Table 3. Correlation coefficients between income and education variables are calculated to detect the potential multicollinearity problem. The results show that the correlation coefficients between income and education variables are less than 0.8, thus indicating that there exists no multicollinearity problem in the current model (Studenmund, 2006) (Appendix 1).

Further, Likelihood Ratio (LR) test is used to test the goodness-of-fit of the model. The LR chi-square with 13 degree of freedom has the value of 27.09, with the probability of 0.012. Hence, the null hypothesis can be rejected at 5% level, and conclude that the current model is very good fit.

The results show that only habit of recycling, experience in using urban rail-based transportation and problems of insufficient cark parks variables are statistically significant in affecting the individuals' WTP for monorail. Whereas, the rest of the variables like age, gender, ethnicity, income, education and personal

TABLE 3
Results for tobit analysis of WTP for monorail in Penang

Variables	Coefficient	Std. Err.	t-stat	p-value
	(1)	(2)	(3)	(4)
Constant	0.1175	1.0547	0.11	0.911
Age	-0.0008	0.0200	-0.04	0.970
Male	0.2954	0.1966	1.50	0.134
Malay	-	-	-	-
Chinese	0.1382	0.2402	0.58	0.565
Indian	0.2458	0.3349	0.73	0.463
Single	-0.0730	0.2314	-0.32	0.753
Low	-0.0229	0.6538	-0.03	0.972
Lower-mid	-0.3822	0.3912	-0.98	0.329
Upper-mid	-0.5022	0.3616	-1.39	0.166
High	-	-	-	-
Tertiary	0.3257	0.2826	1.15	0.250
Recycle	0.6220	0.3022	2.06	0.040**
Experience	0.4730	0.2771	1.71	0.088*
Efficient	0.3007	0.2120	1.42	0.157
Park	0.5965	0.2474	2.41	0.016**
LR χ^2 (13)	27.09			
P> χ^2	0.012			
Observations	497			

Note: Asterisks *** indicate significance at the 1% level, ** at the 5% level, and * at the 10% level.

perspective on Malaysia public transportation system are not significantly associated with individuals' WTP for monorail. In terms of environmental awareness factor, it is found that individuals who prefer to use recyclable material made bag than plastic bag are willing to pay RM 0.62 more for a trip of monorail to travel to work compared to their counterparts who do not have such awareness. Meanwhile, individuals who have the experience of using urban rail-based transportation are found to have RM 0.47 higher of WTP for a trip of monorail to travel to work in relative to their peers who do not have such experience. Further, individuals who face the problems of insufficient cark parks in their residing areas or workplaces are willing to pay RM 0.60 more for a trip of monorail to travel to work as compared to their peers who are not facing such problems.

DISCUSSION

Age is found to have no significant impact on the WTP for monorail. This observed outcome contradicts the studies by Brownstone *et al*. (2003), Asensio and Matas (2007) and Phanikumar and Maitral (2007), who claimed that age is able to affect one's preference for public transportation. Perhaps, this is due to the widely known facts that monorail transportation system in Malaysia is designed to be user friendly to both the elderly and youngsters. Therefore, the taste for monorail does not vary across the age of individuals.

Contrary to the arguments by Brownstone *et al*. (2003) and Senbil and

Kitamura (2004), there are no gender differences in the preference for monorail. The reason may be that there exists an equal labour force participation rate between males (51%) and females (49%) in Malaysia, and thus somewhat indicating that both Malaysian males and females have the same likelihood of engaging in a busy working lifestyle (Department of Statistics Malaysia, 2010). It appears, therefore, one can conclude that Malaysian males and females may equally value their travel time in this urbanisation society.

It is surprising to observe that there is no significant relationship between ethnicity and the WTP for monorail. The absence of ethnic differences in present study may be because of the data that used in present study is unable to represent the ethnic Malays in Malaysia given that it consists of small proportion of Malay respondents (27%). It is worthwhile to note that marital status does not possess any significant impacts on one's WTP for monorail. Although single individuals do not have as much family commitments as those married, divorcé or widow(er), they equally appreciate their travel time. The reason may be that both of these groups of individuals utilise their time in a different manner. For instance, single individuals would often allocate most of their time for works, whereas, those who are non-single would tend to spend most of their time with their family.

Present study found that income is not significantly associated with the WTP for monorail. These unexpected outcomes contradict the previous arguments by

Brownstone *et al*. (2003), Markose *et al*. (2007) and Phanikumar and Maitra (2007). Based on these, one can conclude that opportunity cost of time does not play an important role in affecting individuals' decision to use time saving transportation such as monorail. In contrast to the findings by Brownstone *et al*. (2003), no significant relationship is found between education and the WTP for monorail. It may be because both education and income are complementary in nature. Hence, education per se does not possess any significant impacts on the WTP for monorail given that income is not significant.

With regard to the environmental awareness factor, individuals who have the habit of recycling such as using recyclable material made bag are observed to have a higher preference for monorail in relative to those who do not have such recycling habit. The fact of the matter is that monorail transportation is more environmental friendly as compared to automobile due to its low carbon emission system. Hence, those commuters who are more aware of the environmental issues would be more likely to use monorail as an alternative transportation to work.

Conform to the prior conjecture, individuals who have the experience of using urban rail-based transportation tend to value the monorail system more than their peers who do not have such experience. Two likely reasons exist for these findings. First, individuals who have the experience of using urban rail-based transportation are more familiar with the monorail system.

Hence, they tend to find monorail easier to be used. Second, they are also more aware of the advantages of using monorail.

Contrary to the prior supposition, it is ascertained that individuals' perspective on the Malaysia public transportation system is not significantly correlated with the WTP for monorail. This may be mainly due to majority of the people in Penang have the confidence that the public transportations will improve substantially in the future. Based on these outcomes, one can reject the notion that people who do not think that the current public transportations system is efficient would not value the monorail.

In agreement with the earlier expectation, individuals who are currently faced with insufficient cark park problems in their residing areas or workplaces tend to place higher value on monorail. In other words, insufficient cark park problems pose as an incentive for one to use monorail. This is owing to use of urban rail-based transportation can ease the troubles in finding car parks.

CONCLUSION

The present study has shed new light on the determinants of WTP for monorail in Penang, Malaysia. Findings of present study appear to be very useful for the policy makers in designing the proper interventions for solving the problems of heavy traffic congestion. Specifically, the factors that found to be able to affect one's preference for using monorail include habit of recycling, experience in using urban rail-based transportation and the problems

of insufficient cark parks. Based on these findings, several policies are recommended.

First, environmental awareness programmes directed toward the public to increase the awareness of the risks of excessive carbon dioxide in the atmosphere may help reduce the traffic congestion in Penang. As a suggestion, these programmes should take into consideration of making environmental courses and seminars compulsory in the schools and workplaces to deliver the information about environmental issues. Nevertheless, efforts could also be made to invite the environmental specialists to become the spokespersons to highlight the alarming evidence of environmental pollution.

Second, policy makers are suggested to promote the benefits of monorail, such as less expensive, quicker and environmental friendly, to the community, with focus on those individuals who without the experience of using urban rail-based transportation. For instance, multi-lingual mass media such as newspaper, magazine, radio channels and television programmes could be used as the channel to deliver the messages regarding the benefits of monorail to the public. While, this is to guarantee the messages to reach a wider population.

Moreover, based on the economic interventions to discourage people from using private owned vehicle, government should consider imposing heavy parking fine in the areas where have a lot of illegal car parking. Government can thus use this collected revenue to further subside the public transportation system. As a result, rational individuals would be more likely to substitute monorail for private owned vehicle as the transport to travel to work during rush hours.

Given the budget, time and geographical constraints, several limitations are acknowledged in present study. First, the collected survey data is somewhat limited to adults who are working in the Bayan Lepas areas. Ideally, respondents travelling to/from work throughout the Penang Island as well as mainland should be canvassed in order to obtain a more representative sample. Others such as students and pensioners should also be examined for their travel patterns and preferences. Second, owing to a lack of measuring instrument, few variables that are deemed important are not taken into account in present study. For instance, the distance of travelling from house to workplace and the time spent in traffic congestion. As such, suggested future researches should not only be limited to the Bayan Lepas area. Since the city of Georgetown is facing heavy traffic issues during rush hours as well, the study should be extended to the whole of Penang island.

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APPENDIX

CORRELATION COEFFICIENT BETWEEN INCOME AND EDUCATION VARIABLES

Variables	Low	Lower-mid	Upper-mid	High
Tertiary	-0.3349 (0.000)***	-0.1222 (0.006)***	0.1985 (0.000)***	0.1135 (0.011)**

Note: P-value in parentheses. Asterisks *** indicate significance at the 1% level, ** at the 5% level, and * at the 10% level.

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Job Satisfaction among School Counsellors in Secondary Schools in Mid-Western Nigeria

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ABSTRACT

This study investigated the job satisfaction among school counsellors in secondary schools in mid-western Nigeria. The study adopted a survey research design. The participants were 121 secondary school counsellors drawn from secondary schools in mid-western Nigeria. A questionnaire titled "Counsellor's Job Satisfaction Questionnaire (CJSQ)'' was used to collect data for this study. The results indicated that the majority of the secondary school counselors are satisfied with their jobs. Also, promotion was the best single factorr predicting job satisfaction. In addition, job dimension variables such as promotion, job tenure, salary, social support and supervision significantly correlated with job satisfaction among school counsellors. Based on these findings, it was recommended that school counsellors' job satisfaction could be further enhanced and sustained by government and school administrators by paying adequate attention to the welfare of counsellors in terms of regular promotion, enhanced remunerations, guaranteed job security, adequate social support system and provision of well equipped counselling centres for counselling practice.

Keywords: Job satisfaction, secondary school counsellors, best counselling practices, career advancement, career counselling

INTRODUCTION

Counselling is a notable field for its diversity and dynamism. It is influenced by diverse political, economic and social forces within the society. As a result, tremendous expansion has been witnessed in the field of counselling in terms of promotion of good health, family dynamics, career assessment, school adjustments, development tasks, ethical standards, and research training.

One of the tasks of school counsellors is to educate and assist students in their overall development. In the 21st century, the job of helping students to achieve success in schools and become more productive members of the society is challenging. According to Gysbers, Lapan and Blair (1999), today's youth must confront a rapidly changing world of work and labour force, violence in the home, school and community, divorce, teenage suicide, substance abuse, and sexual experimentation. Thus, school counsellors occupy an important position within the school system to assist students to cope with these crucial issues and the normal developmental tasks adolescents face in life (Aluede, 2009).

The demand for school counsellors would continue to be on the increase. This is especially so in Nigeria in the face of increasing school enrolments with the introduction of the Universal Basic Education on September 30, 1999 (Imonikhe & Aluede, 2010). This programme has made school attendance compulsory for children aged between six and thirteen years of age. It is in realization of this fact that the Federal Government of Nigeria has devoted much time to the planning and implementation of guidance and counselling programmes in secondary schools. Hence, the Federal Government of Nigeria (2004) stated that in view of the apparent ignorance of many young people about career prospects and personality maladjustments among school children, career officers and counsellors shall be appointed to post primary institutions. Since qualified personnel in this category are

scarce, government shall continue to make provisions for the training of interested teachers in guidance and counselling. The thrust of this policy is that government believes that guidance and counselling is a crucial educational service that can enhance the personal growth and psychological development of students in the school system (Federal Government of Nigeria, 2004).

For counsellors to be able to provide this crucial educational service to the students, they have to be interested and willing to contribute meaningfully to the students' personal growth and psychological development. Therefore, the study of job satisfaction among school counsellors is very crucial to the improvement of productivity among school counsellors. This is because for members of a profession to discharge their duties effectively, they must be satisfied with their jobs (Eduwen, 2008).

Job satisfaction is a pleasurable emotional state resulting from the appraisal of one's job. There are a number of factors that can influence a person's level of job satisfaction. Some of these factors include the level of pay and benefits, the perceived fairness of promotion in an organization, recognition, favourable working conditions and the job itself (DeMato, 2001). The need to cater for the working conditions of school counsellors and ensure their job satisfaction in the school system becomes imperative if they are to carry out their responsibilities to the admiration of all. If they are unable to achieve their goal as counsellors, they experience feelings of inadequacy

and unhappiness that may make them vulnerable to stress and job dissatisfaction. Job dissatisfaction promotes stress, fatigue, frustration and low productivity (DeMato, 2001).

Extent of Job Satisfaction among School Counsellors

Among the existing studies on school counsellors' job satisfaction, is that of DeMato and Curcio (2004), which examined how elementary school counsellors in Virginia reported their job satisfaction. Results of the study indicate that a vast majority (90.4%) of Virginia elementary school counsellors surveyed in 2001 were either satisfied or mostly satisfied in their positions. Similarly, Baggerly and Osborn (2006) reported a survey of school counsellors in Florida in 2002, which revealed that majority of the respondents (39.8%) were either satisfied or somewhat satisfied (44.7%) in their positions. Baggerly and Osborn's (2006) study further asked respondents to report the frequency with which they performed appropriate and inappropriate school counsellors' roles as defined by the American School Counselling Association (ASCA). The study revealed that school counsellors who implemented appropriate duties more frequently indicated greater job satisfaction, while those who implemented inappropriate duties more frequently indicated low job satisfaction.

Facets of Job Satisfaction

Over the years, considerable time and efforts have been devoted to studies on facets of job satisfaction and the best conclusion to draw from these works is that, although there are many specific and diverse job dimensions, which have been shown to relate to job satisfaction at one time or the other, there is a set of dimensions common to most jobs that is sufficient to describe most of the predictable variances in job satisfaction (DeMato & Curcio, 2004). The specific dimensions identified represent those job characteristics typically used to assess job satisfaction for which the organizational members have some positions on a like-dislike continuum.

Job satisfaction characteristics have been classified into two namely intrinsic and extrinsic dimensions (Rose, 2001; Eduwen, 2008). Intrinsic dimension is the 'outcome' or the result of a work situation that people enjoy, because they are in charge and they have the opportunity to acquire new skills and abilities to make a different challenge, or because they are part of success team (Clark, 2005). Intrinsic motivation leads to outstanding creative productivity energy that seems to have virtually no limit. Intrinsic motivation, which has to do with the job content, then, is motivation which comes from the inside of a person. It is an emotional preference for a task that gives pleasure and enjoyment. It arises from having a strong emotional interest in an activity and a sense of freedom and autonomy relating to it (Kashel, 1994). Extrinsic dimension involves the job context, that is, the external environment in which the worker operates. This includes: the social and administrative atmosphere;

working conditions; remunerations; and other benefits (Clark, 2005). A thorough review of literature reveals that these facets of job dimension include promotion, job tenure, salary, school support and supervision (Clark, 2005; Eduwen, 2008).

Promotion has been recognized as a factor in employee's job satisfaction. Promotion constitutes an important aspect of workers' labour mobility most often carrying substantial wage increase (Kosteas, 2009; Blau & Devaro, 2007; Cobb- Clark, 2001). Accordingly, lack of promotion breeds lower staff morale resulting in frustration, resignation and premature retirement (Clark, 2005). Souza-Poza and Souza-Poza (2003) estimated the effect of promotion on workers' satisfaction, focusing on promotion satisfaction in a small sample of managers. They found that managers who received promotions were more satisfied with promotion opportunities and have greater promotion expectation for the future, than those who did not.

Job tenure correlates with job satisfaction. Kosteas (2009) asserted that there is a correlation between job tenure and job satisfaction. Job satisfaction appears to initially decline with job tenure and then rises. This finding is consistent with the dynamics that individuals with lower job satisfaction are more likely to leave their jobs, but will give it some time on a new job before doing so. Conversely, Duffy, Ganster and Shaw (1998) reported that individuals with longer tenure were more likely to experience dissonance and leave the job if they become dissatisfied.

Salary is recognized as a factor in employee's job satisfaction. Akintoye (2000) asserted that money remains the most significant motivational strategy to achieve greater productivity. Tella, Ayeni and Popoola (2007) stated that to use salaries as a motivator effectively, personnel managers must consider four major components of a salary structure. These are the job rate, which relates to the importance the organization attaches to each job; payment, which encourages workers or groups by rewarding them according to their performance; personal or special allowances, associated with factors such as scarcity of particular skills or certain categories of information, professionals, or with long service; and fringe benefits such as holidays with pay, pensions, and so on.

Collins (2008) reported the relationship between social support and job satisfaction. Specifically, Collins stressed the importance of social support in an organization, asserting that the workers' support group encouraged discussion, built consensus, coalitions and networks, helped members articulate agency demands, enabled them to be clearer about explicit and implicit rules and conflict issues-encouraging movement towards resolution of these issues, while clarifying the workers' own sense of role and mission. Similarly, Coulshed and Mullender (2006) revealed that learning sets or seminars based around social workers' own agenda, work-based issues, seeking practical outcomes, are other possible means of providing mutual group support and shared problem-solving. This implies that a wide range of opportunities

for mutual group support should be available on the particular needs, wishes and wants of the staff of the organization.

DeMato and Curcio (2004) revealed that supervision is linked to job satisfaction. In other words, the supervision by a district superior and peers positively predicted school counsellors' career satisfaction (DeMato & Curcio, 2004). Evans and Hohenshil (1997, as cited in DeMato, 2001) investigated 231 substance abuse counsellors and concluded that job satisfaction could be predicted by a combination of four clinical supervision variables. The supervision variables were the numbers of hours per week, length of time the supervisor had been in clinical supervision, degree level of the supervisor, and whether the supervisor was the clinical or administrative supervisor.

Rationale for the Study

Today, the world is in dire need of development in science and technology through education. Nigeria cannot afford to be left behind in the scheme of things in which secondary education will play a key role. The counsellors in the school system need to be satisfied with their jobs if they are to play their expected role. The implication is that without improving the working conditions of counsellors and making them satisfied, the probable result is that very few of the educational aims can be properly achieved.

The role of school counsellors in the educational process has been a matter of public interest. It is in recognition of this vital service in the educational enterprise that the government has embarked on the training and re-training of school counsellors through seminars, conferences, workshop and in-service courses. School counsellors serve dual purpose by engaging in other ancillary functions, including teaching of different subjects in addition to their primary functions of counselling students (Aluede & Imonikhe, 2002). At times, there are cases of counsellors being assigned as full-time teachers in the classroom thereby relegating to the background their professional responsibilities (Aluede, Afen-Akpaida & Adomeh, 2004). The implication is that the educational structure creates strain and stress, which have given rise to the question as to whether secondary school counsellors experience job satisfaction.

A number of problems face Nigeria's educational system, which tend to have negative effects on the degree of counsellors' job satisfaction. These include current pressure from working with more challenging students, increased administrative and managerial tasks, shortage of funds, increased counsellor-student ratios, and inadequate facilities(Aluede, Afen- Akpaida & Adomeh, 2004; Aluede, McEachern & Kenny 2005).

The study of job satisfaction among teachers in Nigeria has been widely researched (e.g. Arubayi, 1981; Nwagwu, 1981; Clark, 2005). These studies have indicated that majority of teachers are satisfied with their job. Similarly, the study of job satisfaction among school counsellors has also been widely researched especially in developed countries (cf Morgan, 1977;

Kirk, 1988; Murray, 1995; DeMato, 2001; DeMato, 2004; DeMato & Curcio, 2004; Bryant & Constantine, 2006). However, little is known about job satisfaction of counsellors in Nigerian schools (Eduwen, 2008). Hence, it became imperative to survey job satisfaction among counsellors in secondary schools and to determine which of the following dimensions: promotion, job tenure, salary, social support and supervision significantly contribute to job satisfaction of school counsellors. Thus, the problem of the study is how satisfied are secondary school counsellors on their jobs? To resolve this problem, the following research questions were raised being,

1. How do secondary school counsellors in Midwestern – Nigeria express their job satisfaction?

2. Which of the job dimensions (promotion, job tenure, salary, social support and supervision) most significantly contribute to job satisfaction of secondary school counsellors in Midwestern- Nigeria?

METHODOLOGY

Participants

The study adopted the survey design approach. The population of the study comprised of all the 128 secondary school counsellors drawn from the existing 57 public secondary schools in Midwestern Nigeria with practicing school counsellors.

In view of the fact that the population of the study was relatively small, all the 128 secondary schools counsellors practicing in secondary schools in Midwestern- Nigeria were targeted for use in the study. At the time of data collection, only 121 secondary school counsellors duly responded. Their demographic characteristics were as follows: 53 males with an age average of 35.6 years. The number of females was 68 with age average of 33.2 years.

Measurement

A questionnaire entitled "School Counsellors' Job Satisfaction Questionnaire (SCJSQ)" was the instrument used in this study. It was adapted from the Job Descriptive Index (JDI) developed by Smith, Kendall, and Hulin (1969) and adapted by DeMato (2001). In the original JDI, five facets of job satisfaction (pay, promotion and promotion opportunities, workers' social support, supervision and the work itself) were measured. Respondents were required to answer yes, no, or can't decide in response to whether given statements accurately describes their job.

The current version was also made up of five facets of job satisfaction. Pay was modified as salary; work itself was replaced by job tenure; promotion and promotion opportunities; workers' social support; and supervision were retained. Each facet has six items. In the current instrument, the following work itself items: Repeated; Hot (Temperature); Pleasant; Useful; Tiresome; and Helpful were completely deleted and replaced with the following items on Supervision: The way my job provided for a secure future; the level of my job security; the way lay- off and transfers

are carried out in my job; the opportunity to be important in the eyes of fellow colleagues; the opportunity provided for staff development; and my present job gives me a sense of accomplishment. In addition, the sentence structure of item 15 on the original JDI which read "my pay and the amount of work I do" was modified to now read "my salary value in relation to the amount of work I do"

Both the original version of JDI and the modified version used in this study had thirty (30) items. In the modified version, the response format was modified from its original nominal scale format of yes, no and can't decide to a four point Likert- type format of very satisfied (4 points), satisfied (3 points), dissatisfied (2 points) and very dissatisfied (1 point). The modification of JDI became necessary to suit the Nigerian school system and the aims of the current study.

The instrument was content validated by three professors of counselling, and educational management in the Faculty of Education, Ambrose Alli University, Ekpoma-Nigeria and the reliability of the instrument was determined using split–half method. The reliability yielded a correlation co-efficient of 0.94, which was considered adequate for this study

Procedure

Copies of the questionnaire were personally distributed by the principal author with the assistance of research assistants. The principal author sought the permission of school principals to have their school counsellors respond to the questionnaire. In each school, the questionnaire was administered and retrieved from the respondents the same day.

The data collected were collated and analyzed with descriptive and inferential statistics. To answer research question as to whether school counsellors were satisfied or not on their jobs, their responses in all the five facets of job satisfaction were collapsed from the four- point response format and classified into two—satisfied and not satisfied. The second research question used the four- point response format.

RESULTS

The data generated, when analysed, yielded the following results that are presented in this section:

Research Question One

How do secondary school counsellors in Midwestern – Nigeria express their job satisfaction? Job satisfaction as expressed by secondary school counsellors in Midwestern Nigeria is presented in Table 1.

Based on the survey, the majority of the respondents (total of 88. 3 %) indicated satisfaction in all the facets of job satisfaction. Also, the survey further indicated that an insignificant percentage (11. 7%) of school counsellors expressed dissatisfaction with their job.

Research Question Two

Which of the job dimensions (promotion, job tenure, salary, social support and supervision) most significantly contribute

TABLE 1
Secondary School Counsellors' Job Satisfaction (N=121)

		Response Categories			
		Satisfied		Not-satisfied	
S/N	Job Satisfaction items	F	%	f	%
1	The opportunity for advancement on the job	100	82.64	21	17.36
2	The opportunity of getting ahead on the job	110	90.90	11	9.10
3	The way promotions are carried out in the organization	102	84.3	19	15.7
4	The way I get promotion for the work I do	105	86.78	16	13.22
5	Am satisfied with the promotion criteria	107	88.43	14	11.57
6	The feelings of accomplishment I derive from the promotion	106	87.6	15	12.4
7	The way my job provides for a secured future	105	86.78	16	13.22
8	The level of my job security	102	84.30	19	15.70
9	The way layoff and transfer are carried out in my job	109	90.10	12	9.90
10	The opportunity to be important in the eyes of fellow colleagues	108	89.26	13	10.74
11	The opportunity provided for staff development	107	88.43	14	11.57
12	My present job gives me a sense of accomplishment	104	85.95	17	14.05
13	The opportunity to make as much money as my friends in other jobs	102	84.30	19	15.70
14	How my pay compares with that of similar positions in the school system	100	82.64	21	17.36
15	My salary value in relation to the amount of work I do	104	85.95	17	14.05
16	The level of my salary with reference to my experience	108	89.26	13	10.74
17	The way regular salaries and allowances are paid	112	92.56	09	7.43
18	The opportunity for salary advancement	109	90.10	12	9..90
19	The spirit of cooperation among my co-workers	109	90.10	12	9.90
20	The friendliness of my co-workers	112	92.56	09	7.43
21	The way my co-workers get along with each other in the organization	113	93.40	08	6.60
22	Inter-personal relationship among co-workers	101	83.47	20	16.53
23	The way I get praised from my co-workers for a job well done	110	90.90	11	9.10
24	The level of support I get from my co-workers	115	95.04	06	4.96
25	The technical know-how of my supervisor	111	91.74	10	8.26
26	The opportunity to do new things on my own	107	88.43	14	11.57
27	The way school system policies are administered	108	89.26	13	10.74
28	The opportunity to supervise other people	106	87.60	15	12.40
29	The opportunity to work alone on the job	107	88.43	14	11.57
30	The nature of supervision	107	88.43	14	11.57
Total		3206	88.3	424	11.7

to job satisfaction of secondary school counsellors in Midwestern- Nigeria? Job dimensions (promotion, job tenure, salary, social support and supervision) that significantly contribute to job satisfaction of school counsellors was determined using Regression analysis to analyze the respondents' score on each of the dependent variables as significant predictors of job satisfaction. The results of the analysis are presented in Tables 2 and 3.

Tables 2 and 3 reveal that in separate stepwise regression equation, hygiene variables were presented as independent (potential predictors) variables with job satisfaction as the dependent measure. These variables which were significant predictors in the hygiene group were used in a stepwise regression to identify the best predictors of job satisfaction. Promotion was the best single factor, which accounted for a significant increment (40.6%) of variance.

Salary accounted for an increment (27.9%) of variance. Social support accounted for an increment (13.45) of variance. Job tenure accounted for an (10.5%) of variance, while supervision accounted for a significant increment (7.7%) of variance. Based on the analysis, it can be concluded that promotion is the most significant predictor of job satisfaction.

DISCUSSION OF RESULTS

This study found that the majority of school counsellors in Midwestern Nigeria expressed satisfaction with their job as school counsellors. In addition, job satisfaction was significantly correlated with promotion, job tenure, social support, salary and supervision of school counsellors.

Promotion was the best single predictor of job satisfaction. This is an indication that promotion is a morale booster to counsellors and perhaps other employers in the school

TABLE 2
Regression Analysis of the Dimensions of Job Satisfaction

Mode		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2007.179	1	2007.179	81.258	.000a
	Residual	2939.449	119	24.701		
	Total	4946.628	120			
2	Regression	3384.883	2	1692.442	127.875	.000b
	Residual	1561.745	118	13.235		
	Total	4946.628	120			
3	Regression	4046.206	3	1348.735	175.254	.000c
	Residual	900.422	117	7.696		
	Total	4946.628	120			
4	Regression	4567.828	4	1141.957	349.701	.000d
	Residual	378.800	116	3.266		
	Total	4946.628	120			
5	Regression	4946.628	5	989.326	1.099	.000e
	Residual	.000	115	.000		
	Total	4946.628	120			

system. This is in line with the work of Kosteas (2009) that stressed the importance of promotion in an organization because of its social prestige. Promotion boosts staff morale and motivates them to work harder thereby increasing productivity and efficiency (Clark, 2005).

Job tenure was found to be significantly related to job satisfaction. This is an indication that once a worker has the assurance that his/ her job is guaranteed, the more likely for/ her to experience higher level of job satisfaction and organizational commitment. Also, the tendency to regard the present job as a stepping stone to other jobs is erased and there is the assurance of looking forward to retirement and pension. The finding is supported by the study of Kosteas (2009), which stated that workers initially have high morale when starting a job but morale decreases during the first few years of service and then increase as the number of years of service increases. However, this finding differs from the studies of Duffy et al. (1998) which concluded that

individuals with longer tenure were more likely to experience dissonance and leave the job if they become dissatisfied.

In the present study, salary was significantly correlated with job satisfaction. This is indicative of the fact that salary is a positive motivator that a worker values and which guarantees his/ her commitment to an organization. This finding is buttressed by the postulations of Okpara (2004) and Tella et al. (2007) that workers value pay, and once they are well paid they will be satisfied and committed to their organization.

Social support was also found to be significantly correlated with job satisfaction. This is an indication that school counsellors individuals are indeed influenced by their perceptions of others' assistance and recognition. The social nature of man is also exhibited by the school counsellor as he/ she consciously or unconsciously evaluates his/her input and how this is perceived by others. This finding agrees with that of Mausner, Peterson and Capwell (1957, cited in Eduwen, 2008) that workers who identify

TABLE 3
Model Summary of Regression Analysis of Dimensions to Job Satisfaction of School Counsellors

Mode	R	R Square	Adjusted R Square	Std. Error of the estimate	Change Statistics				
					R Square	F. Change	Df1	df2	Sig. F Change
1	.637a	.406	.401	4.97004	.406	81.258	1	119	.000
2	.827b	.684	.679	3.63801	.279	104.095	1	118	.000
3	.904c	.818	.813	2.77415	.134	85.932	1	117	.000
4	.961d	.923	.921	1.80708	.105	159.736	1	116	.000
5	1.000e	1.000	1.000	.00000	.077	4.175	1	115	.000

a. Predictors: (Constant), Promotion
b. Predictors: (Constant), Promotion, Salary
c. Predictors: (Constant), Promotion, Salary, Social Support
d. Predictors: (Constant), Promotion, Salary, Social Support, Job Tenure.
e. Predictors: (Constant), Promotion, Salary, Social Support, Job tenure, Supervision.

with the group are more satisfied and are more likely to have their interpersonal and friendship needs met. This is further buttressed by the findings of Collins (2008) that individuals who had a variety of support networks such as work, family, friends, and community were better adjusted at work while those individuals with deficient social networks experience more stress and are less able to cope.

This study found a positive relationship between supervision and job satisfaction of school counsellors. This suggests adequate level of supervision by school principals over counsellors in the performance of their responsibilities. Also, it is an indication that government officials are effective in their monitoring and supervision of school counsellor. This finding buttressed those of DeMato and Curcio (2004) and Evans and Hohenshil (1997) that supervision is vital to job satisfaction and should be based on the following supervision variables: number of hours per week; length of time the supervisor had been a clinical supervisor; educational level of the supervisor; and whether the supervisor is a clinical or administrative supervisor.

CONCLUSION

Based on the findings, this study concludes that the majority of secondary school counsellors in Midwestern Nigeria are satisfied with their jobs; and that promotion is the most significant predictor of job satisfaction among them

IMPLICATIONS FOR BEST COUNSELLING PRACTICES

In guidance and counselling literature, there is obvious evidence suggesting that job satisfaction among school counsellors has been widely researched in few developed economies. But little is known about job satisfaction among school counsellors in developing countries, which this study and future ones hope to fill. Constant research on job satisfaction will obviously help the profession to appreciate the level of job satisfaction among counsellors, which is fundamental to quality counselling service delivery. Therefore, continuous research on job satisfaction among school counsellors must be periodically conducted if the profession is to guarantee best practices across the globe.

It is the expectation of this study that greater job performance/ productivity among school counsellors can be further sustained across the globe, if governments and school boards pay greater attention to the welfare of school counsellors especially through enhanced remunerations, guaranteed job security, adequate social support and provision of well equipped counselling centres

Since promotion is the major predictor of job satisfaction, it is therefore recommended that promotion decisions should be based on merit and performance. Managers of schools should ensure that performance evaluations are fair and bias –free. Promotion based on merit and performance will encourage better performance, and lead to greater level of job satisfaction and ultimately

higher productivity. In addition, further research should be conducted across the globe to determine the effectiveness of promotion as a mechanism for eliciting efforts and reducing turn over relative to other mechanisms such as pay increase and job tenure.

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Acquisition of the Verb Movement Parameter in English by Adult Arabic Speakers

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ABSTRACT

This study investigates the acquisition of the verb movement parameter in English by adult Arabic-speaking learners of English as a Second Language (ESL)[1]. English and Arabic differ in the settings they adopt for the verb movement parameter. English is [-strong], while Arabic is [+strong]. Accordingly, the placement of the verb with respect to negation, adverbs and floating quantifiers (FQs) in English are considered difficult to acquire for adult Arabic ESL learners. In order to examine the nature of adult Arabic ESL learners' interlanguage (IL) grammar at the L2 ultimate attainment level as well as the extent to which the adult Arabic ESL learners can reset the verb movement parameter and correctly place the verb with respect to negation, adverbs and FQs in finite and non-finite contexts with lexical and auxiliary verbs, an oral production task was conducted with 77 adult Arabic ESL learners who were subdivided into three proficiency levels (lower-intermediate, upper-intermediate and advanced). The results reveal that the Arabic ESL learners, even at ultimate attainment level, have great difficulty in resetting the parameterized property associated with the verb movement. These results support the Failed Functional Features Hypothesis (FFFH) (Hawkins and Chan, 1997) which proposes that post-childhood adult L2 learners are unable to reset parameters from their L1 values to the L2 settings where these differ from the L1 settings.

Keywords: Second Language Acquisition, verb movement parameter, Failed Functional Features Hypothesis, Adult L1 Arabic speakers, Negation, Adverbs, Floating Quantifiers

INTRODUCTION

Universal Grammar theory (UG), the theoretical framework adopted for the present study, was postulated by Chomsky in the 1950s as an attempt to describe the

constitution of language knowledge, and to explain the language acquisition and production interactions that take place in the language faculty. Accordingly, language acquisition, native or non- native, means setting all the parameters of UG appropriately (Cook & Newson, 2007, p. 59). This Chomskyan approach to language acquisition has inspired hundreds of scholars to investigate the nature of these assumed grammatical categories and the research is still ongoing.

Among current views on the acquisition of functional categories in post-critical period L2 (second language) acquisition, a major distinction can be made among views that contend that there is no access to UG, those that claim that access to UG is partial and those that maintain that there is full access to UG. According to the partial access hypothesis, principles of UG remain accessible in L2 acquisition but parameter values cannot be reset (Hawkins & Chan, 1997). This entails that L2 learners only have access to the functional categories and feature values available from their first language (L1) (see e.g. Muneera & Wong, 2011).

Advocates of the partial accessibility to UG position (e.g. Hawkins & Chan, 1997; Tsimpli & Dimitrakopoulou, 2007; Hawkins & Casillas, 2008) have further argued that adult L2 acquisition of functional categories such as tense and agreement, functional features and parameter setting are subject to a critical period, in which categories and formal features not instantiated in the L1 grammar are not available to post-critical

period L2 learners. Functional categories are grammatical categories which play a formal role in a sentence and the learning of these categories is essential to the acquisition of L2. Hawkins and Chan (1997) provide evidence from the acquisition of wh-movement by intermediate and advanced speakers of Chinese, and argue that Chinese speakers did not acquire the strong value of the [+wh] feature of English complementizers. They attribute the difficulties in achieving native- like attainment to the critical period that affects functional features in the syntax that host inflectional morphology.

The Failed Functional Feature Hypothesis (FFFH) espoused by Hawkins and Chan (1997) is one of the partial access models that addresses the role of the L1, the nature of linguistic representations in interlanguage (IL) grammars and the issue of the critical period. It provides an explanation for the apparent failure of most adult L2 learners to achieve native-like attainment. Based on Chomsky's (1986) Principles and Parameters framework, Tsimpli and Roussou (1991) argue that learners are unable to reset parameters, and as a result, the L2 will be unattainable if the L1 and the L2 parameter values are different. This is known as the No Parameter Resetting Hypothesis. This position was further developed by Smith and Tsimpli (1995), who highlight the parameterization of functional categories, assuming that in post-critical period, which is generally said to be after the age of seven (see e.g. Johnson & Newport, 1989, pp. 60-99), L2 learners

cannot acquire new functional categories (e.g. tense and agreement), functional features (e.g. [±past]) or feature strength (e.g. feature strength of T [±strong]).

Hawkins and Chan (1997) extend this claim and propose the FFFH, developing the view that L2 learners have different mental representations from those of native speakers. Therefore, new parametric values as instantiated in functional categories and their associated features are inaccessible in post-critical period L2 acquisition. As a result, the post-critical period acquisition of those functional features by L2 learners will tend to diverge from those of native speakers due to the differences between L2 learners' L1 parameter settings and the target L2 parameter settings (Hawkins & Chan, 1997, p. 189). In other words, L2 learners may be able to map features from functional categories in their L1 onto new L2 morphology, but will not have access to the functional features of the L2 (Hawkins & Chan, 1997, pp. 188-199). They may use the morphology of the target language but with the feature specifications of their L1. This means that the L2 learners' underlying competence of the target L2 grammar in relation to the parameterized functional features is different from those of the native speakers' underlying competence (Hawkins & Chan, 1997, p. 189). This explains the observation that L2 learners despite their best effort could only arrive at near native-like attainment in the acquisition of an L2[2].

Hawkins and Chan's (1997) study investigate the extent to which L1 Chinese learners of L2 English could acquire English operator movement in restrictive relative clauses which is assumed to be lacking in Chinese. Chinese, unlike English, lacks a [wh] feature; therefore, L1 Chinese learners will be unable to acquire the [wh] feature in English, the L2. In contrast, French has the [wh] feature; hence, L2 learners should have no problem as French and English share this property. Hawkins and Chan's results show that Chinese learners are significantly different from the French learners, even at the advanced levels. In other words, in the case of learners whose L1 functional feature specifications are different from the L2, fossilization will occur, such that grammatical development stabilizes short of the target grammar (see e.g., Lardiere 1998a, 1998b, Franceschina 2001, White 2003).

Hawkins and Chan have further asserted that in cases where L2 learners' performance approximates that of the native speakers of the target language, this cannot be the result of changes in the specification of functional categories. Instead, some other operation that does not involve parameter resetting, might be involved, producing the observed restructuring of the learners' grammar away from the L1 and towards the L2 (1997, pp. 199-200). In short, UG is said to be accessible in L2 acquisition in "some attenuated form" (Bley-Vroman, 1989) because a systematic divergence of the near-native grammars from those of the L2 target grammars has occurred.

On the other hand, L2 grammars are also considered to be attainable grammars due to the full availability of UG principles that constrain the construction of mental

grammars in adult L2 learners. However, divergence occurs due to deficit relating to L1 influence, that is the different parameter settings of the parameterized features associated with functional categories between learners' L1 and the target L2 (Hawkins & Chan, 1997, p. 189). Thus, L2 learners are constantly developing IL grammars that are different from the target grammars but are nevertheless constrained by UG (White, 1996, in Mitchell & Myles, 2004, p. 65).

The idea of a syntactic deficit in the IL grammars of learners whose L1s lack the corresponding functional categories and features was further developed by other researchers. In this context, advocates of the Representational Deficit Hypothesis (RDH) (e.g. Hawkins, 2005; Hawkins & Hattori, 2006) and the Interpretability Hypothesis (IH) (e.g. Tsimpli, 2003; Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2008) have proposed that it is only the uninterpretable syntactic features which are inaccessible in post-critical L2 acquisition, and as a consequence, these features remain problematic for L2 learners. According to this view, the uninterpretible features, except for those already activated in the L1 grammar, will pose a learning problem for adult L2 learners because they are inaccessible for modification beyond the critical period. On the other hand, the properties associated with the interpretable features are acquirable in L2 acquisition even if they are not available in the L2 learners' L1 grammar because they remain accessible throughout life. Findings from a number of

studies (e.g. Hawkins *et al.* 2002; Hawkins & Liszka 2003; Hawkins & Franceschina 2004; Hawkins & Hattori 2006; Hawkins *et al.*, 2008) have suggested that L2 learners' IL grammars lack uninterpretable features; thus supporting the view that L2 learners have partial access to UG.

Hawkins (2004) proposes that L2 learners' syntax is selectively impaired and marked by 'a representational deficit' due to the lack of parameterized formal features and functional categories. Those not present in the L1 are no longer accessible for acquisition following the critical period. However, accounts of the partial UG availability stand consider uninterpretable features (such as φ-features on verbs) to be maturationally constrained and a permanent locus of L2 divergence. In contrast, interpretable features (such as [definiteness], φ-features on nouns) are UG-accessible at all times (Hawkins & Hattori, 2006; Tsimpli & Dimitrakopoulou, 2007). Further, Tsimpli and Dimitrakopoulou (2007) and Hawkins and Casillas (2008) argue that representational deficits in the L2 grammar are restricted to the uninterpretable syntactic features (e.g. agreement features of verbs) and do not apply to interpretable features (e.g. tense features of verbs). Similarly, Hawkins and Liszka (2003) claim that the L1 Chinese learners of L2 English in their study are unable to acquire the tense feature due to the fact that such feature is lacking in Chinese; hence, the L2 learners have problems acquiring tense morphology on verbs in English. The inability to acquire L2 uninterpretable features leads to omission

of morphology in the case of tense or inappropriate substitution of one form for another in the case of gender.

In summary, the claim made by the FFFH asserts the influence of the L1 in the L2 learners' IL grammar through the transfer of features and parameters, and in cases where the L1 grammar lacks certain functional features that need to be checked in syntactic representations, L2 morphological errors result (see e.g. Muneera & Wong, 2011, pp. 129-130). At times when adult L2 learners' production approximates the target surface structure this is because they actually rely on other cognitive learning skills[3] (Hawkins & Chan, 1997, p. 200). The revised version of the FFFH refines the claim that it is the uninterpretable functional features that are inaccessible to L2 learners especially adults L2 learners (e.g Hawkins *et al*., 2002; Hawkins & Liszka 2003; Hawkins & Hattori, 2006; Hawkins *et al*., 2008). This study investigates the acquisition of the verb movement parameter in English by adult Arabic-speaking learners of English as a Second Language (ESL), where English and Arabic differ as to the settings they adopt for the parameter.

THE VERB MOVEMENT PARAMETER

The verb movement parameter or V–to–I movement (Pollock, 1989, 1997) involves the movement of the [+finite] verb from its VP–position to a functional head linked to infle(ctional) features. Within the Minimalist Program (MP) framework (Chomsky, 1995), [+finite] thematic verbs may move to Infl

before Spell-out to have their strong, and therefore visible, morphological features checked and erased to avoid a violation of the Full Interpretation Principle (FIP). This movement, or raising, of the verb occurs in a variety of structures including negation and adverb placement and placement of floating quantifiers among others. The parameter in question is alternatively referred to as the verb movement parameter (Pollock, 1997), the V-Raising parameter (Culicover, 1997), the V-to-I parameter (Déprez, 1994) or (the strength of) Agr parameter, for it depends on the strength of morphological verbal features. The parametric effects of strong versus weak morphological features have been studied mostly with French (Déprez, 1994; Emonds, 1978; Pollock, 1989, 1997) and English (e.g., Chomsky, 1995; Culicover, 1997; Pollock, 1989, 1997; Roberts, 1998). However, Arabic and other languages with asymmetric agreement word order have also been studied (Bolotin, 1995; Ouhalla, 1994).

Previous research on V-movement has led to the conclusion that this process does not apply in the same manner in all natural languages (Rahhali & Souâli, 1997, p. 320). In other words, in languages where the V-features in Infl are strong, there is overt movement of the [+finite] verb, which raises from the VP to Infl for feature checking. On the other hand, languages in which V-features are weak, overt movement does not take place. Instead, features are checked at LF; this movement is not 'visible' in the syntax and is said to be covert (White, 2003, p. 11). If we suppose further that French

and English share the D-Structure form in (1), where (Adv) is an optional adverbial position that can be occupied by VP adverbs like *often/souvent* and *seldom/rare-ment*, then we can account for the minimal pairs in (2)-(4) as the surface reflex of one abstract syntactic difference, the respective scope of Verb Movement in the two languages.

1. $[_{IP} \text{ NP I } ([_{Neg} \text{ not/pas}]) [_{VP} \text{ (Adv) V . ..]}]$

2. a.*John likes not Mary.
    b. Jean (n') aime pas Marie.

3. a.*Likes he Mary?
    b. Aime-t-il Marie?

4. a.*John kisses often Mary.
    b. Jean embrasse souvent Marie.
    c. John often kisses Mary.
    d.*Jean souvent embrasse Marie.

(Examples are taken from Pollock, 1989, p. 367)

Clearly, (2a) is excluded because for the verb to end up in pre-negative position, it would have to move to Infl, which it cannot since English Verb Movement is restricted to *have* and *be*. (2b) is fine because all lexical verbs undergo Verb Movement in French. (3a) is straightforwardly excluded if we analyze Aux-NP Inversion as movement to the left of Infl (say, (head) movement of Infl to Comp, as in Chomsky (1986)), i.e. for a lexical verb like *kiss* to occur in presubject position, it would first have to move to Infl, which it cannot. Therefore, (3b) is fine for exactly the same reasons as (2b): lexical verbs move to Infl in French. Given the structure in (1), the facts in (4) also follow straightforwardly. Assuming

that neither French nor English allows for Adverb Movement (to the right), the only way for *often* in (4a) to end up between the verb and its object would be for the verb to move to Infl, which it cannot do. The only acceptable English sentence is therefore (4c). Since *embrasser* can, on the contrary, move to Infl, (4b) is accounted for. As for the ungrammaticality of (4d), it can also be dealt with if we assume, as Emonds (1978) did, that French Verb Movement to Infl is obligatory.

Due to its rich verbal agreement features, Arabic is analyzed with the functional feature strength set to [+strong], while the functional feature strength in English is set to [-strong]. Weak (i.e. [-strong]) features are invisible at PF and thus the relevant categories are not able to move overtly. Take the following English sentence for example—*Fatima always cooks fish*. English agreement is weak/[-strong]; therefore, the main verb does not have to raise overtly in English. Conversely, [+strong] features are visible at PF so that the features of the relevant categories have to be checked overtly. Consider the Arabic sentence *taTbuXu fatimatu daa?iman ssamaka/Fatima always cooks fish*. Arabic agreement is [+strong]; consequently, the main verb has to raise overtly.

Generally, the term verb movement or verb raising (Pollock, 1989, 1997) refers to the displacement of the verb from its base position as a head of the VP to some higher functional head in the functional layer. Within minimalism, it is assumed that all verbs enter the syntactic derivation already

inflected for both tense and agreement features and that these only need to be checked against appropriate functional heads above VP. These functional heads contain abstract morphosyntactic features which serve to check the corresponding inflectional features of the lexical heads. In order for feature checking to take place, the verb has to move from its base position to the relevant functional heads in the functional layer above the lexical layer. Hence, all types of movement according to the MP is triggered by the feature-checking requirement.

Arabic exhibits verb movement for all [+finite] thematic verbs whereas in English verb movement is limited (see e.g. Muneera & Wong, 2011). The setting of the verb movement parameter in both English and Arabic can be determined by observing the placement of the verb in relation to the left-adjoined elements, such as the negation marker, adverbs and floating quantifiers (see examples 5, 6, 7, & 8).

English [+finite] thematic verbs cannot move to Agr via T due to the weak nature of agreement; hence, it appears to the right of negation (5a), adverbs (5b) and floating quantifiers (FQ) (5c). However, auxiliaries (see 6a-6c) and the copula be (see 7a-7c) can do so.

In Arabic, on the other hand, verb movement is not blocked by negation. The thematic verbs in [+finite] contexts must move across the subject and any other XP

5	a.	The boy does not eat grapes	Negation placement
		S Neg V O	Thematic verb
	b.	The boy always eats grapes	Adverb placement
		S Adv V O	Thematic verb
	c.	All the boys ate grapes	FQ placement
		FQ S V O	Thematic verb
6	a.	The boy is not eating grapes	Negation placement
		S aux Neg V O	Auxiliary Be
	b.	The boy is always eating grapes	Adverb placement
		S aux Adv V O	Auxiliary Be
	c.	The boys were all eating grapes	FQ placement
		S aux FQ V O	Auxiliary Be
7	a.	The lady is not at the hotel	Negation placement
		S Cop Neg Comp	Copula Be
	b.	They are always ready for exams	Adverb placement
		S Cop Adv Comp	Copula Be
	c.	My parents are both doctors	FQ placement
		S Cop FQ Comp	Copula Be

---

immediately following the negative marker, so that neither the subject nor any other XP will be allowed to intervene between the negative marker and the verb (8a). Moreover, lexical verbs may also precede VP adverbs (8b) and FQs (8c), in contrast to English[4].

In English, [-finite] thematic verbs do not raise at all, as it is the case for [+finite] thematic verbs. Therefore, they cannot appear immediately before the negative marker *not* (9a), a frequency adverb (9b), or an FQ (9c) whereas [-finite] auxiliaries and the copula *be* may raise past negation and adverbs. They are free to move to Agr and may optionally appear either immediately

before or after negation, adverbs and FQs.

Finally, as opposed to English, there are no infinitives in Arabic. However, either nominalization (see 10a) or finite clauses (see 10b and 10c) can be used to express the notion of non-finiteness.

Thus, whether or not a finite verb raises overtly is determined by strength of features (i.e. [±strong]) in higher functional categories. Arabic has strong Infl (Bolotin, 1995) while the English Infl feature is weak (Chomsky, 1995), i.e., the feature strength is set to [+strong] in Arabic and to [-strong] in English. Accordingly, in Arabic, the main verb overtly moves out of its base-generated position, while in English, it does not

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8	a.	maa ?akala ?al-waladu 3inaban	Negation placement
		not ate the-boy grapes	Thematic verb
		Neg V S O	
		'The boy does not eat grapes'	
	b.	ya?kulu ?al-waladu daa? iman 3inaban	Adverb placement
		eat the-boy always grapes	Thematic verb
		V S Adv O	
		'The boy always eats grapes'	
	c.	?akala ?al-?awaladu kulla-hum 3inaban	FQ placement
		ate the-boys all-clit(them) grapes	Thematic verb
		V S FQ O	
		'All the boys ate grapes'	
9	a.	Not to sleep enough makes you tired	Negation placement Non-finite thematic verb
	b.	To often sleep late is unhealthy	Adverb placement Non-finite thematic verb
	c.	To all own cars is the boy's ambition	FQ placement Non-finite thematic verb

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(Chomsky, 1995; Pollock, 1989). In other words, Arabic exhibits verb movement for all finite lexical verbs whereas in English verb movement is limited to auxiliary and copula raising.

Differences between the behavior of finite and non-finite verbs in English and Arabic have been accounted for in terms of verb movement. Under this account the setting of the verb movement parameter can be determined by observing the placement of the verb in relation to certain other elements that occur left adjoined to the VP, such as the negation marker, adverbs and FQs (what have been called left-adjoined elements). In languages that have a positive value of the parameter [+strong], such as Arabic, the verb precedes the left-adjoined elements; in languages that have a negative value of the parameter [-strong], such as English, the verb follows the left-adjoined elements.

THE STUDY

This study investigates the acquisition of English verb movement parameter by adult Arabic ESL learners in relation to the issues concerning the FFFH in SLA (Second Language Acquisition) within the minimalist program (MP). The paper will look at data gathered from an oral production task (ORPT) with the aim of testing learners' underlying knowledge of English verb movement parameter. The verb movement parameter is selected in this study due to the fact that this property does not apply in the same fashion in all natural languages. Languages such as English have been shown to involve only covert verb movement. With regard to verb movement in Arabic, there is clear evidence that it takes place overtly. This study aims to examine the consistency of the FFFH in explaining the acquisition of English verb placement with respect to negation, adverbs and floating quantifiers by adult Arabic speakers. In particular, this study tests the hypothesis of the inaccessibility of functional features which is not instantiated in adult learners' L1 inventory due to the critical period. Towards this end, the study sets out to answer two research questions:

1. Given exposure to the English language, to what extent can the adult Arabic

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10 a. mo3amalata ?al-waledayni bighayri iHtiraam amrun moXjil-un
       treatment   the-parents   without   respect   thing shameful
       'To treat one's parents with no respect is a shame.'

   b. ?al-laði laa-**yu-3amilu** waleday-hi b-iHtiraam-in 3aaq
      who   Neg-3sgm.treats   parents-his with-respect   shame
      'He who does not treat his parents respectfully is a shame.'

   c. 3aqun   man-laa-**yu-3amilu** waleday-hi b-iHtiraam
      shame   who- Neg-3sgm.treats parents-his with-respect
      'It's a shame not to treat one's parents respectfully.'

ESL learners reset the verb movement parameter and correctly place the verb with respect to:

a.) negation in finite contexts?

b.) negation in non-finite contexts?

c.) adverbs (frequency and manner adverbs) in finite contexts?

d.) floating quantifiers (FQs) in finite contexts?

2. Given exposure to the English language, what is the nature of adult Arabic ESL learners' verb movement parameter in their IL grammar at the L2 ultimate attainment level? Is there evidence to indicate that the adult L1 Arabic speakers of L2 English have a different underlying representation from English native speakers?

PARTICIPANTS

In total 77 adult Arabic native speakers participated in this study. The Arabic ESL learners were subdivided into three proficiency groups (the lower-intermediate group (LIG), the upper-intermediate group (UIG) and the advanced group (AG)) on the basis of their performance on an independent measure of proficiency, the Oxford Placement Test (OPT) (Allan, 1992). The participants were undergraduate university students in Yemen from the science and social science disciplines. Their average age was 22.67 years. All of the participants started learning English at the age of 12 and a few of them at 13 years of age at preparatory/pre-secondary schools. Their average age at first exposure to English was 12.44 years. They studied English for three years before they began secondary school and they continued to learn English at secondary schools. In addition, first year undergraduate students had to learn English as a requirement course in Yemani Universities. This means that the learners have had at least seven to eight years of tutored exposure to the English language when they begin university level education. However, most learners had very little contact with English outside the classroom before they joined the university.

TEST INSTRUMENT

The test instrument was an oral production task (ORPT) (see similar tasks used by Wen, 2006; McCarthy, 2006; Epstein *et al.* 1998; Polio, 1994). This was a story telling task based on a set of pictures given. First, the Arabic ESL learners were asked to take a few minutes to look over the pictures. Then, they were asked to orally narrate the story as they look through the pictures one by one starting with "One day…" and using the verbs and phrases given under each picture. There were no right or wrong answers in this story telling task. The important thing was that they say as much as they can. If the learners do not know a particular word in English, they were allowed to ask the instructor. The verbs provided with the pictures were in the infinitive form and the L2 learners had to conjugate them where necessary.

The learners' oral production was taped and transcribed. The instances of

grammatical and ungrammatical placement of verbs with respect to negation, adverb and floating quantifiers in finite and non-finite contexts with thematic as well as *be* auxiliary and copula *be* verb forms were counted.

The possible grammatical sentences in English can be classified into the following types:

- Type 1 (Tl): grammatical negation in finite contexts (GNFC), that is correctly placed negation items with finite clauses (e.g. *They do not watch movies in the cinema*).

- Type 2 (T2): grammatical negation in non-finite contexts (GNIFC), that is correctly placed negation items with non-finite/infinitive clauses (e.g. *Not to succeed at the university causes anxiety*).

- Type 3 (T3): grammatical adverb placement in finite contexts (GAdvFC), that is correctly placed adverbs with finite clauses (e.g. *John completely lost his mind*).

- Type 4 (T4): grammatical floating quantifier (FQ) placement in finite contexts (GFQFC), that is correctly placed floating quantifiers with finite clauses (e.g. *My teachers both agree on this subject; The guests are all sleeping in this room*).

The possible ungrammatical sentences are the following:

- Type 1 (Tl): ungrammatical negation in finite contexts (UNFC), that is wrongly placed negation items with finite clauses (e.g. *The girl not drinks milk from the fridge*).

- Type 2 (T2): ungrammatical negation in non-finite contexts (UNIFC), that is wrongly placed negation items with non-finite/infinitive clauses (e.g. *To sleep not enough makes you tired*.).

- Type 3 (T3): ungrammatical adverb placement in finite contexts (UAdvFC), that is wrongly placed adverbs with finite clauses (e.g. *John lost completely his mind*).

- Type 4 (T4): ungrammatical floating quantifier (FQ) placement in finite contexts (UFQFC), that is wrongly placed floating quantifiers with finite clauses (e.g. *Jane and Sarah built both a house; *The fans all are gathering beside the entrance to the theatre*).

The mean percentages of correct production for grammatical items and incorrect production for ungrammatical items for each item type were tallied and analyzed. Then, statistical tests were also run on the learners' production for each of these typess.

RESULTS AND INTERPRETATION

This section presents the findings of the grammatical and the ungrammatical oral production data which are aimed at testing the learners' underlying knowledge of the feature strength of T [±strong] that accounts for the placement of the verb with respect to negation, adverbs and floating quantifiers

(FQs) in finite and non-finite contexts with thematic as well as *be* auxiliary and copula *be* verb forms. Both of the grammatical and the ungrammatical sets contain the following: type 1 (Tl): negation in finite contexts, type 2 (T2): negation in non-finite contexts, type 3 (T3): adverbs in finite contexts, and type 4 (T4): floating quantifiers (FQs) in finite contexts.

Production of Grammatical Item Types

Table 1 presents the data obtained from the three proficiency groups' production of grammatical item types on verb movement. Figure 1 shows the same results visually.

As shown in Table 1 and Fig.1, the performance of the advanced learners was the highest on (T1) GNFC constructions. However, the results showed that the advanced learners scored below 80% for this construction (76.00%) indicating that they have not achieved native like level (the cut-off point is 80%, following e.g. Wong, 2002). The performance of the upper-intermediate and the lower-intermediate learners was much lower on (T1) GNFC (57.14% and 29.03% respectively). In general, the advanced learners had better performance on negation with thematic verbs (79.15%) than on negation with *be* verb forms (*be* auxiliary/copula) (72.85%). Similarly, the upper-intermediate learners were more accurate on items with thematic verbs (61.86%) than on *be* verb items (52.42%). The lower-intermediate learners hardly used negation with *be* verb forms[5].

With regard to (T2) GNIFC constructions, the data showed that there

was not a single instance where the L2 learners used negation in non-finite contexts. This can be attributed to the fact that unlike English, Arabic (the learners' L1) has no infinitives. The notion of non-finiteness, however, can be expressed through nominalization or by tensed/finite clauses. Therefore, the L2 learners did not tend to use negation in finite contexts in their oral production, presumably due to the absence of the said category in the their L1 inventory.

Adverbs in (T3) GAdvFC constructions proved to be problematic for the less proficient learners whose scores were rather low (45.45% for the lower-intermediate and 25.00 % for the upper-intermediate learners respectively). Although their performance increased with proficiency (73.91%), the advanced learners at ultimate attainment level did not achieve native like level. Again, the learners' production of placement of adverbs with thematic verbs was better than that with *be* auxiliary or copula for most of the L2 learners, particularly for the advanced learners (77.82% for the thematic verbs and 70.82% for the *be* auxiliary or copula respectively).

As far as (T4) GFQFC constructions were concerned, results indicated that the accuracy levels for all learners were also low (below 80%) across all groups (68.75%for the advanced group, 57.58% for the upper-intermediate and 44.12% for the Lower-intermediate group). These results suggest that placement of floating quantifiers in finite clauses had not been acquired to a native like level by the Arabic ESL learners although accuracy did increase with proficiency.

TABLE 1
Production of Grammatical Item Types by the 3 Groups

Item type	Proficiency Group			(%)
	Advanced N=20	Upper-Intermediate N=25	Lower-Intermediate N=32	
T1 (GNFC)	19/25 76.00%	16/28 57.14%	9/31 29.03%	44/84 52.38%
T2 (GNIFC)	0/0 00.00%	0/0 00.00%	0/0 00.00%	0/0 00.00%
T3 (GAdvFC)	17/23 73.91%	10/22 45.45%	9/36 25.00%	36/81 44.44%
T4 (GFQFC)	22/32 68.75%	19/33 57.58%	15/34 44.12%	56/99 56.57%
Average	58/80 72.5%	45/83 54.22%	33/101 32.67%	136/264 51.52%

GNFC= grammatical negation in finite contexts; GNIFC= grammatical negation in non-finite contexts; GAdvFC= grammatical adverb placement in finite contexts; GFQFC= grammatical floating quantifier placement in finite contexts
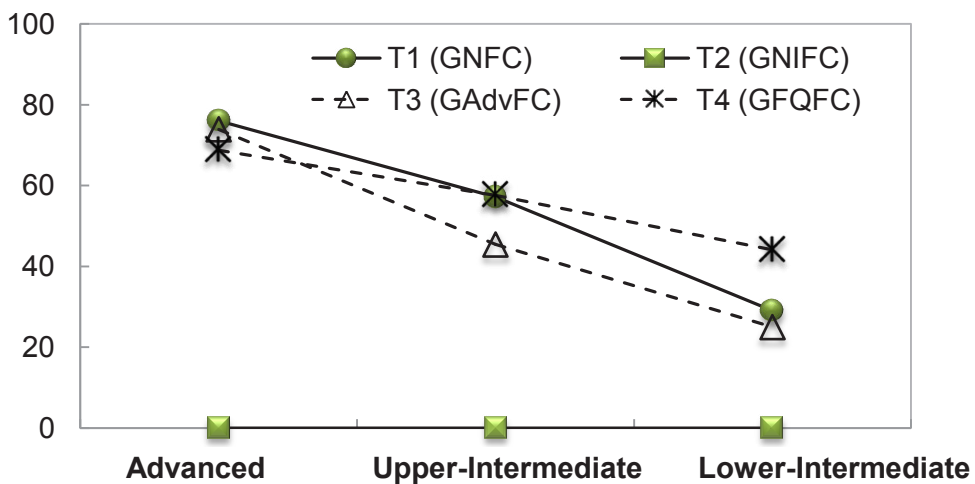
Fig.1: Comparison of Production of Grammatical Item Types for the 3 Groups

Performance on Ungrammatical Item Types

Table 2 and Fig.2 display the data obtained from the participants' performance on ungrammatical items.

The data indicate that the lower-intermediate learners seemed to produce the highest number of errors for (T1) UNFC (70.97%). Out of the 31 instances in which negation was used, 22 instances were of inappropriate use involving either wrongly placed thematic verbs or *be* verb forms (*be* auxiliary and copula) preceded by negation. Similarly, out of the 28 instances

in which negation was used, the upper-intermediate group showed 12 instances of inappropriate use. However, the higher the proficiency level, the better the performance. Only six of the 25 instances of negation placement produced by the advanced group were inappropriate placement of negation (24.00%). Some examples of inappropriate

use of negation in finite contexts are given below:

i. *They **not get** the ball back.   (from advanced 16)

ii. *They **not are** happy because, the ball fall in the backyard.   (from upper-intermediate 13)

TABLE 2
Production of Ungrammatical Item Types by the 3 Groups

Item type	Proficiency Group			%
	Advanced N=20	Upper-Intermediate N=25	Lower-Intermediate N=32	
T1 (UNFC)	6/25 24.00%	12/28 42.86%	22/31 70.97%	40/84 47.62%
T2 (UNIFC)	0/0 00.00%	0/0 00.00%	0/0 00.00%	0/0 00.00%
T3 (UAdvFC)	6/23 26.09%	12/22 54.55%	27/36 75.00%	45/81 55.56%
T4 (UFQFC)	10/32 31.25%	14/33 42.42%	19/34 55.88%	43/99 43.43%
Average	22/80 27.5%	38/83 45.78%	68/101 67.33%	128/264 48.48%

UNFC= ungrammatical negation in finite contexts; UNIFC= ungrammatical negation in non-finite contexts; UAdvFC= ungrammatical adverb placement in finite contexts; UFQFC= ungrammatical floating quantifier placement in finite contexts
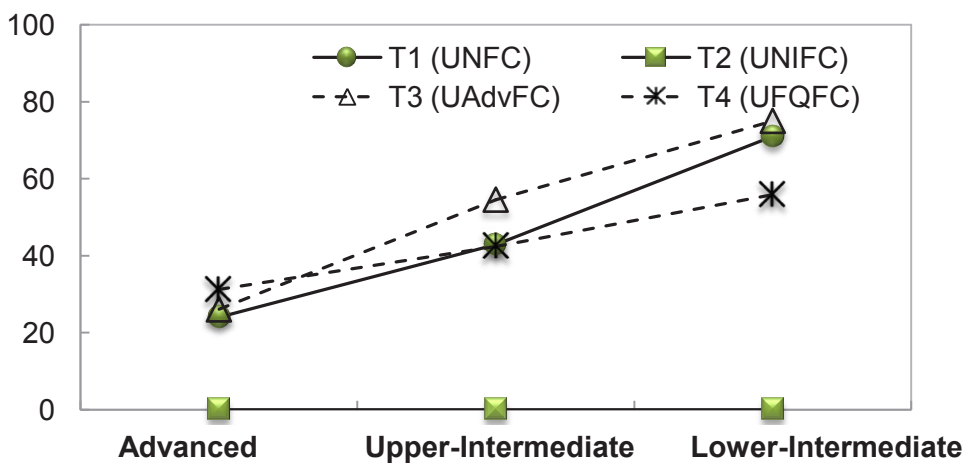
Fig.2: Comparison of Production of Ungrammatical Item Types for the 3 Groups

iii. *They **not played** in the yard.   (from upper-intermediate 10)

iv. *The woman **not invited** a lot of children for a birthday for her two boys.   (from lower-intermediate 9)

v. *Therefore, he is very shy, he **not is laughing and playing** while the other laughing and playing.   (from lower-intermediate 23)

Adverb placement as shown in UAdvFC constructions seemed to be also problematic for the L2 learners. Out of a total of 81 instances of adverb placement, there were 45 instances of misplaced adverbs across the three groups. Again the performance of the lower-intermediate learners was the least favourable on (T2) UAdvFC (75.00%) compared to that of the upper-intermediate (54.55%) and the advanced learners (26.09%). Further, it was observed that adverb misplacement was higher with *be* auxiliary verb forms than with thematic verbs. An interesting finding is the L2 learners hardly used adverbs with copula *be* at all. Some examples of the ungrammatical placement of adverbs found in the oral production data are given below:

i. *But one boy **slowly is knocking** the door and his friends are worried.   (from upper-intermediate 13)

ii. *The boys **kick accidentally** the ball over the wall.   (from lower-intermediate 17)

The results for sentences involving floating quantifiers (i.e. (T4) UFQFC) also indicate that the learners displayed poor performance. The data presented above show that out of a total of 99 instances of floating quantifiers in the learners' oral production, there were 43 instances of misplaced floating quantifiers across the three groups. Yet again the performance of the lower-intermediate learners was less favourable (55.88%) compared to that of the upper-intermediate learners (42.42%) and the advanced learners (31.25%). Some examples of misplaced floating quantifiers which include either thematic verbs followed by floating quantifiers or *be* verb forms (*be* auxiliary and copula) preceded by floating quantifiers are given below:

i. *The children **all are playing** and so they are very happy.   (from advanced 19)

ii. *Then the two boys **explain both** what happened.   (from advanced 3)

iii. *The boys **run all away** to get the ball with two children.   (from upper-intermediate 4)

iv. *The boys **both were running** in the yard of the house to play.   (from lower-intermediate 10)

In sum, the placement of the verb with respect to negation, adverbs and floating quantifiers in finite and non-finite contexts with thematic, *be* auxiliary and copula *be* verb forms proved to be problematic for the adult Arabic ESL learners who seemed to have stabilized at below 80%, an accepted cut off point for native/near native-like level of acquisition.

DISCUSSION AND CONCLUSION

The acquisition of the verb movement parameter can be determined by looking at the syntactic behaviour of the verb in relation to certain other elements that occur

left adjoined to the VP, such as negation element, adverbs and floating quantifiers (FQs). Arabic is a [+strong] language while English is [-strong] where verb movement is restricted to only auxiliary and copula raising. Therefore, to say that the adult Arabic ESL learners have acquired the English verb movement parameter, they should set the features values from [+strong] to [-strong], thus placing the thematic verbs after negation (NegV), adverbs (SAdvV), and FQs (SFQV). The findings of the oral production task showed that resetting the English verb movement parameter seemed to be problematic for the adult Arabic learners. They have stabilized below 80% in terms of accuracy of their production of associated construction types. The adult Arabic ESL learners seemed to have difficulty with T1 (negation in finite contexts); therefore they have erroneously placed thematic verbs before negation (SVNeg) (e.g. *they played not in the yard*). Further, the results of T2 (negation in non-finite contexts) showed that there was not a single instance where the L2 learners used negation in non-finite contexts. This can be attributed to the fact that unlike English, Arabic has no infinitives**.** The notion of non-finiteness, however, can be expressed through nominalization or by tensed/finite clauses. Therefore, the L2 learners did not tend to use negation in non-finite contexts in their oral production. For T3 (placement of adverbs in finite contexts), the production data showed that the L2 learners were generally less than accurate in their placement of verbs in relation to adverbs. On the contrary, they

have produced ungrammatical constructions such as *the boys kick accidentally the ball over the wall*. The same holds true for T4 (placement of FQs in finite contexts) where the L2 learners misplaced the FQs after the verbs (e.g. *Then the two boys explain both what happened*). These findings suggest that the L2 learners, even at ultimate attainment level, did not recognize the impossibility of verb movement in English. Therefore, they have difficulty producing the NegV, SAdvV and SFQV orders, indicating failure to reset the parameters of [±strong] to their target values in English. Their performance seemed to show that the L2 learners were still indeterminate in their production and that their IL representations with respect to the placement of the verbs with negation, adverbs and FQs were inconsistent with those of native speakers. In other words, adult Arabic ESL learners' IL representations in post–critical period L2 acquisition diverge from that of the native speakers where L1 and L2 parameter settings differ (Hawkins & Chan, 1997). Similar findings were also found by Wong and Hawkins (2000), Wong (2002), and Muneera and Wong (2011).

In conclusion, this study has set out to contribute to the on-going debate concerning persistent difficulties posed by certain morphosyntactic properties in post-critical L2 acquisition. The findings presented in this study have shown that L1 Arabic speakers learning English as L2 exhibited the following behaviours: difficulty with negation in finite contexts, S-Adv-V constructions, and S-FQ-V orders.

Based on the findings, the main generalisation that can be made is that L1 V-movement persists in L2 English. This generalization is the most significant contribution in the study. It provides solid evidence that verb movement persists in L2 English. The results shows the validity of the generalization that the L1 Arabic learners had not acquired the English setting of the parameter and this generalization does work better within the FFFH (or perhaps a very highly flexible version of the FTFAH) compared to the other hypotheses.

Supporters of the FFFH assumption (see e.g. Smith & Tsimpli, 1995; Hawkins & Chan, 1997; Hawkins, 2000; Wong & Hawkins, 2000; Wong, 2002; Hawkins & Liszka, 2003; Hawkins & Hattori, 2006; Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2008) contend that access to UG is partially available but only through the L1. Features and functional categories that are not instantiated in the L1 but available in the L2 are impossible to acquire. Most importantly, the data indicate that the FFFH is the logical theoretical explanation of the findings discussed in the oral production task (ORPT).

The FFFH claims that in the process of L2 acquisition, a certain subpart of the Universal Grammar (UG) becomes inaccessible to L2 learners if that certain subpart is acquired beyond a critical period. Based on Johnson and Newport's (1989) study, the critical period can be as early as the age of seven. According to Smith and Tsimpli's (1995) assumption, the particular subpart has been identified to be features that are associated with functional categories found in the UG lexicon, which however, do not exist in the L2 learners' L1 inventory. It is said to be attributed to the disappearance of a layer of options in the UG lexicon which happens to provide options for parameter setting and to determine parametric differences or variations between languages. As a result, the L2 learners are no longer able to reset the L1 parameter setting into L2 settings nor are they able to transfer the features from their L1 into their L2 inventory. Such features are more appropriately known as parameterized functional features as such features are not necessarily present in all languages; rather they are selected by only certain languages. Hawkins (2004) proposes that L2 learners' syntax is selectively impaired and marked by 'a representational deficit' due to the lack of parameterized formal features and functional categories. If these are not present in the L1, they are no longer accessible following the critical period for acquisition of language.

The inaccessibility of the parameterized functional features in post critical period L2 acquisition causes L2 learners, particularly adults, to have persistent difficulty in the acquisition of the full significant functions of the features. The L2 learners are thus said to have a different underlying representation from the native speakers. Despite the difficulty, the L2 learners are said to be able to map new morphophonological material on the surface level by mapping L2 lexical items onto L1 syntax. Therefore, the learners are unable to achieve native

like performance and there appears to be variation in their linguistic ability due to L1 transfer that occurs in the L2 learners' production of IL grammars.

The results of this study seem to support the above hypothesis. The results show that adult Arabic ESL learners have failed to acquire the feature strength of English tense suggesting failure to reset the parameter form [+strong] to [-strong] so that they end up with the wrong setting for English. These features have become inaccessible to the learners due to the disappearance of the layer of options as well as the absence of the features in the learners' L1 inventory. Therefore, no parameter resetting happens here and the underlying representations of the learners' IL indeed diverge from those of the native speakers'. In some cases, the L2 learner might be able to produce the surface structures, however, this does not mean that they have acquired the underlying representations but rather they have resorted to other means. The data indicate that in the acquisition of an L2, learners are influenced by the absence of particular (parameterized) functional features in their L1 which are present in the target L2 and which are not subject to modification after the critical period.

The findings from the study have further contributed to the body of literature in the field of SLA. The implication from the findings indicate that learners may not be able to reset particular parameters already instantiated in their L1 (in this case the verb movement parameter), particularly those

associated with uninterpretable features. However, as experience would tell us, it may be possible for L2 learners to learn the surface structure associated with them by deploying other cognitive skills in an immersion context.

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ENDNOTES

[1] The Arabic learners are studying English as non-native speakers. Depending on where the learners are from, the term ESL may be more inclusive and includes English as a Foreign Language (EFL). For some people the reverse seems to be true.

[2] Supporters of the Mapping problem (Lardiere, 1998, 2000) and the Missing Surface Inflection Hypothesis (MSIH) (Prévost & White, 2000) have claimed that L2 learners have full and appropriate abstract knowledge of the functional categories and associated functional features, but sometimes fail to realize them in overt morphology. In fact, the proponents of the MSIH have argued that the presence or absence of morphology on the surface does not necessarily reflect that the underlying functional categories are not intact in L2 learner grammars. In other words, according to this account, representations for verbal inflectional morphology may be fully specified in the L2 grammar, but L2 learners may fail to produce the corresponding overt forms, due to performance limitations resulting from communication pressure (Prévost & White 2000, p. 129).

[3] These are skills such as problem solving, hypothesis testing, decision making and evaluating.

[4] The Arabic examples in this paper were adapted mostly from Benmamoun (2000) and Rahhali and Souâli (1997).

[5] To substantiate these results, a further study would be to investigate L2 learners whose L1 is similar to English in their acquisition of the same property.

Restorative Justice In Relation to Collectivism/Individualism, Shyness, and Conflict Resolution Method Preference

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ABSTRACT

Restorative justice has been widely practiced across countries, but it is still a relatively new concept in Malaysia. Its implementation in the nation is desired, however, there are issues of culture, shyness, and the people's preference of conflict resolution methods that can interfere with its effectiveness. This paper seeks to explore the individual degree of collectivism/individualism and shyness of the Malaysian people and the kinds of conflict resolution practice that they prefer. The findings showed that the sample is collectivistic and individualistic in general, but they are more collectivistic when it comes to decision making relating to criminal cases. Although the sample appears to be shyer, they seem to be less shy in criminal context. Restorative justice programs also seem to be a good fit in Malaysia since authority is a preferred way of resolving conflict, although they also prefer negotiation and mediation; and both are important elements in programs such as victim-offender mediation.

Keywords: Restorative justice, collectivism, individualism, shyness, conflict

INTRODUCTION

Restorative justice is an evolution of criminal justice system in many countries in the world. Rather than letting the court and the distant authorities decide what happens to the person who commits the crime, this practice lets the victims to come forward in the decision making process, and have a face-to-face session with the offenders (Wolhuter, Olley, & Denham, 2009). Hence, the offenders will be directly accountable to the victims. The movements of victims' rights that became the basis of restorative justice were initiated in the United States (Shapland, Willmore, & Duff, 1985; Austin/Travis County Victims' Services Task Force, 2005; Karmen, 2007).

Restorative justice is generally a practice that usually handles cases of minor offences such as mischief, assaults, and theft (Ministry of Public Safety and Solicitor General, 2009). However, lately it has been considered for more serious crimes such as rapes, and violent crimes. Being documented as effective in preventing recidivism (e.g. Umbreit, Coates, & Roberts, 2000; Umbreit, Coates, &Vos, 2004; Bradshaw, Roseborough, &Umbreit, 2006), the practice has gained acceptance worldwide and being utilized in many countries such as New Zealand (Galaway, 1995; Maxwell & Liu, 2006), South Africa (Venter & Rankin, 2006), and in the Europe (Hydle, 2008). In fact, restorative justice was, part of it, inspired by a long-standing tradition in Maori tribe in New Zealand that used to do conferencing between the offenders and the community (Marshall, 1999; Van Ness & Strong, 2010).

ISSUES TO CONSIDER BEFORE IMPLEMENTATION OF RESTORATIVE JUSTICE

Realizing its effectiveness in handling offenders and victims, Malaysia has begun to get acquainted with this concept although it has not been introduced in the country's criminal justice system (Prison Fellowship International, n.d.; Koshy, 2008). This is a great initiative since this might be a stepping stone for Malaysia to recognize the importance of victims' voice in the process of criminal justice. However, one important issue has to be raised. Restorative justice as a form of conflict resolution,

has been practiced in countries that value assertiveness and explicit expression of opinions; a characteristic of some individualist cultures (Triandis, 1991). Several research on this will be discussed which indicate varied findings.

An early research on conflict resolution was conducted to see if different cultures had different preference for conflict resolution (Leung, 1987). Leung presented a conflict scene to a group of Chinese and American respondents and asked them if they preferred the method of resolution to be "bargaining," "mediation," "inquisitorial adjudication," or "adversary adjudication". The Chinese respondents showed a high preference on mediation and bargaining, while the American respondents preferred the conflict to be settled adjudicatorily.

In response to Leung's research, Gire (1997) conducted a research to see if there was any difference in the preference of conflict resolution methods between Nigerian and Canadian respondents who are of collectivist and individualist culture respectively. The researcher presented a conflict scene and asked the respondents to choose a preferred resolution method between "threats," "acceptance of the situation," "negotiation," "mediation," and "arbitration". The conflicts were either between individuals or between groups. Nigerian respondents indicated that they preferred threats for interpersonal conflicts rather than for the intergroup ones, while Canadian respondents preferred willingness to accept the conflict in interpersonal over intergroup conflicts. However, in

the case of preference for arbitration, Nigerian respondents preferred the method to be applied on conflicts between groups rather than between individuals, while the Canadian counterparts did not differ in their answer. While Leung (1987) found a support for collectivist-individualist cultural influence per se, Gire has found that the pattern is inconclusive.

This led to the discussion of a more specific classification of types of cultures which are broken down to horizontal and vertical type of collectivism and individualism. In relation to this, Aizawa and Whatley (2006) hypothesized that there was a difference in shyness degree between cultures, and their level of collectivism and individualism, in relation to the horizontal and vertical types. Respondents from Japan, Chile, and the United States were involved to test this hypothesis. The respondents were given two sets of scales, being shyness scales and individualism-collectivism scales. While Japanese and Chileans were generally collectivist cultures, Japanese people were found to report a lesser level of horizontal, and vertical collectivism and horizontal individualism. It was also found that despite the cultural difference, Japanese respondents were the shyest among the three groups of participants, with their American counterparts being the least shy. This finding showed that being a collectivist group of people (as shown by the Japanese and Chilean respondents in this research) might be an indication of the people's level of shyness.

The members of collectivistic cultures believe that a society or group is the basic unit of survival (Triandis, Brislin, &Hui, 1988; Hui&Villareal, 1989). They believe in living in societies; protecting and being loyal to their society (Hofstede, 1991). These promote maintaining harmony and concern about others. Malaysia, according to Hofstede (n.d.), is a collectivist country. Therefore, Malaysians are more characterized in ways that are difficult for them to voice their opinions or feelings as it might not be healthy for the relationship with their groups. Consequently, most of the people will more likely hold their opinions back. It may also be attributed to the influence of religion as each religion is concerned with the values of its adherence, especially in sensitive matters that could lead to clashes.

Thus, Malaysians become more confined, especially in cases where expressiveness is concerned. According to Triandis (1991), people in collectivist cultures spend much of their time building relationships because the members of the groups they belong to matter to them. They believe in life long relationships (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). As a result, they are concerned more about others' needs, views, and goals rather thanexpressing their own opinion. They are afraid to voice out their feelings because they do not want to be excluded from the society.

Therefore, it is expected that Malaysians in this paper will exhibit behaviors that

are consistent to the characteristics of people in collectivist culture, such as depending on groups and seeking for group harmony. If Malaysian people are similar in terms of their level of shyness with that of other people of the same type of culture (Aizawa & Whatley, 2006), then this characteristic can have huge impacts on the practice of restorative justice in this country. Restorative justice requires the participants to be expressive and participative in the sessions. Thus, one would ask, "Will Malaysians be able to be as assertive as people in the individualist countries?

Furthermore there are various aspects of restorative justice programs that are relevant to the culture and shyness of the victims (O'Brien, Buttcane, & Seward, 2008). Although the author did not mention the applicability of these components in terms of the issue of culture and shyness of the victims, the implication is overwhelmingly alerting. Alongside with the need to involvethe community, the process is expected to involve issues like 1) encounter, 2) amends, 3) reintegration, and 4) inclusion. The emotions involved in the encounter should help the process of the program, rather than impede it. Therefore, a victim's willingness and confidence level should be something that the program handler should be aware of beforehand. Other than that, an issue that the program handler needs to understand is how the victim sees the offender: Is he someone who lacks integration, or someone who needs help? In a restorative justice program, all parties are expected to participate and do their share of roles in the process, including

the victim, the offender and the community. Communication (or another important component, the dialogue) is the key to a successful implementation of restorative justice program.

PURPOSE AND OBJECTIVES

This paper seeks to understand and investigate Malaysians' level of shyness and collectivism-individualism, and their general perception of restorative justice and its possible implementation in this country. It is hypothesized that shyness level and collectivist culture of Malaysia will positively correlate with the perception of Malaysians on the implementation of restorative justice. Perception of the practice of restorative justice will be analyzed from the respondents' opinion of certain procedures of restorative justice programs.

The importance of this research includes providing conceptual support for the restorative justice practice to be implemented in this country. Although the effectiveness of this practice has been supported in literature, we still need to be cautious of blind implementation which could lead to complications. This research aims to examine whether certain aspects of restorative justice programs can be adjusted to fit the culture of a collectivist country like Malaysia. Thus, the objectives of this paper are to,

1. Examine the levels of shyness and collectivism-individualism, the general perception of a sample of Malaysians on restoratice justice and if they think that it will be a good practice in this country

2. Explore if Malaysians will prefer restorative justice as a way of dealingwith crimes and offenders in this country, and

3. Provide the basis of further research if any amendments of restorative justice programs need to be made in order to be applicable to the people in this country.

METHODOLOGY

Sample

This research targeted Malaysians in general, and any Malaysian is a potential respondent. However, the researchers specified that the respondents should at least be ofthe age of 18 to qualify as a respondent. In total, 85 respondents who consisted of Malaysians ranging from 18 to 62 years old successfully completed the questionnaires. The researchers employed convenience sampling method; where Malaysians in various places (e.g. café, restaurant, hospital, university classrooms, etc.) were approached and asked if they were willing to participate. The consent form was

given before survey and they were free to refuse the survey if they decided so.The demographic data of the sample was as shown in Table 1.

Materials and Measurements

The research employed survey as the design, where only basic stationery and a tape recorder was utilized in the session. However, there were four measurements used for the purpose of measuring the variables which included,

1. Shyness scale was adapted from Cheek and Buss (1981). This scale has been reported to have an internal consistency of .82 (Aizawa & Whatley, 2006).

2. The individualism-collectivism scale was adapted from Singelis, Triandis, Bhawuk, and Gelfand (1995). In the original research, the questions consist of four main divisions namely horizontal collectivism, horizontal individualism, vertical collectivism, and vertical individualism. The internal consistency of each division was .74, .67, .68, and .74 respectively (Aizawa & Whatley, 2006).

3. A questionnaire on the preference of conflict resolution method was employed from Gire (1997). The questionnaire featured a story of two neighbors having a conflict about their lawn. The respondents would be presented with five possible kinds of conflict resolution methods: Threat, negotiation, acceptance, mediation, and authority.

TABLE 1
Demographic characteristics of respondents

Demographic characteristic	n
Gender	male = 32
	female = 52
	missing = 1
Race	Malay = 64
	Chinese = 11
	Indians = 8
	Others = 1
	missing = 1

4. A set of questions pertaining to the respondents' perception on the applicability of restoratice justice practice in this country was developed by the researchers themselves.

The questions were built upon the basis of the three previous concepts, namely collectivism-individualism, shyness, and conflict resolution method. These concepts were made into similar questions, in addition to a crime situation presented. Only some items were adapted and some were changed significantly. Four most common offences (as stated in Umbreit, Coates, & Roberts, 2000) were used, which are vandalism, assault, theft, and burglary. Table 2 shows some of the items developed for the perception scale while Table 3 shows the result of Pearson correlation analysis between Shyness Scale, Collectivism/Individualism Scale, and their respective adaptations in the perception scale.

The questions asked the respondents the various aspects of restorative justice programs – especially victim-offender mediation – in relation to the components from O'Brien, Buttcane, and Seward's account (2008). These various aspects include the involvement of community and others in the decision making process within the criminal justice system, the victims' willingness and confidence issues in actively participating, the preferred method of mediation in resolving conflict, and if Malaysians prefer to act alone in making a decision.

Five questions were made for each of the three components – namely individualism/collectivism, shyness, and conflict resolution method preference – with a total of 15 questions. The points assigned were the same as the rest of the questionnaires to avoid confusion, with 1 representing "mostly disagree," 2 for "disagree," 3 for "neutral," 4 for "agree," ans 5 for "mostly agree." Therefore, the highest score a respondent could yield for a certain component would be 25 points, and the lowest would be 5 points. The higher the score, the higher the respondent possessed the measured characteristic.

Before the administration of the sets of questionnaires, the participants were first asked to provide their consent in participating in this research. After obtaining their informed consent, in order to ensure that the participants answer the questions correctly, the researchers handed out the first three questionnaires, which were the collectivism-individualism scale, the shyness scale, and the preference of the conflict resolution method. Next, the researchers described and explained what restorative justice was. The description was offered in Malay or English language as follows:

> *"Restorative Justice is a practice of criminal justice system where the crime victims are given a chance to participate in the justice process. The victims of crime will be given an opportunity to talk about it and express their feelings or dissatisfactions, and the power to contribute to the decision that can be sanctionedonto the offenders.*

The offenders will be given a chance to apologize and make amends. Usually this practice is done with offenders who committed minor offences such as theft, bullying, and snatching. This second set of questionnaire will evaluate your perception on the practice of Restorative Justice in Malaysia".

After this explanation, the respondents were given an opportunity to voice out any concerns should there be any. Then,

the fourth questionnaire was administered. Once completed, the participants were debriefed with necessary information about the research should there be any.

RESULTS

The scales of shyness and individualism/ collectivism were analyzed using means whereas the conflict resolution survey was analyzed using descriptive frequencies. Meanwhile, the restorative justice applicability perception scale was analyzed item-by-item and also by

TABLE 2
Adapted items in the self-built questionnaires

Scale	Items	Their respective adapted items from perception scale
Individualism item from Collectivism/Individualism Scale	I rather depend on myself than on others	I can decide the fate of the person who does wrong to me without anyone's help
Collectivism item from Collectivism/Individualism Scale	It is important to consult close friends and get their ideas before making a decision	If there's someone who breaks into my house, the community should also participate with me to decide what to do to the person
Shyness Scale	I feel tense when I'm with people I don't know well	I do not feel comfortable if I have to confront the person who steals my money
Conflict resolution survey	Arbitration by authority	The person who damages my valuables should be judged by an authority

TABLE 3
Correlation coefficients for the original questionnaires and the perception scale

Scales	Correlation coefficient	Scales
Shyness scale/shyness items in perception scale	r = .688, n = 83 (missing = 2), p = .001	Shyness scale/shyness items in perception scale
Individualism items/ Individualism items in perception scale	r = .401, n = 84 (missing = 1), p = .001	Individualism items/ Individualism items in perception scale
Collectivism items/collectivism items in perception scale	r = .009, n = 84 (missing = 1), p = .936	Collectivism items/collectivism items in perception scale

descriptive frequencies. The individualism and collectivism were analyzed according to individual basis. Although Triandis (personal communication, November 23, 2010) insisted that the scale should yield a mean of score that should explain whether a culture is individualistic or collectivistic in nature, this current research is concerned with the assumption that the score belongs to some of the respondents, which could result in the high – or low – score of both individualism and collectivism. Since the ratios between races werealso imbalanced, the analysis was only performed on Malaysians in general and between genders.

Average Scores

Shyness scale

In general, the Malaysian sample yielded a mean of 53.6 scores in the shyness scale. Although not significant, this is higher than the mean of scores from the scale developer's sample, which was 51.8 (Cheek, n.d.). Female respondents appeared to be shyer than male respondents, with means of 55.2 and 50 scores respectively.

Collectivism/Individualism scale

The means of scores for vertical and horizontal individualism and collectivism showed that male respondents scored higher, except for vertical collectivism. Male respondents scored a mean of 23.2, 28.2, and 30.9 on vertical individualism, horizontal individualism, and horizontal individualism respectively, with the female counterparts scoring 21.1, 25.5, and 28.7.

Male respondents only scored slightly lesser than female respondents for vertical collectivism, with a mean of 24.4, while the female respondents had an average of 24.6 for the division.

Conflict resolution method preference

The Malaysian sample showed the highest preference for negotiation as a conflict resolution method, with a mean of 4.3 scores, while the lowest score with a mean of 1.8 for the use of threat. For other methods, which are acceptance, mediation, and the use of authority, the sample scored a mean of 2.1, 3.6, and 3.5 respectively. It is interesting to note that male and female respondents scored similarly for threat (1.8), negotiation (4.35 and 4.36), and acceptance (2.1). Male respondents preferred mediation (3.78) and the use of authority (3.78) more than their female counterparts (3.67 and 3.48 respectively).

Perception of Restorative Justice Programs Implementation

For the perception scale, each component is analyzed separately. Generally, the Malaysian sample yielded a mean of 12.2 scores for possible shyness in the practice. The means for collectivism and individualism in the perception scale were considerably low, with a score mean of 5.98 and 8.8 respectively. For the conflict resolution method component, the item is analyzed separately. Acceptance was preferred the least (2.8) and threat slightly higher (2.4), and the use of authority was preferred the most (3.7). There were

preferences for negotiation (3.5) and mediation (3.2).

On the comparison between genders, male respondents appeared to be more individualistic (10.0) than their female counterparts (8.2). On the other hand, female respondents scored higher in collectivism (a mean of 6.1) than their male counterparts (a mean of 5.9). Female respondents appeared to be shyer with a mean of 12.6 and male respondents scored a mean of 11.5. On the conflict resolution method, male respondents preferred the use of authority, acceptance, and the use of threat (3.8, 2.0, and 2.8 respectively) than female respondents (3.6, 1.9, and 2.3). On the other hands, female respondents preferred to use negotiation (3.63) and mediation (3.4) than their male counterparts (3.46 and 3.0).

Some of the correlational analyses that show the relationships between some of the measures are worth mentioning. The correlational coefficients can be seen in Table 4. From this Table, we can see that each of the components in the perception scale is significantly related to their respective original scales, except for the collectivism and negotiation component in the perception scale. Each of the items in the conflict resolution method is also significantly related to their corresponding items in the perception scale, except for negotiation.

Component-by-component analysis

For the perception scale, each component was analyzed individually since they represent various issue that can occur in a restorative justice program as shown in Table 5. For items on shyness component (item 1, 4, 7, 10, and 12), it was found that the respondents feel bold (42.4%) and less shy (67.1%) if meeting with the offender face-to-face. They are also less nervous (42.4%) and 49.4% agreed that they feel confident meeting the offender. However, there are mixed responses when it comes to feeling comfortable, with 29.4% disagreed and 31.8% agreed that they would feel comfortable meeting.

All in all, 54.1% agreed that community should be involved in decision making process involving criminal justice system, and a considerable cluster of the respondents showed that they would not let race be an influencing factor (28.2%). On the component of individualism, although 31.8% agreed that they would feel annoyed if others try to get involved in deciding what to do to the offender, but they agreed that they could not decide without anyone's help (29.4%) and that they disagree that they do not need others' opinions (42.4%).

For the component of conflict resolution method, the use of authority was rated as the most preferred method when it comes to dealing with a crime (mean of 3.7). Acceptance was deemed as the least preferred method (mean of 2.0), followed by the use of threat (mean of 2.4). Additionally, negotiation and mediation were also reported as preference (with a mean of 3.5 and 3.2 respectively).

TABLE 4
Correlation coefficients between the original scales and the components in the perception scale

Scale/Item	Shyness component	Individualism component	Collectivism component	Threat item	Negotiation item	Acceptance item	Mediation item	Authority item
Shyness scale	R=0.688, p<.001							
Individualism		R=0.401, p<.001						
Collectivism			R=0.009, p>.936					
Threat				R=0.313, p<.004				
Negotiation					r=0.041, p>.406			
Acceptance						r=0.373, p<.001		
Mediation							r=0.327, p<.042	
The use of authority								r=0.231, p<0.33

TABLE 5
Scores obtained by the respondents in the perception scale

No.	Item	1 = Strongly disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly agree
1	I feel shy to see face-to-face with the person who wrongs me	**27.1**	**40.0**	17.6	12.9	2.4
2	I believe if we talk to the person who wrongs us face-to-face, we can achieve a peaceful agreement.	2.4	10.6	**24.7**	**50.6**	11.8
3	If there's someone who breaks into my house, the community should also participate with me to decide what to do to the person.	5.9	7.1	**18.8**	**54.1**	14.1
4	I feel bold when it comes to confronting the person who bullies me.	0.0	17.6	**21.2**	**42.4**	18.8
5	If there's a person who steals my vehicle, there should be a third-party to decide what the best action between me and the person is.	9.4	**18.8**	15.3	**47.1**	9.4
6	If the person who does wrong to me is the same race as me, I can be quick to forgive him.	18.8	**28.2**	**29.4**	17.6	5.9
7	I do not feel comfortable if I have to confront the person who steals my money.	18.8	**29.4**	15.3	**31.8**	4.7
8	The person who damages my valuables should be judged by an authority.	2.4	10.6	**20.0**	**47.1**	**20.0**
9	I feel annoyed if others get involved in my way deciding the fate of the person who wrongs me.	3.5	28.2	**29.4**	**31.8**	7.1
10	I feel nervous when I have to face with the person who bullies me.	17.6	**42.4**	**22.4**	17.6	0.0
11	I should just accept it if someone steals my things.	**36.5**	**37.6**	17.6	3.5	4.7
12	I am confident to confront the person who breaks into my house.	3.5	12.9	**17.6**	**49.4**	16.5
13	I feel that threat is the best way to deal with the person who tries to inflict injury on me.	17.6	**37.6**	**25.9**	16.5	2.4
14	I can decide the fate of the person who does wrong to me without anyone's help.	7.1	**29.4**	**27.1**	23.5	12.9
15	I don't need others' opinions to decide what should happen to the person who wrongs me.	8.2	**42.4**	**24.7**	17.6	7.1

DISCUSSION AND IMPLICATIONS OF THE STUDY

The findings indicate the exploration of Malaysians' perception on the various aspects of the implementation of restorative justice programs in this country. On the overall, the sample shows that they can individually be collectivistic and individualistic perceptions. Although it has been stated in the literature that Malaysia consists of collectivistic cultures, (and it has been shown so in the results), they can also be individualistic in nature, depending on the context where it requires them to be so (Triandis, personal communication, November 23, 2010). According to the findings, in a context where they have to make a decision in regards to a criminal situation (e.g. whether or not to report, whether or not to tell the family), the Malaysian sample shows that they are collectivistic. They need to seek other people's opinions, and they need to ask their significant others, such as their family or friends, when making a decision. Since restorative justice programs have a strong element of the community, this characteristic of collectivism can be a helpful aspect in the implementation.

However, it is interesting to note that although Malaysians appeared to be collectivistic, the results for collectivism in the perception scale were mixed. They tended to be more collectivistic when the question item asked "if they needed an opinion" (item 15), but they appeared to be more individualistic in item 9, when they were asked if they would "be annoyed" if others get in their way of making decision. This might account to different definition of "collectivism" in Triandis' scale and the one that was implied in the perception scale. Collectivism as purported in the literature is a characteristic of a culture whose members value the relationships with the community and the influence the community has in their life. However, in face value, "to get in their way of decision making" might not be inclusive with the definition offered by the literature (e.g. Triandis 1991). In face value, the item suggested that while members of collectivistic culture value the opinions of other members, but the fact that victimization is a very personal experience, to be stripped off of their decision making ability might challenge their personal individualism.

It is similar with the negotiation item in the original scale that does not really correlate with then negotiation component in the perception scale. This might show us that the setting of the original scale is different than the setting intended in the perception scale. The original scale deals with two neighbors who are in conflict, while the perception scale asks the respondents if they would negotiate if they are victimized. Although the average scores and the sum of score do not really tell this, Looking at the response individually can give us a perspective. For example, two respondents gave a "5" for negotiation in the original scale, but "1" for negotiation in the perception scale, and three respondents who gave a "5" negotiation in the original scale, but "2" for negotiation in the perception scale.

The purpose of comparing the average scores between male and female respondents was conducted because it can give us additional perspective of Malaysian population in terms of their collectivism-individualism, shyness, and preference of conflict resolution methods. Different genders are known to have their own psychological ways of dealing with the events around their life – and this includes victimization. The findings that show male respondents to be more individualistic and female respondents were more collectivistic give insight about their openness towards other's involvement in their decision making. Female respondents' higher average score of shyness is an early indication of what to do and not to do should restorative justice be really implemented in this country. However, this paper only provides the basic picture and it is suggested that in future studies, higher cohort of sample can be obtained to give more accurate description of collectivism-individualism and shyness between genders.

However, since restorative justice programs rely very scarcely on the involvement of the local authority, education is important to inform on the processes and structures of the programs. This is because the findings show that they still have a strong dependence on the authority when/if they are victimized and that there are no agencies or institutions that specialize in and are concerned about the victims' welfare where they can go to (Aziz, 2010). The victims in the current system are very passive, and very few decisions actually involve their participation. Fortunately, since one of the programs of restorative justice involves mediation (i.e. Victim-Offender Mediation), the sample shows that they also prefer mediation and negotiation as a way to resolve a conflict. By highlighting the benefits of mediation in the program as an educational effort, Malaysians can understand on how this program can satisfy the victims through their participation; and help the offender lessens the likelihood that he or she repeats the offence.

On the issue of shyness, generally Malaysian respondents, although not statistically significant, scored a higher mean of shyness than the original sample in the research of the scale developer. Female respondents showed even a higher mean. This might affect how restorative justice, which will need more of their participation, is implemented in the country. A future research can be conducted to further identify the level of shyness Malaysians would have when it comes to standing up for their right and how some adjustments to the programs can be done so Malaysians can fully benefit from it.

Another issue worth mentioning in the aspect of shyness is although the respondents were generally shyer than their western counterpart, they seemed to have a different shyness-related personality in the perception scale. People in collectivistic culture tend to be concerned about the feelings of the members of their same group, but in criminal cases, there may be another explanation; one that is particularly related to the concept of ingroups and

outgroups (Tajfel, 1974). In criminal cases, the offenders are considered as the victims' outgroup, which explains their attitudes and behaviors toward the former. There are various stakes involved when a crime is committed, and the shyness of the victims as individuals in general might be outranked by the victims' feeling about the need to restitute the society's norms, and also uphold justice for themselves. By restituting the norms, the discussion of conflict resolution method comes to place.

Many victims choose to involve the authority, but it is undeniable that it is possible for them to channel their feeling about what is right by meeting the offender and having a dialogue. And this can be achieved only if there is proper education that addresses the possibilities and benefits of restorative justice programs in this country. An agency that handles victims' welfare needs to be established in order to be the platform for restorative justice programs to exist. This might take a while, but the first steps need to be taken. The Government of Malaysia needs to realize the potentials that these programs have on the advancement of the criminal justice system in the nation.

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SOCIAL SCIENCES & HUMANITIES

Language and Identity: The Impact of a Multilingual Environment on the Personal Identity among German Mother Tongue Speakers Living in Malaysia

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ABSTRACT

Through 18 interviews with German mother tongue speakers living in Malaysia, we investigate the impact of a foreign language on the individual's identity. In this context, the study relies on the Social Identity Theory and Social Categorization Theory which focus on identity. We suggest that the use of a foreign language serves as a substitute for the mother tongue in the construal of identity only to a certain extent. This phenomenon becomes most apparent in situations where the competency of the language is crucial for the respondent involved in communication. Depending on the importance of the situation the respondents experience a different level of achievement/failure in expressing their identity. At the same time, the respondents evaluate identity of their communication partner by rating their language skills. Our findings further indicate that language makes a linkage between personal and social identities which is reflected in the feelings and behaviour of respondents in situations, when they cannot understand the language others use around them. Additionally the individual's identity perception does not seem to be influenced by the length of stay in Malaysia, nor by a long/short term relationship with a non-German speaking partner. The mother tongue however becomes replaceable, provided the respondent gained the knowledge in a certain area in a foreign language. In this case, the individual will have difficulty to communicate about that particular area in his mother tongue except with practice.

Keywords: Identity, foreign language, German native speakers, language and identity, multilingualism

INTRODUCTION

Edwards (2009, p.20) states that "since language is central to the human condition, and since many have argued that it is the

most salient distinguishing characteristic of our species, it seems likely that any study of identity must surely include some consideration on its use". We share Edwards's opinion and explore the individual's identity perception in terms of language within the scope of a multilingual environment which mirrors other studies (Pavlenko & Blackledge, 2004; Anchimbe, 2007). However, this study is investigated from the perspective of a Malaysian context and that from the German mother tongue speakers living in this country. The objective of our investigation was to find out, how the use of a foreign language affects the individual's personal identity in a multilingual environment. We were further interested to learn if our respondents perceived a foreign language as an equal substitute for their mother tongue, in relation to their personal identity and feelings about their identity in case they do not speak a language where their conversation partners communicate in. We hypothesized that the level of proficiency in the target foreign language plays a significant role in the construal of the individual's identity and thus influences the individual's perception of the importance of his mother tongue. We further hypothesized that the longer period of time the individual spends in a multilingual environment, the less importance will he put on his mother tongue.

To analyze this matter, we outlined our interview questions based on previous studies conducted on language and identity based on the Social Identity Theory (SIT) and the Social Categorization Theory (SCT).

We also used the Twenty Statement Test (TST) developed by Kuhn and McPartland (1954) to expand the angle of evaluation in our study. The SIT and SCT were derived from studies by Henri Tajfel, John C. Turner and others. Both theories have a long term tradition in the social psychology (see Brown 2000, p.746) and deal with the identity through group memberships. They argue that individual perceives oneself and others through categories. Categories, according to Tajfel and Turner relate to the "psychological representations in the mind; where there is presence of cognitive structures which people use to *define themselves* and to change their behavior" (Turner, 1982, p.21; Turner & Reynolds, 2003, p.137). Individuals thus categorize others and themselves, i. e. self-categorize, into various sociological groups either/or cognitively and/or evaluative and/or emotionally. The range of one to three of these factors also builds the main components of social identity as defined by Tajfel (1974, p.69, 1978b, p.63). In the said study by Tajfel, he developed a definition which we also follow. For the purpose of our current paper: "social identity will be understood as that *part* of an individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, 1978b, p.63). The self-concept, as defined by Turner, is in simplified words a cognitive system that allows individuals to perceive themselves as coherent entities over time (Turner, 1982, pp.18-19). Turner himself build the

SCT based on the principals of the SIT and targeted his research on explanations of how a sociological group becomes a psychological group (Turner & Reynolds, 2003, p.137). The TST from Kuhn and McPartland (Turner & Reynolds, 2003) addresses the identity through the question 'Who am I?' that respondents usually have to answer with twenty different statements (comp. e. g. Dana, 2005, p.109; Carpenter & Meade-Pruitt, 2008). The TST provides to some extent an access to the way an individual self-categorizes himself into different sociological and psychological groups for which we perceive it to be a valuable complement of our analysis and that is why we included it into our study.

Personal identity will be for the purpose of this paper understood as the individual's perception of himself as an individual person and as a member of diverse groups that are meaningful to him. The expression 'self' refers in our text to an individual person and the expression 'other(s)' refers to other individuals.

In the following sections, we will first illuminate the language situation in Malaysia and address the factors that led to a multilingualism of this country. In the next section, we will discuss the views and theories of researchers with regard to language and identity and we will also outline the theories concerning identity that we build our investigation upon. Subsequently, the results of our research will be presented and summarized in a separate section.

LANGUAGE SITUATION IN MALAYSIA

Malaysia embraces a number of variations of the local official language *Bahasa Melayu* (for the term 'language variation' cf. Ammon, 1995, 1997). In addition, other languages were introduced during the colonization of the country. In 1957, when Malaysia gained its independence, people of Chinese and Indian origin had formed already a significant part of the Malaysian population. The presence of Chinese, Indian and other foreign inhabitants in Malaysia started according to Omar (2007) in the 14th century and then increased especially at the end of 19th century. Many Indians were brought to Malaysia by the British to fill job vacancies, Chinese chose this country for entrepreneurial purposes. This is why Malaysian policy distinguishes between people who are said to be the original population of the geographical area of Malaysia and between those who originate from other states. The indigenous population, also called *Bumiputera* (i.e. the sons and daughters of the soil) is further differentiated into Malays and *Other Bumiputera*. The former group comprises people who are Muslims, lead a Malay way of life and speak the Malay language. *Other Bumiputera* refer to aborigine ethnic groups who are not Muslims, but are "closely related to the Malays in terms of language and primordial culture" (Omar, 2007, p.337). At the present time, Malays and the *Other Bumiputera* groups represent 60,6%, Chinese 22,8% and Indians 6,8% of the Malaysian population (Population census, 2011). The *Other*

Bumiputera nevertheless embrace more than fifty different indigenous ethno-linguistic groups, including the descendants of Portuguese and Thais, who came into this country in the early 16th century (Population census, 2011). Malaysian Chinese as well as Indian citizens likewise do not fall into homogenous ethno-linguistic groups, but have many different ones in accordance to their background. Hence there are Malaysian Chinese communicating among each other in Hokkien, Cantonese, Khek, Hakka, Teochew, Hokchiu, Hainanese, Kwongsai or Mandarin. Malaysian Indian citizens are usually proficient in Tamil, yet the use of other Indian languages is also common (comp. also Omar, 1982, p.52, 2007, p.346).

There are several reasons for the Chinese and Indian Malaysians to preserve the languages of their ancestors. One reason is the relatively separate lifestyle they led up to the 1960's. Indians usually worked on rubber plantations or the railways and thus lived in areas that were near to their work. Schools as well as other facilities were established and financed by the government in those areas for them. The language chosen as the medium of instruction in the schools was Tamil. *Bumiputeras* usually lived in rural areas in *kampungs* (villages) and made their living through agricultural work or fishing. The language of communication was a local variation and literacy was first established in Arabic with instruction in Islam in the houses of chieftains, in mosques and privately founded village religious schools (Omar, 2007). The Chinese mainly settled down in tin mining or urban areas.

They set up their own businesses and also their own schools that followed the Chinese education system. Thus the language of instruction in Chinese schools was Mandarin. Later on primary and secondary government schools were established by the British and replaced the indigenous education system. The instruction in these schools was in English and they were however parallel institutions to the Indian and Chinese schools. These English medium schools were not financially accessible to everyone, hence only people with a strong financial background could afford going to these English medium schools (Omar, 2007; David & Govindasamy, 2006).

Naturally there were some sectors of neighbourhoods that embraced various ethnicities. Yet the majority lived within their own ethnic group and thus had no reason to interact with their ethnic outgroups (comp. Zaman, 2008, p.234; Omar, 2007). The first foundation that allowed ethnic mingling via education was through the establishment of a tertiary institution named 'The King Edward VII Medical School' in 1905. After the Second World War this college was merged with the Raffles College, Singapore in 1928. Together, they formed a university called University of Malaya (Moris, 2007, p.7 & 14). In 1959, the university was developed in Kuala Lumpur as well as in Singapore. Considerable expansion took place in a short time and by 1962 the university became an autonomous national university in Kuala Lumpur. Its campus in Singapore was subsequently renamed into University of Singapore after

Singapore became an independent state in 1965 (Moris, 2007, p.16, see also Universiti Malaya Calender 1970-71, pp.5-7). Even though it was open to all, only families of higher status could consider this institution as the right choice for their children. In view of its expenses and location, the majority or 85% of the students were Chinese (Omar, 2007, p.343).

At the present time (the ethnic and along with it the language interaction) still depend to a large extent on the education system (David & Govindasamy, 2006; David, 2004; Kim, 2008, pp.56-57; Syed Husin Ali, 2008, p.92). The primary and secondary education takes place in the national and vernacular schools which distinguishes them in the language of instruction and in the ethnic population of their pupils. Thus, the medium of instruction is Malay, English, Mandarin, Tamil or a combination of them. The pupils' ethnicity reflects the main language of instruction. Among the other factors contributing to the state of the language use in Malaysia is the degree of ethnic diversity in the place of the individual's residence and the cultural heritage of the ethnic groups. An attempt to bridge the gaps among the various Malaysian groups is the establishment of the 'vision schools'. These schools, usually a pair consisting of a government and a vernacular one, share some of their facilities such as playgrounds or canteens. Currently there are five schools of this type in the country. Apart from that, a new program was introduced in Malaysia to create opportunities for youth to interact with their peers of other ethnic groups over

a period of three months. This program is called 'national service'.

Notwithstanding the efforts mentioned above, multiethnicity and multilingualism continue to grow in Malaysia. David and Govindasamy (2006, p.56) state that there were "at least a hundred languages" in use at the time of writing. One factor in this diversity may be that professionals and companies from all around the world contribute to Malaysia's development, through their expertise or their own investments. Immigration of laborers and domestic workers in search of job opportunities - mainly from Asian countries, and especially Indonesia, the Philippines and Bangladesh - may be another factor. Moreover, being depicted as an opportune educational hub, Malaysia saw an increase in the influx of foreign students from African and Middle East countries, who flock to Malaysian universities.

Malaysia could thus appear to be a modern Babylon. However, the country certainly does not suffer lack of communication among its people. A common language has in fact been one of the main concerns of the government since independence. The discussion about the Malaysian national language started in 1948, at the time of the formation of the Federation of Malaysia (Omar, 2007). Malays suggested the Malay language, but the rest of the population did not agree. Non-Malays were slightly dominant in number then (David & Govindasamy, 2006, p.56) and suggested to have either two languages, Malay and English or four national languages by adding

Mandarin and Tamil as well. Finally it was decided to recognize Malay and English as national languages for a period of 10 years. After that a 'language nation' was supposed to arise (cf. Ammon, 1995, pp.18-34 for the term 'language nation') and according to Omar (1998, p.202) eventually it did indeed succeed: "For the last three and a half decades, the Malay language has faced the challenge of building itself to give an identity to the people who use it as a vehicle of communication within its national boundary. It has achieved its goal in this aspect. Malaysians have an identity in having a national language that is native to the soil". Although English stopped being an official language of the country in 1967 in Peninsular Malaysia and in 1985 in Sabah and Sarawak, it still remained in use within the court rooms, because of the fact that many Malaysian lawyers had pursued their studies in England. Similarly on many occasions communication among Chinese and Indian citizens were and still are held in their respective languages, whereas functions with multiethnic participants often involve English along with other local languages.

LANGUAGE AND IDENTITY

Le Page and Tabouret-Keller (1985) explain linguistic acts as acts of identity. They say that the prior function of words is to first of all express the identity of oneself and others and not to name 'things'. Le Page and Tabouret-Keller believe that each individual knows the linguistic patterns of his ingroup and thus is able to develop for himself certain patterns of linguistic behaviour. S/he will then modify his linguistic behaviour into 'focussed' and 'non-focussed' language acts according to his intention to identify himself with a certain group or to distinguish himself from others. There are however, four main criteria that need to be fulfilled in terms to use the 'focussed' linguistic systems. Firstly, the individual has to be able to identify groups. Secondly, s/he has to have access to the groups and to be able to analyse the behaviour of these groups. Thirdly, the individual has to be motivated to join these groups and finally s/he has to be able to modify his/her behaviour. The motivation seems to be according to Le Page and Tabouret-Keller the most important criteria. The motivation to learn a certain language for instance can lead to neglecting of or even to an aversion towards the mother tongue. Language is in their opinion not the only factor that defines identity, but it serves as a tool to decode and to express identities.

We can find a similar point of view on language in the work of Giles and his 'Accommodation Theory' (comp. also Coupland, 2007, p.109; Tabouret-Keller, 1998, pp.322-333). Giles Theory is based on the work of social psychologists related to similarity attraction. This theory says that individuals are evaluated by others better, when they manage to reduce dissimilarity between each other (Giles & Powesland, 1975, p.157). In addition to this theory, Giles assumes that individuals will reduce linguistic dissimilarities between themselves and the individual/group by whom they wish to be judged positively.

Giles calls this kind of linguistic behaviour, which includes also non-verbal features such as smile, eye contact etc., convergence. The opposite of this linguistic behaviour Giles calls 'divergence' (Giles, Bourhis & Taylor, 1977, p.322; Giles, 1978, p.384). According to the Accommodation Theory, individuals always adjust their speech acts depending on the fact if they wish to identify themselves with others. This theory has been studied by many researchers and throughout the years became an "integrated, interdisciplinary statement of relational processes in communicative interaction" (Giles,Coupland & Coupland, 1991, p.2). Convergence and divergence can further emerge in different grades and combinations. It means that the speaker can adjust his linguistic behaviour completely or just partially to the style of his communication partner. It is also possible that within a conversation one of the partners might apply convergence, whereas the other divergence.

In his later work Tabouret-Keller (1998, p.317) states that language does not just help to express or decode identity, but it also combines personal[1] and social identities: "Language features are the link which binds individual and social identities together. Language offers both the means of creating this link and that of expressing it." He sees the foundation of this phenomenon on the one hand in the conscious or unconscious adoption of a feature or a set of features of behaviour of another individual. On the other hand this relationship is supported according to him by the institutionalisation

[1]Tabouret-Keller uses the term 'individual identity'.

and legalisation of a language. Once a language is given a legitimacy linked to power over a territory for instance or over key institutions in a country, it can be materialised and totemised. Materialisation, or 'reification' as Tabouret-Keller puts it, is usually related to the use of the particular language in written texts, in dictionaries, in the courts etc. 'Totemization' is related to the social features of the language, especially its representation of a certain social group.

Riley (2008) argues that language and social identity are connected in at least three ways. The connection to language is in his opinion first of all to be seen in the fact that the social identity is coded in language. Secondly, the social identity influences the vocabulary and the speech style of the individuals, and thirdly it allows multilingual individuals to express their membership in diverse social groups. Based on Riley's examples, individuals apply their repertoires consciously according to the given situation. To him language is actually the basis of the individuals' identity: "identity is made of knowledge and language is both what we know and how we know it" (Riley, 2008, p.91).

Also the contributors in Pavlenko and Blackledge (2004, p.19) understand identity to be interlinked with language, since they explain it as 'social, discursive, and narrative options offered by a particular society in a specific time and place'. Individuals as well as groups use these options in their social life to name themselves, to characterize themselves or to win their social privileges. They further state, that identity choices

are however not possible in all situations. They further argue that individuals cannot express their identities to their liking once certain common identity interpretations exist that are supported by a higher power. These kinds of identities should be then understood as conditioned ones through socio-political and economic circumstances for instance. Identities should be therefore investigated rather in situations where the individuals experience concurrence or a certain crisis in their life, because their identities become most apparent at that point of time. Language and identity shape each other, since language provides certain linguistic tools that construct and negotiate identities and identity ideologies steer the linguistic tools, which individuals use to express their identities as well as to reckon identities of others.

The way Edwards (2009) describes the ties between language and identity can be in our opinion understood as direct and indirect. The direct relation is in the use of language by individuals. They adjust their speech style according to their gender and to the given situation to represent their identities. Thus certain linguistic features will become apparent only in the communication with members of distinct groups. Edwards points also out that language carries identity features when it comes to names of individuals as well as of groups (Edwards, 2009, pp.34-39). Names are of a great importance especially if they are supposed to highlight a certain feature of its carrier or if they are linked with religious or protective meanings for

instance[2]. Groups also choose and get[3] names in order to achieve to some extent an expression of their identity. The indirect linkage between language and identity is again seen in the importance of language when it comes to religion or to unconscious perceptions of identity based on language. In the first case one can think of the fact that language was frequently spread together with religion. Nowadays, there are still cases where the holy scripts of some religions are introduced in the original language and cannot be translated into another.

Joseph (2004, p.13) holds like Tabouret-Keller (see above 1998, p.315) the opinion that language and identity are inseparable. He argues that each individual decodes and categorises others also based on their linguistic features (what they say and how they say it, e. g. accents, voices etc.) and at the same time ascribes them certain identity features (Joseph, 2004, pp.2-3; see also Spolsky, 1999, p.181). This applies not just to individuals one meets in person, but also to people one speaks on the phone with, hears on radio or sees on the television etc. Joseph suggests that in order to investigate somebody's identity the individual himself must become a part of the interpretation instead of just being a subject of observation:

[2] e.g. the female Slavic name 'Miroslava' carries the meaning of 'the one, who celebrates peace' or the male name 'Daniel' originates in the Hebrew culture and means 'God is my judge' (examples added by the authors of this paper).

[3] For instance while "the Welsh call themselves *Cymry* (meaning something like 'fellow countrymen'), the English name for them derives from the Anglo-Saxon *w(e)alh*, via the Germanic *Wälsche* ('stranger', 'foreigner', or even 'barbarian')" (Edwards, 2009, p.37).

"A full account of linguistic communication would have to start with, not a message, but again the speakers themselves, and their interpretation of each other that determines, interactively, their interpretation of what is said" (Joseph, 2004, p.226). He suggests further that identity should be recognized as another function of language along with representation and communication: "identity is itself at the very heart of what language is about, how it operates, why and how it came into existence and evolved as it did, how it is learned and how it is used, every day, by every user, every time it is used" (Joseph, 2004, p.224).

All of the researchers mentioned above perceive language as a tool to identify others as well as oneself. We also hold the view that language helps individuals to understand and to express their own identity as well as to understand and to describe the identity of others. We further argue that this position is in line with the SIT and SCT. As stated in the introductory part of this paper the perception of identity requires categorization. And we see the connection between the language and categorization in the fact that "when we hear someone speak, we immediately make guesses about gender, educational level, age, profession, and place of origin" Spolsky (1999, p.181). Hence we categorize others and ourselves, i. e. self-categorize, into certain sociological groups. We believe that in certain situations individuals make even more guesses and judgments based on language than as cited earlier. We assume that individuals may additionally distinguish some identity facets of their communication partner in terms of the personality of the communication partner.

From the discussion in the literature review it becomes apparent that Malaysia offers an ideal situation to investigate the links between language and identity. However, the research in Malaysia has focused mainly on matters pertaining to national identity: "Identity at the lower level, for example the community or the group, has not really been given much attention to by researchers. Among the few who have made this topic their area of research interest are Maya Khemlani David (1996) in her research on the Sindhis (a minority group) in Malaysia, and Asmah Haji Omar with her research on a group of bilingual academics" (Asmah Haji Omar, 2003). Apart from these two linguists, the work of Nur Atiqah Tang Abdullah (2001) can be mentioned, who deals with the connection between the identity and citizenship education in Malaysia. Othman Mohamed Aris (1978), who looked at the ethnic identity in a Malay community in Malaysia, similar to Sharin Selva Raj (2005), whereas her investigations were among Malaysian Chinese and Indian respondents. Lyngkaran and Kunaletschumy (2002) researched the Malaysian Indian community, Colin Nicholas (2005) focused his paper on Malaysia's *Orang Asli*, i. e. the aboriginal population and John R. Clammer (1980) discussed the ambiguity of identity in the *Baba* communities of Malaysia and Singapore. An attentive eye will not miss that even though these studies involve different groups, they still remain in the scope of 'Malaysian identity', since they all

elaborate on Malaysians. We decided on the contrary to explore our research questions among foreigners and chose for this purpose German mother tongue speakers. Our decision was driven by the notion that our subjects will be on the one hand less likely affected by the stereotypes spread among Malaysians towards each other in terms of various group memberships and that the German mother tongue speakers might on the other hand find themselves more often confronted by the language variety used in Malaysia than the locals would.

RESEARCH QUESTION

Language plays a big role in the expression of the individual's identity. It allows him to some extent to comprehend and to describe himself through language. Furthermore the language gives the individual the possibility to compete with identities that would be otherwise ascribed to him by the society. In our view, the language the individual is most fluent in is the language(s) he grew up with, in other words his mother tongue(s). So what happens with the expression of the personal identity if one is not or not always able to use his mother tongue? How does the individual feel in such situations? Is the use of a foreign language an equal substitute for his mother tongue when it comes to his personal identity? And what if his language skills in the target language he ought to use reach less than an intermediate level or if he does not speak nor understand that particular language at all? Will it matter to him not being able to take a part on the conversation and thus being perceived for

instance as a quiet person by the others? Will he feel disadvantaged and experience lack of expression of his personal identity? Yet, what does a person who masters the language to the highest proficiency level experience in the very same situation? What does the very same person feel, when he cannot find the 'proper' word he would have used in his mother tongue? Last but not least, does it come to an identity change, if an individual uses a foreign language as a *lingua franca* for a long period of time?

The main questions we set to investigate in terms of the effects the use of a foreign language has on the individual's personal identity in a multilingual environment are:

1. Do our respondents perceive a foreign language as an equal substitute for their mother tongue, when it comes to their personal identity?

2. How do they feel about their identity in case they don't speak a language their conversation partners communicate in?

3. Does the length of stay in Malaysia affects the respondents' personal identity?

4. How important is the mother tongue vs. foreign language for the respondents in terms of relationships?

PARTICIPANTS

Overall 19 participants took part in our investigation during October and November 2011: 10 females and 9 males. As mentioned above, all respondents were German mother tongue speakers, the majority (17) were of German origin. The length of stay of the

participants in Malaysia varied between few weeks (six weeks the shortest) to 37 years.

METHODOLOGY

The data were collected from 18 interviews with German mother tongue speakers currently living in Malaysia. We decided to exclude the data collected from one male participant, because he chose not to answer most of our questions with an explanation such as "I can't give you the answer now" and hence no valid feedback was obtained. We placed emphasis on the fact that they grew up in Europe and only came to Malaysia as adults. The other important factor to us was their length of stay in Malaysia in order to check, whether it has any influence on their identity perception. We set no other criteria in terms of being able to look for tendencies that could be in the future studies investigated quantitatively. Some of the respondents were known to us, whereas some were added to the project via the snowball sampling method (see e. g. Babbie, 2013, pp.191-192; Babbie, 2011, p.208; Bailey, 1994, p.96). All interviews were conducted in the German language. The respondents were further informed that their answers would remain anonymous.

The interviews were later transcribed and coded so that the data could be entered into the Statistical Package for the Social Sciences (SPSS). The transcriptions helped us to maintain a qualitative insight into the responses, while the coding of the responses into variables helped us to gain a faster and clearer overview over the data. In accordance to the nature of our study we only used the descriptive tools of the SPSS, i. e. frequencies and cross tabulation, for data evaluation. The choice to partially evaluate and to present the data in percentage serves at the same time as a guideline for setting working hypothesis for further research in regard to this topic.

We started the data evaluation with the insertion of data from transcripts into the SPSS. We followed the usual procedure for nominal and ordinal data such as gender, length of stay, country of origin, proficiency and fluency in languages etc. Questions that are related to emotions and behaviour such as 'What do you do and how do you feel in case you are excluded from a conversation because of the language?' were turned into variables the following way: 'bad feeling, can't understand language' - 1=yes, 2=no; 'behaviour, can't understand language' – string (i. e. we typed in the keywords from the statements). Questions related to self-categorization were turned into variables also in a standard way, e. g. 'identification with Malaysians': 1=yes, 2=no, 3=partially both. Based on the SPSS-frequencies we turned back to our transcripts and checked for similarities among 'yes' and 'no' answers etc. After that we distinguished 'factors' and 'categories' among similar statements, to highlight the respective finding (e. g. "strong family orientation" or "subconscious code switching").

INTERVIEW QUESTIONS

We started our interviews with the Twenty Statements Test (TST) from Kuhn and McPartland (1954), which is a frequently

used technique for assessment of an individual's sense of identity (comp. e. g. Dana, 2005, p.109). Our respondents were thus asked to give us 20 different answers to the question 'Who am I?' We used this method to observe whether our respondents would include a mention of their mother tongue.

The second part of the interview consisted from 20 open-ended questions we developed in line with the SIT and SCT. The questions are focused on self-categorization through group memberships and on the use of language and its personal value for the participant. The participants were however given the opportunity to report freely on additional matters that were of importance to them. Our main questions were the following:

1. Do you identify with Malaysians/with your fellow countrymen that live in Malaysia in some way? If yes, in what ways?

2. Do you perceive your identity to be different in comparison to Malaysians/ to your fellow countrymen that live in Malaysia? If yes, in what ways?

3. What languages do you speak and at what level (fluent, good, just few words...)?

4. What languages do you use in Malaysia? When? Which one is your favourite and why?

5. Does it happen that you sometimes think in a foreign language even though you don't necessarily have to? (e. g. You are not engaged in a conversation involving foreign language, nor do you have to deal with correspondence in a foreign language.)

6. What do you do and how do you feel in case you are excluded from a conversation because of the language? (e.g. People at your table communicate in a language in which you are not proficient.)

7. Is it/would it be important for you that your partner and children speak/ understand your mother tongue? Why?

8. Is it/would it be important for you to learn the mother tongue of your partner? Why?

9. With whom do you spend your free time? Does your mother tongue play any role in it?

10. a) Do your good friends tell you that you changed as a person since you live in Malaysia? If yes, in what way?

    b) Do you think you have changed because of living in Malaysia? If yes, in what way?

11. To what extent does your mother tongue and other languages you use play a role in expressing your identity?

12. Do you judge others by their language skills? When? How? (e. g. You receive an e-mail/phone call. You meet a new person at a party…).

RESULTS AND DISCUSSION

The number of answers related to mentioning German as part of the self in the scope of the Twenty Statements Test reached 33%.

28% mentioned connection to the language indirectly by mentioning the use of German in their profession and/or by stating their ethnicity. The rest, i. e. 39%, did not mention the mother tongue at all. It could be argued that the respondents did not see the necessity to stress their mother tongue as part of their identity, since the interview was held in their mother tongue. However, we can report that when the respondents were asked directly about the role of the mother tongue and other languages they speak in expressing their identity (question (11)), 83% of them stated that they perceive it to be important. We will come to this point again and discuss it in more detail.

Our data concerning identity perception based on self-categorization in comparison with Malaysians and fellow countrymen of the respondents show that the time spent in Malaysia by the respondents has no significant influence in this matter. In total, only 39% of the respondents identify in some way with Malaysians, despite the fact that 61% of them live in a relationship with a Malaysian. They identify with Malaysians as follows: in the concept of simplicity of the self, strong family orientation, taking religion as a part of the everyday life and placing less value on materialism and individualism. One of the respondents added:

> '... Apart from that I can identify very well with the 'lepak'-custom. Thus just sit around, eat, drink and talk.'

The statements about dissimilarities in identity perception when compared to Malaysians indicate three main points: time management and efficiency, values (especially in prioritizing form over content) and the concept of hygiene. What follows are extracts taken from the interviews illustrating the above findings. All three participants are married to Malaysians. The first example is from a respondent, who has lived in this country for the past six years:

> 'They have this listlessness, I would love to have it, but I don't have it. ... And they are old fashioned. They love these endlessly long names and titles and hierarchy, all of it is totally foreign to me. And sometimes they would come up with something very funny like – the pregnant ladies are expected to dress less sexy, because it might disturb the students!'

This person spent in Malaysia 27 years:

> 'I always believe to be completely different, completely otherwise. Since I find it to be important to come on time, or at least to let the other know that I'm running late as well as I find it to be important to treat others nicely despite having bad mood myself. ... My friends are actually only Europeans, even though I work with Malaysians I don't like to meet them in my free time. ... And I find it difficult to work with them.'

The third utterance is from a respondent living in Malaysia since 31 years:

'There is no such thing as German perfectionism here. I am still not used to it and I am inwardly much more German in this regard. ... Or ok, I live in a high building and 200 meters from another 30-stock office tower, yet I have to walk to LRT[4] through a pile of dirt. I guess I will never get used to things like that. ... I have the impression that Malaysians don't take their work seriously. At least not as seriously as Germans do. They lack the ambition to improve or show that they are worthy of their position. That is not good on the one hand, because then many things don't work as they should. On the other hand I like that the locals don't put themselves under such a huge self-pressure like the Germans do.'

The comparison with other country members living in Malaysia brought us to the following piece of finding: our respondents strongly differentiate between German mother tongue speakers (GMS) living 'locally' in a financially equal way to that of the Malaysians and those living as expatriates[5]. The frequency of identification regarding this point equaled the non-

[4] LRT (Light Rapid Transit) is a town train.
[5] The word expatriate carries within Malaysia generally the connotation of foreigners who were send to Malaysia by a foreign company, which covers all their expenses above the local average standards.

identification. For those who have a similar perception with other GMS we were able to conclude that the bonds are: similar values, similar interests and similar fate. The same *lingua franca* and country of origin was mentioned only by one respondent when including answers solely to question No. (1) and (2) (see the list of our interview questions). Those that do not have a similar perception with other GMS regarded as due to social status. These respondents are not inclined to meet other GMS, unless they match their own social status. Expatriates are further perceived as people living in an unnatural world missing the true picture of the host country. One respondent expressed her dislike in GMS, who are too critical towards Malaysians. Another said that she does not like to mingle with GMS, who are 'too German in a negative way'.

All of the respondents are fluent in English except one, who ranked her proficiency to be moderate. 13 respondents speak other non-Asian language(s) of who two rated the level of their proficiency as fluent, three as moderate and eight as basic. The knowledge of Asian languages was slightly higher, since three respondents do not master any, while five do not master any other non-Asian ones. Three respondents are fluent in an Asian language, two moderate and ten have basic skills mostly in *Bahasa Melayu*. Most of the respondents also use English at work and in their everyday life, when dealing with locals and foreigners with other language background. 10 respondents also use German at their work place and five within their family. Respondents living in

a mixed relationship with a Malaysian use English for communication, one respondent uses also Tamil and two speak Malay occasionally with their partners. Two respondents admitted using an appropriate language to ease certain situations. One of them swears in German when she wants to express anger, but does not want others to understand the exact words. The other respondent speaks Malay with officers and policeman in order to achieve the goal with ease. Respondent No. 2, 4 and 13 feel that Malaysians like it when foreigners use their mother tongue(s) but they also learn and use *Bahasa Melayu* to be perceived better by the Malaysians. These last five mentioned respondents thus use language as a tool for self-categorization into local groups when they consider it to be appropriate.

The question 'What is your favourite language?' yielded the answer 'German' from 72% of respondents. 5.5% answered English and a local Asian language each and 17%, i. e. three replies, were ascribed to the variable 'other'. The answers we marked as "other" are the following:

> *'I speak German at work, English in life and Tamil with friends and volunteers in the society I'm active in. I like all three languages each in its own setting.'*
> (Rrespondent No. 2, he is fluent in all three languages)

> *'Swabian (Schwäbisch) is the closest one to me. I can't say German, even though I speak perfect German of*

course. But German is completely different from Swabian. It's as different as German from English, for instance. It is the language of my home, I grew up with it. I can express completely different things with it and feel other emotions when using it.'*
> (Respondent No. 13, he is fluent in English and Malay)

> *'The language of eye contact, since I'm no friend of many words.'*
> (Respondent No. 1, he is fluent in English, Portuguese and has basic language skills in Spanish)

The most frequently given reason for perceiving German as the favourite language was 'because it is my mother tongue'. The second most frequently given reason was 'because I have the best vocabulary in German so I can express myself best in it'. Some other reasons are stated below, all cited subjects are fluent in English:

> *'I feel safer when speaking German.'*
> (Rrespondent No. 17)

> *'Sometimes it's really demanding to speak a foreign language, especially when I'm tired. Words simply don't come as easy as in the mother tongue in a foreign language and when I'm tired, it's even worse. That's sometimes also frustrating ... because I like*

to express myself through rich vocabulary ... sometimes I just don't feel like talking in English at all, when I'm tired.'

(Respondent No. 18)

'I like to speak English, I'm an English teacher, I studied in England, I speak English already longer than for a half of my life. I can express myself very well in English, throughout the years sometimes even better than in German. But when I can talk German, fluently and freely like with you now, that's wonderful! Then I can be me. I can be myself.'

(Respondent No. 14)

'German – because it is the language in which I think most often.'

(Respondent No. 9)

'In what language(s) do you think and if it happens that you think in a foreign language, even though it is not necessary at that moment (5)', was our next question. 39% of the answers indicated thinking in German and 61% in various languages.

One respondent stated to use English proverbs with the explanation that some of them do not exist in German and that s/he finds them fitting in certain circumstances. S/he feels the need to apply those utterances to express hers/his attitude and thoughts. The explanations we interpreted as 'subconscious code switching' were described usually as

'sometimes English words pop up in my mind, even though I'm thinking in German'. The other frequent answer we added to this category was e. g. 'when I think of somebody, with whom I usually speak English, then I also talk to him in my mind in English'. Therefore it appears to us useful to orientate questions in future studies in more detail on this phenomenon and to explore it in regard to whom the respondents thinks about. One respondent realized during our session that the language he used last stays in his mind because he can speak and think well in three languages:

'Very often, but it is usually influenced by the time of day. The language I use as the first one ... and I usually switch to the language of my communication partner. All of that happens subconsciously. ... Then I keep thinking in the language I talked with to that person. ... Yes, even though the conversation is over and I am by myself again. ... Yes, I stay in that language until I deal with somebody in another language again.'

(Respondent No. 2)

Why is the topic the respondents think about important for their choice of language? The medium for thinking was described in all cases with statements such as 'I learned it in that language, I can't think of it in any other language' (Respondent No. 14). Respondent No. 13 stated:

'Praying and things like that I never translate. I grew up with it, yet when you ask me about computers, I will rather explain you all about it in English than in German, because I learned it that way. I started to work with computers as an adult here in Malaysia and whatever I know about it is in English. Then it's really difficult for me to speak about it in German.'

Are there situations when the respondents would prefer to use their mother tongue? This was confirmed with a 'yes' by 83% of the respondents. In what situations would that be, was answered with replies that we understand as belonging to two categories: when lacking language proficiency in the foreign language and when lacking physical energy. The lack of language skills causes uncertainty and negative feelings about oneself and the whole situation. The lack of physical power is interlinked with the lack of mental power, hence causes difficulty using a foreign language. Here some examples in the words of our respondents:

'At the doctor, offices, car workshops ... I feel like a fool there just because I don't know the words.'
(Respondent No. 8)

'When I have to understand small printed texts! They are usually tricky, companies don't want you to read them and they make it real hard to read them even in your mother tongue. Or when I need to follow such texts as instructions to do something.'
(Respondent No. 7)

'When I want to express myself precisely, when I want to go deeper in conversation. ... it's hard for me to read in English when I'm tired ...'
(Respondent No. 12)

The 17% who don't feel the need to use their mother tongue in any situations gave us these answers:

'I like to learn new languages.'
(Respondent No. 5)

'No, I'd rather use more English, especially at work, so that I could explain things better ...'
(Respondent No. 10)

'No, because I like to keep distance.'
(Respondent No. 1)

How do the respondents feel and what do they do in situations, when they do not understand the language others use around them? 39% stated they do not feel troubled by being a part of conversation they do not comprehend, whereas the other 61% do feel troubled. The former finds that in Malaysia it is completely normal

to be excluded through language from a conversation, so they just observe the others – the mimicking and gestures of others or they just 'switch off'. Therefore this group could be characterized as a passive one. The second group is on the contrary an active one, since all the respondents do not hesitate to interfere by asking questions, such as 'What did s/he say?' or by saying something to call attention to themselves. Most of the respondents stated that when that does not work, they stop trying and either endure the situation with a negative feeling or leave. Some of the respondents from the latter group emphasized that they view using any language the conversation partner cannot understand for an unnecessary long time as highly impolite.

Our next question was, whether the respondents experience lack of expression of their personal identity in those kind of situations or in any kind of situation, where they lack certain language proficiency. Again the percentage of 'yes' was higher than those 'no', and the percentage remained the same as in the previous data set. The 39% who gave 'no' as an answer were not able to explain their reasons. Among the 61% experiencing lack of expression of their personal identity the answers were dominated by the fear from misinterpretation of their identity, see example below:

'Of course I feel like passing out, when I'm not able to express myself in a foreign language the way I can in my mother tongue. And of course I feel and realize then that my

conversation companion doesn't get the impression from me he would have, if I used my mother tongue.'
(Respondent No. 8)

However, when it comes to relationships, the minority, i. e. 44%, think their companion should also speak German. The majority thinks it sufficient, when their companions speak English or any other tongue they can both understand. Yet 83% hold the opinion that it is important to learn the mother tongue of their partner and 72% want or would want to their children speak German. It might be noted that 61% of our respondents live in a relationship with a non-German speaking partner. The reasons given for the importance of the children to master German were most frequently due to its advantages, such as the children can later on have better chances on the job market or have a conversation with their German speaking grandparents. Respondents who consider it important that their partner either speaks or learns also their mother tongue were predominantly female. Among their reasons was the believe that the language might: decrease the misunderstandings in the relationship, demonstrate respect and understanding for the other, enhance closeness (also due to similar social background) and enable a relationship that is not based only on physical attraction.

As discussed above, 56% don't find it important for their partner to learn their mother tongue, but 83% believe it to be important for them to learn the mother tongue of their partner so that they could

learn something about their companion's culture. Here two of the replies we received to question (8):

> *'Yes, absolutely, that is the only way to truly understand the mentality and culture of a person!'*
>
> (Respondent No. 3)

> *'Yes, but only to learn something about the culture behind it. I think the culture can only be learned through the language. Everything else is just a try, but one will never be accepted by the culture as a part of it. Tamils talk with me about 'these white ones...', because they see me as a Tamil.'*
>
> (Respondent No. 2)

The first example shows that the awareness of the role the language(s) one speaks only becomes apparent when talking about other individuals. The comparison between the self and other is a crucial factor in investigations of identity. However it seems insufficient to enhance the subject's awareness of the role the language(s) he master play for himself. A double check on this phenomenon was made by question (11), which we asked as the penultimate question during our interviews ('To what extent does your mother tongue and other languages you use play a role in expressing your identity?'), when the majority of respondents still believed that their language skills have no influence on their identity or the way they are perceived by others.

In the second example our respondent No. 2 talks about being 'accepted by the culture', but what it means in reality is of course to be accepted by the people, who speak the language. Thus in this case we come across once again - the awareness language can play in social identity and self-categorization.

The majority, i. e. 78%, of the respondents do not prioritise meeting people who speak German and choose to spend their free time with people with similar interests and/or problems. Among the remaining 22% were respondents, who often came to Malaysia with poor proficiency in English, therefore sought people, who shared their mother tongue. Most of them remained good friends, while they also gained local or international friends throughout the years.

While 39% of the respondents heard that they changed their personality from their friends, question (10) a), 56% of them think of themselves to have changed, question (10) b). Looking at the data based on crosstabulation, 11 cases out of 18 match their identity perception with the perception of their identity by others. Another 5 cases are perceived by their friends as unchanged, although they themselves believe it to be otherwise and two cases thought the opposite. We take into account that the data set for this question is very subjective, since we have not the statements from the actual friends, but from the respondents responding on behalf of their friends. However most of the replies in terms of identity changes that we received can be interpreted as adaptation to Malaysian circumstances and expansion

of knowledge. Another feature we detected during the data analysis is perception in the change of personality. 5 subjects feel to have become more laid back and patient. On the contrary, respondents, who do not perceive changes in their personality expressed the opinion that their personality and identity is to a large extent conditioned by their inborn attributes.

'To what extent does your mother tongue and other languages you use play a role in expressing your identity?' was the penultimate question we asked, question No. (11) in this paper. As mentioned in the first paragraph of the data analysis, 83% of the respondents consider the language(s) they speak an important feature of their identity. Accordingly we were able to distinguish two main factors in the construal of their identity: as an expression of their personal identity and as a tool for the expression of their social identity. The latter expression varies with the level of their motivation to express their self-categorization as an in- or out- group member. Respondent No. 5 for example holds the opinion that the level of his language proficiency conditions the level of expression of his identity. He further believes that 'the language skills are the keys to the world: the better the language skills, the more doors stand open.' Similar views are held by some other respondents, one of them states:

'My mother tongue is important for my identity, because only in that language I can search for various formulations in the most detailed

way possible and surprise people with them.'

(Respondent No. 5)

Viewing the mother tongue as a feature in common in terms of group memberships can be noted in the response of our interview partner No. 17.

'One notices, how easy it goes, when one speaks a common language. What kind of appurtenance there can be thanks to language alone. How strong it can be, how much it can bring us together. One can survive with English well, pragmatically and rationally, but some things one can express only, one has to use his mother tongue and then other connections are made. I believe, it is simply like that. And then there are situations, when it becomes clearly apparent.'

The remaining 17% feel that their mother tongue doesn't play any significant role in expressing their identity. They reasoned their opinions with the following statements: 'The country of origin influences the way one is perceived by others. Germans are regarded as reliable. But that has nothing to do with the language' (respondent No. 6). Respondent No. 10 believes that his mother tongue influences his identity in a very limited way, because he believes to express his identity and to perceive other's identity via other features, such as 'sex appeal' and respondent No. 1 is

convinced that languages play no role in somebody's identity whatsoever: 'Words are not important at all. (*Wort ist Schall und Rauch.*)'.

The final point we addressed in our interviews was question No. (12) - Do you judge others by their language skills? When? How? In terms of frequency, we detected 83% of answers as 'yes' and the remaining 17% as 'no'. The replies to 'When?' were usually related to interaction with new people. The answers we gained to 'How?' can be basically divided into two categories: the level of interest for the communication partner and judgments about the intelligence of the communication partner. In the first case the respondents gain or lose interest for their communication partners based on the language skills their partners possess. In the latter case they evaluate the other on her/his mental ability based on the language proficiency. One respondent stated that she takes language very seriously most of all in the professional life: 'I won't start any business partnership with somebody unable to demonstrate good language skills, because I take that kind of person as incompetent'.

CONCLUSION

With our case studies we aimed to investigate the relationship between the language and identity among German mother tongue speakers living in Malaysia. We fall back on the Social Identity Theory and the Social Categorization Theory in regard to research on language and identity. Based on data gained through a series of interviews we came to the conclusion that the use of a foreign language serves as a substitute for the mother tongue in the construal of identity only to a certain extent. This phenomenon becomes most apparent in situations where the competency of the language is crucial for the respondent involved in communication. Depending on the importance of the situation the respondents experience a different level of achievement/failure in expressing their identity. At the same time the respondents evaluate identity of their communication partner by rating their language skills. It means that our results support Joseph's (2004, p.13) and Spolsky's (1999, p.181) suggestion that individuals decode and evaluate the identity of others also based on language and thus perceive linguistic acts as acts of identity, what was suggested in the work by Le Page and Tabouret-Keller (1985). The perception of one's own achieved/failed identity expression supports at the same time Pavlenko's and Blackledge's (2004, p.19) argument that identity choices are not possible in all situations. Our findings further show that the majority of our respondents don't feel well in situations when they can't understand the language others use around them. In this regard our results further indicate that the identity perception and expression is at the same time most apparent when accompanied by strong feelings (positive or negative). This is however an observation based on the overall evaluation of our data and since we did not explicitly ask about the intensity of the feelings our respondents experienced in

given situations, the matter requires further investigation. The fact that our respondents feel either good or bad when it comes to their comprehension and proficiency in a foreign language does nevertheless indicate a linkage between a personal and social identity that practically all researchers we mentioned in the literature review claim for the language to have. The linkage was reflected by the respondents when reporting also on their behaviour in such situations. We were not able to detect the length of stay in Malaysia as an influential factor for the identity perception of the respondents. A short/long term relationship with a non-German speaking partner also does not play an important part of the identity perception of the respondents. The mother tongue however becomes replaceable, provided the respondent gained the knowledge in a certain area in a foreign language. In this case, the individual will have difficulty to communicate about that particular area in his mother tongue except with practice. Nevertheless a broader study with a larger number of respondents could bring a better insight into these matters. We do not wish to propose that individuals' perceptions and expressions of identity are based solely on their language proficiency. Yet we wish to stress that in the case of our respondents the possibility to use the mother tongue as well as their level of foreign language proficiency and the level of language proficiency of their communication partners does play a significant role in the way they express and perceive identity.

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PERTANIKA JOURNALS

The Level of Satisfaction towards Flood Management System in Kelantan, Malaysia

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ABSTRACT

The community in the Kelantan River Basin is still confronted by the problem of ineffectiveness of flood management system despite the government's efforts to come up with various approacheson flood management systems to assist flood victims. The main objective of this study is to evaluate the level of residents' satisfaction towards the implementation of flood management system. This study is quantitatively designed which utilized a questionnaire distributed to 160 respondents selected by stratified cluster simple one-stage sampling technique. The statistical technique used is mean comparison and one-way ANOVA to explain the residents' perceptions among the districts involved with regards to the efficiency of the implemented flood management system. Based on the outcome of the study, the mean value related to the level of satisfaction of flood victims showed a decreasing pattern from before, during and after flood occurrences. For example, the mean comparative study reveals that the residents of Tanah Merah district recorded the highest dissatisfaction level for the three periods (before 3.04, current 2.95 and after 2.02) in comparision to other districts. The results illustrate a low efficiency level in flood management before flood occurrence. For instance, the community is still not quite satisfied with the effectiveness of warning system, action time intervals and current announcement time intervals regarding latest developments in flood situation with all these variables not achieving significant level of 0.05. The same applies to the situation on after flood effects such as in terms of dispensing flood assistance, controlling of infectious diseases and actions toward each resident's complaints. Thus, government have to reconsider about the level of residents' satisfaction to current flood management systems namely before, during and after floods occurrence and systematic planning in flood management

system reflects proactive cooperation among relevant parties in preparation for flood disaster.

Keywords: Satisfaction level, flood management system, river basins

INTRODUCTION

Flood occurs when water over flows from the river banks and inundates the closest plain where water was not prevalent earlier.. Normally, this overflow happens when heavy rain takes place non-stop for a duration of several days at certain locations. Flood is also defined as a situation where water flows exceed the carrying capacity of a river resulting in overflows over the river banks (Erickson 1971, Goh 1981, Griffiths 1985, Hoyt & Langbein 1966, Jamaluddin & Ismail 1990, Smith 1993).

Massive floods in Malaysia occurred as early as 1886, 1926, 1967, 1971 and 1986 and lately this situation has continuously worsened.. One of the areas in Malaysia which experienced frequent flooding is in the Kelantan River Basin (DID, 2005). This is because the flood that inundated the basin is categorised as a major flood area (?) and the frequency of occurrence is high (Sham, 1973). For example, the major flood episode in 1967 caused the area to be declared as Emergency Area as 84 percent of residents of Kelantan State were affected and a lot destruction of basic facilities such as roads and hospitals (Low, 1983; Sham, 1973).

To control flood, there are two approaches used by the government namely the structured and non-structured method. Normally, the structured method of controlling flood is more objective in nature since the level of risks is measurable and convincing (Cvetkovich *et al.* 1992). However, due to the escalation of cost, the non-structured method is also important to be introduced as an alternative method to flood management. In addition, the involvement of government, community, private sector and NGO's is vital to maximize the effectiveness of any forms of implemented flood management. For the Kelantan River Basins, although the government has already implemented various steps and actions to assist flood victims at the before, current or after flood stage, the residents are still being engulfed with the issue of poor effectiveness of the flood management system.

The main question however is to understand the level of satisfaction among residents involved toward the implementation of the flood management system. This study assumes that this level of satisfaction among residents towards government flood management system is significantly varied among the districts involved at each stage; before, during and after the flood occurrence. Therefore, the objective of this study is to evaluate this level of satisfaction towards flood management system in Kelantan River Basins at the three stages.

Evaluation of residents' satisfaction includes items such as response on the warning system, efficiency in warning system delivery, response time, reminders and cooperation of relevant authorities. As

for the during flood stage, the following aspects are taken into consideration namely rescue equipment such as boat and safety/life jackets, safety during transfer or evacuation process, cooperation of rescue team, cleanliness of evacuation centers temporary shelter, foodstuff supply, evacuation centers temporary shelter surroundings, service and assistance distribution. For the after flood stage, among the questions raised are distribution of flood assistance, health control, public amenities repairs and public complaints.

The occurrence of flood is synonymous to the state of Kelantan due its significant frequency in that state. The flood occurrence also cause losses and damages to properties and many lives. One of the main reasons for the high incident of flood in the state is due to large-scale land clearing activities for commercial agricultural purposes such as for rubber and oil palm estates (Tuan Pah Rokiah, 2010). The total area of land use such as forest, rubber and oil palm indicates that there is a big annual change as most lands are utilsed for commercial agricultural activities (Table 1).

For instance, during the year 1961 to 2006, Kelantan River Basins has experienced flooding for a total of 275 times at early warning level, 92 times at warning level and 23 times at dangerous level (Tuan Pah Rokiah, 2010). The same situation also exists for other sub-basin regions such as Lebir, Galas, and Pergau which recorded increasing flood frequency and magnitude. This scenario also illustrates higher flood risk tendency if relevant parties do not take prudent mitigation measures including flood management system especially for the three stages of before, during, and after flood occurrence. If proper measures are implemented, unwarranted events such as loss of properties, lives, and spreading of infectious diseases can certainly be avoided.

In Malaysia, flood management normally employs structural engineering approach. However, this approach is found to be less effective in tackling human related flood issues or problems (Chan, 1995). According to Chan (2009), since flood problem is closely related to human factor, therefore, the best approaches to solving flood problem should also be non-structural (humanity-based). The importance of this non-structural approach must be reemphasized through the concept of environmental humanities (Chan, 2010).

Also, according to Levy *et al.* (2005) the proposal for Disaster Support Systems (DSS) is a non-structural approach introduced to improve the planning and effectiveness

TABLE 1
Landuse Changes by Year 1984, 1997 and 2004

Landuse Types	1984 Area (ha)	1997 Area (ha)	2004 Area (ha)	Average
Forest	10454677597.83	801154.92	710073.92	3485396276
Rubber	116835.97	163510.79	142170.10	140839
Oil Palm	20656.6	65835.01	87974.12	58155.2

Source: Kementerian Pertanian Malaysia 2004

of flood management. Among the vital elements of DSS are communication, knowledge transfer, skill improvement in forecasting ability and the transparency of strategic flood decision management. In addition, the study by Vari (2002) at Lower Tisza found that the forms of flood control is not necessarily needed to be informed but it is vital that the public be informed of the level of risks associated with flood so as not to create a panic situation in the community.

Study in Vietnam found that the effects of *doi moi* policy really provide much of awareness to the community in order to face the flood disaster by building more durable housing, building home in stages using better resistant building materials. Up to the year 2005, there was 17 percent of houses built using more durable materials, 65 percent using semi durable materials and 18 percent still using less durable materials (Tran *et al*. 2009). According to Warner (2008), efficient flood management system requires a close cooperation by each level of the community, private sector and local leaders. These groups should not be left out in facing major flood disaster but they should act an "army" to help the flood victims.

STUDY AREAS AND RESEARCH METHODS

The study coveredKelantan River Basins which is divided into several sub-basins namely Sungai Kelantan, Sungai Galas, Sungai Lebir and Sungai Pergau (Fig.1). The total area of this Kelantan River Basins is about 13,100 square km or 85 percent of the

Kelantan state area consisting eight districts namely Kota Bharu, Pasir Mas, Tumpat, Tanah Merah, Machang, Kuala Krai, Jeli and Gua Musang.

The selection of the respondents is based on the worst flood-hit area and the most frequent occurrence of flood for each of the districts involved. For example, Kuala Krai district in the Manek Urai area, has been chosen to represent the district because the area was worse-hit by flood for each and every year. Based on the same principle, the districts that were involved in the selection of respondents are Kota Bharu, Pasir Mas, Tumpat, Tanah Merah, Machang, Kuala Krai, Jeli and Gua Musang with a total respondent of 160 people.

The design of this study is quantitative in nature where questionnaires were distributed to 160 respondents. There are 4 sections in the questionnaire namely demographic, flood management system at before, current and after flood stage. To measure the respondents' level of satisfaction toward the flood management system by the government, Likert's Scale is used ranging from 1 (not satisfied) to 4 (strongly satisfied). Respondents were selected from flood victims relocated to each district relocation centers. This study uses stratified cluster simple one-stage sampling technique as used by Xie *et al*. (2008). A total of 20 respondents were selected using the said technique for each district which cumulatively totaled to 160 respondents. According to Carver and Nash (2005) and Mohd. Majid (1990), sample size of 30 is adequate for the purpose of inferential

statistics. However Mohd. Majid (1990), added that sample size of 100 is better to provide more representation of respondents of various background.

In this study, respondents are required to fill out questionnaire forms after the flood and the respondents are the same persons for the 3 situation of before, current and after the flood occurrence. However, for the district of Pasir Mas, the responses are only for the before and after flood occurrence as there were no flood victims being relocated to relocation center. Therefore, this study validates that the sample size is adequate, suitable and acceptable for statistical analysis purposes.

Since the study is quantitative in nature, all the data collected from the questionnaires were analyzed using the inferential statistics such as mean comparison, one-way ANOVA and correlation. The selection of these statistical techniques is deemed appropriate considering the types of data collected and hypotheses formulated, for instance, the application of mean comparison and one-way ANOVA techniques to demonstrate the level of resident's satisfaction amongst the districts towards the current flood management system as frequently used by Abd. Rahim (1999, 2009). Mean comparison analysis is applied to obtain the overall views of a particular phenomena and standard deviation statistic is used to detect variation in perception among all the respondents. On the other hand, one-way ANOVA method is utilized to detect the level of significant
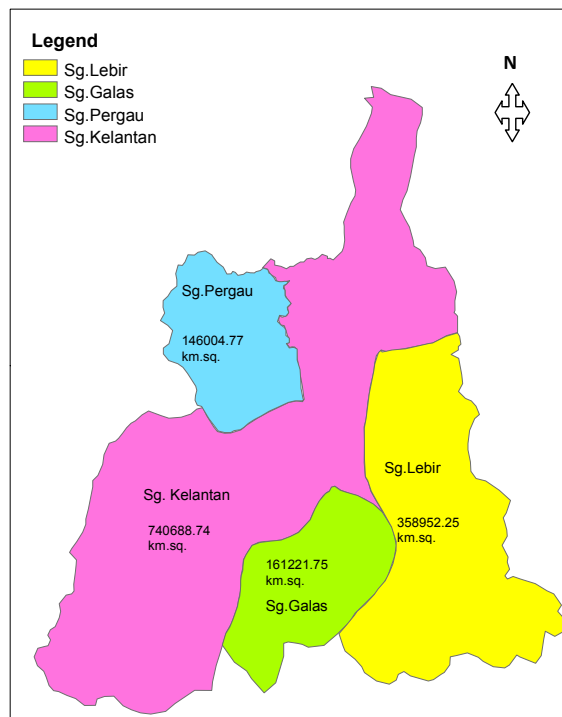
Fig.1: Sub-basins of the Kelantan River Basin
(Source: Tuan Pah Rokiah, 2010)

in perception differentiation among the respondents consisting of three or more groups (among the districts).

RESULTS AND DISCUSSION

The efficiency of flood management system is essentially important because it influences two vital components; the safety of human lives and property damages and losses. If the government is practicing proper and efficient flood management system (before, during, and after flood occurrence), the extent of loss or damages of human lives and properties can certainly be incrementally reduced (Vari, 2002).

The efficiency of flood management system can be evaluated through various approaches, one of which is through measuring the level of satisfaction among the residents who live within the study area. This level of satisfaction can be evaluated from several aspects, for instance, efficiency and effectiveness level, or cooperation and assistance provided by the government. Hence, two types of analysis are carried out namely the mean comparison and one-way ANOVA to rationalize the study hypothesis that there exist significant differences or discrimination of residents' perceptions among the districts towards the efficiency of flood management system delivery.

Mean Comparison

To detail out the study hypothesis that there exists significant differences of residents' perceptions among the districts towards the efficiency of flood management system delivery (before, during, and after), mean

comparison method is used. Evaluation of residents' satisfaction at before flood occurrence stage includes warning system, efficiency in warning system delivery, response time, reminders and cooperation of relevant authorities to the residents involved. Based on mean value for the before flood stage, the study found that Gua Musang and Tumpat District recorded the highest mean value of 3.46 each and standard deviations of 0.3697 for Gua Musang District and 0.3346 for Tumpat District respectively.

This scenario illustrates that the level of satisfaction is high among the residents in these two districts towards the flood management system at the before flood occurrence stage as compared to other districts. For Tanah Merah and Kuala Krai District, the results show the lowest mean scores of 3.04 and 3.30 respectively with corresponding standard deviations of 0.3700 and 0.3898. This clearly demonstrates that residents in these two districts have a rather low level of satisfaction towards the efficiency in flood management system in their districts. The difference in higher or lower mean value is dependable on the level of cooperation among the government agencies of corresponding districts in delivering flood information before the occurrence of flood. For the other districts, mean recordings are almost similar with readings ranging from 3.33 to 3.39. This also indicates that the residents in these districts within the Kelantan River Basins are generally satisfied with flood management system at the before flood occurrence.

Furthermore, to illustrate the level

of satisfaction among the flood victims during the flood occurrence, a number of questions need to be addressed. These include rescue equipment such as boat and safety jacket, safety during transfer or evacuation process, and cooperation of rescue team, cleanliness of evacuation center/temporary shelter, foodstuff supply, evacuation center/temporary shelter surroundings, and service and assistance distribution. The study outcomes show that for the during flood stage, there is a slight variation in the mean value where the scores for each districts decreased. This is an indication that the level of satisfaction among the residents involved for these districts are generally low especially for Tanah Merah District with mean score of 2.95 and for Jeli District is 3.07. Standard deviations for these two districts are 0.3201 and 0.1753 respectively (Table 2). The difference in standard deviations for each

TABLE 2
Mean value for the level of residents' satisfaction towards flood management system by districts

Stage	Districts (Jajahan)	Overall Mean	SD
Level of Satisfaction Towards Flood Management System BEFORE Flood Occurrence	Gua Musang	3.46	.36970
	Jeli	3.35	.28756
	Kota Bharu	3.33	.35145
	Kuala Krai	3.30	.38984
	Machang	3.33	.41413
	Pasir Mas	3.39	.36109
	Tanah Merah	3.04	.37009
	Tumpat	3.46	.33467
Level of Satisfaction Towards Flood Management System DURING Flood Occurrence	Gua Musang	3.11	.21437
	Jeli	3.07	.17531
	Kota Bharu	3.11	.19759
	Kuala Krai	3.21	.19051
	Machang	3.16	.17548
	Pasir Mas*	-	-
	Tanah Merah	2.95	.32013
	Tumpat	3.21	.13650
Level of Satisfaction Towards Flood Management System AFTER Flood Occurrence	Gua Musang	2.27	.08156
	Jeli	2.27	.11180
	Kota Bharu	2.30	.08156
	Kuala Krai	2.26	.08377
	Machang	2.11	.24839
	Pasir Mas	2.30	.08719
	Tanah Merah	2.02	.21134
	Tumpat	2.28	.10949

Includes All Districts except Pasir Mas- No data DURING flood (N= 140)

(Source: Tuan Pah Rokiah, 2010)

of the districts demonstrates that there are significant variations with regards to the level of residents' satisfaction towards the services being provided to them during the flood occurrence.

This situation reveals that flood victims from both districts are rather less satisfied with the flood management system implemented by the government. The districts that recorded highest mean value (3.21) are Kuala Krai and Tumpat. However, this highest mean value is for the during flood occurrence stage. When compared with the mean value at the before flood occurrence stage, the value is actually lower (i.e. for Tumpat, the mean value of before flood occurrence stage is 3.46). This situation indicates a reduction in mean value of the during flood occurrence stage as compared to the mean value at the before flood occurrence stage. Besides, there is one district (Pasir Mas) with no data during flood stage due to possibly the non-existence of flood victims being relocated or relocating to relatives' house.

This district was actually one of the worst flood hit districts around the year 1970's to 1980's (Tuan Pah Rokiah, 2010). However, after a number of flood mitigation measures were built along Kelantan River including the construction of higher concrete levees and pump houses, the intensity of flooding in this area was reduced to about 0.5 meter. This has resulted in a lesser number of flood victims needing relocation to temporary shelter. The opposite is happening to the residents who live in the district of Pasir Mas on the Thailand border which experiences

more frequent and severe flooding due to the overflows from Golok River (i.e. Pekan Rantau Panjang).

The trend in mean value also shows that the level of residents' satisfaction is declining for the after flood occurrence stage. Among the questions that need to be addressed include the distribution of flood assistance, health control, public amenities repairs, and public/residents complaints. Tanah Merah district recorded the lowest mean value of 2.02 with standard deviation of 0.2113 and this is followed by Machang district with mean value of 2.11 (standard deviation of 0.2483). On the other hand, Kota Bahru and Pasir Mas districts recorded the highest mean value of 2.30. The mean value for other districts ranges from 2.26 to 2.28. This situation may be caused by urgent needs by the residents of Pasir Mas dan Kota Bharu districts as compared to Tanah Merah and Machang districts after the flood such as complaints on road or bridge damages by the flood.

Based on this study, mean value for the level of flood victims' satisfaction toward the efficiency of flood management is declining from the time before, during, and after flood occurrence. Furthermore, the level of flood victims' satisfaction in Tanah Merah district is generally unacceptable. This is because in the three stages of flood, the mean value recorded for this district is the lowest (before 3.04, during 2.95 and after 2.02). This scenario exhibits that the flood management in Tanah Merah district needs to be given priority for improvement as compared to the other districts such

as Kota Bharu and Pasir Mas districts. In addition, Tanah Merah district is one of the districts in Kelantan that experiences higher frequency of flooding during the rainy monsoon season. Hence, prudent monitoring on the part of government must definitely be undertaken in order to improve the level of flood victims' level of satisfaction in that area. Overall, there exist differences in the level of satisfaction among the communities towards the efficiency of flood management system in the Kelantan River Basins.

One-Way ANOVA

Meanwhile, to detail out the study that there exist significant differences in perceptions among residents from the various districts, discussion can be divided into before, during and after flood occurrences.

Before Flood Occurrence

To examine the level of residents' satisfaction toward the efficiency of flood management system for each district, a total of eight questions were presented. However, based on study outcomes, only four out of eight questions achieved significant level. For the question on the delivery method of flood warning system, the mean value is 3.34 and the significant level is at 0.05 where P=0.014. This demonstrates that there are variations in residents' perceptions in each district within the study area.

On the question regarding the advise/reminders on safety and flood danger, the mean value is 3.43 and the significant level is at 0.05 with P=0.009. The residents' norms of not giving much attention to the

safety and flood danger has resulted in the existence of differences of opinions among them with regards to the safety reminders/warnings issued by the authority. In addition, the "lassie faire" attitude among the residents also contributed to the wrong and loose interpretation on safety issues.

On the question of patrol/surveillance undertaken by the authority of respective districts, the mean value recorded is 3.36 and the significant level is at 0.05 with P=0.011. Differences in residents' perception regarding patrol and surveillance by authority of respective districts are based on frequency of patrol, competency and other factors. For the question on general views of the overall flood management system before flood occurrence, the mean value is 3.21 and the significant level is at 0.10 with P=0.061.

In addition, there are four questions that do not show significant differences in residents' perceptions in satisfaction towards before flood stage management system. These include questions related to the efficiency of warning system, time intervals given to residents to act after warnings have been issued, time intervals of flood reports disseminated to residents, and cooperation given by the authority.

During Flood Occurrence

One-way ANOVA analysis for during flood occurrence indicates an increase in the number of questions with significant level at 0.05. This shows an increase of the number of residents with different opinions regarding the level of satisfaction towards

the efficiency of flood management system during the flood. To evaluate the level of satisfaction during flood, a total of 19 questions were presented. Based the study results, a total of 17 questions indicates differences in opinions among the districts at the significant level of 0.05 (Table 3). For an evaluation of satisfaction level among the respondents within various districts, there is one district with no data for the during flood stage. The district is Pasir Mas where there were no flood victims being evacuated. This

makes the total number of respondents to be 140 for all the seven districts.

As a whole, the residents of Kelantan River Basins hold different views among the districts in relation to the management system during flood. On the level of satisfaction, a total of eight questions recorded mean value from 2.21 to 2.89 and this certainly indicates a low satisfaction level, thus it can be concluded that the efficiency of management system is weak. This means that in general, the residents in

TABLE 3
One-way ANOVA for the level of respondents' satisfaction during flood occurrence for all districts

Level of Satisfaction for Flood Management DURING Flood	Mean	F	Sig.
Competency in terms time taken in rendering rescue assistance	2.21	5.626	.000
Safety emphasis during victims' evacuation activities	3.46	4.277	.001
Safety surveillance of victims' houses and properties left behind	3.53	4.407	.000
Cooperation & consideration of rescue team.	3.53	3.783	.002
Cleanliness of evacuation center/ shelter, toilet, sleeping space, and food preparation place	2.34	4.419	.000
Adequate food preparation and healthy diet	2.84	6.225	.000
Cleanliness of evacuation center/ shelter surroundings from garbage, food wastages, or liquid wastes	2.40	7.041	.000
Maintenance of cleanliness during food and beverage preparation	2.57	2.847	.012
Provision of clothing, blankets, and diapers to flood victims	3.02	9.352	.000
Spare-time activities for adults at evacuation center/ shelter	2.89	7.379	.000
Spare-time activities for children at evacuation center/ shelter	2.77	3.682	.002
Health monitoring at evacuation center especially for senior citizens and children	3.64	3.576	.003
Monitoring of safety by the authority	3.78	3.010	.009
Assistance distribution at evacuation center/ shelter	3.72	4.081	.001
Service of workers/staff at evacuation center/ shelter to flood victims	3.75	2.860	.012
Existing flood conditions report for flood victims at evacuation center/ shelter	3.73	1.995	.071
Cooperation from authority to solve problems during stay at evacuation center/ shelter	3.73	3.619	.002

All districts except Pasir Mas - No data (N= 140)

Source: Tuan Pah Rokiah, 2010

the study area possess somewhat identical views towards the flood management system during flood in their areas. There were however, significant differences of views among residents of different districts within the study area toward the efficiency of management during flood as implemented by the government.

After Flood Occurrence

To examine the level of residents' satisfaction towards management system after flood, there were six questions presented. These include those related to assistance, controlling of infectious diseases, public amenities repairs, public complaints and others. The study results show that three out of six questions achieved significant level at 0.05. On the other hand, the rest of the questions indicate that there are no differences in views among the respondents of all the districts. This includes questions on public amenities repairs, safety surveillance of authority and general views of respondents after flood occurrence.

The questions that recorded significant differences in opinions amongst the respondents of various districts are questions related to assistance to flood victims, control of infectious diseases, and complaints where each questions recorded the mean value of 2.76, 2.63 and 1.98 respectively at significance level of 0.05 with corresponding P=0.000, 0.000 and 0.022 (Table 4). However, if these mean values are further examined, there seems to be a tendency of respondents to have a low satisfaction level for management system after flood. For instance, the mean values just recorded low scores ranging from 2.01 to 2.76 which show situation of less satisfactory. Furthermore, there were values recorded lower than 2.0 such as 1.98 which clearly indicates total dissatisfaction of the management system.

As a whole, these situations illustrate the level of efficiency of management after flood is considered low. An example is from the point of views of rendering assistance, controlling of infectious diseases after flood (cholera, dengue) and actions for each resident compliant. Hence this study found that there were significant differences with regards to the residents' satisfaction on government management system for situations of before, during and after flood among the districts in Kelantan.

TABLE 4
one-way anova for satisfaction level after flood for all districts

Question No.	Satisfaction level AFTER flood	Mean	F	Sig.
1.	Assistance to flood victims	2.76	35.038	.000
2.	Control of infectious diseases AFTER flood	2.63	7.419	.000
5.	Immediate actions taken for any public complaints or problems	1.98	3.353	.022

All Districts (N= 160)

Source: Tuan Pah Rokiah, 2010

CONCLUSION

Systematic planning in flood management system reflects proactive cooperation among relevant parties in preparation for flood disaster. Thus, government has to consider about the level of settlers' satisfaction to current flood management systems namely before, during and after floods materialization. With such prudent actions, it can certainly assist flood victims in the preparation of any flood disaster especially to those who resides in more vulnerable flood-prone remote/interior lowlands. This study proposes improvement to the information delivery techniques such as the effectiveness of early system (P=0.07), action time interval (P=0.18) and announcement time interval (P=0.23).

Based on this study, the residents or the community are still not satisfied with the flood management system as the analyis found that all the valeus are not significant at 0.05. Furthermore, for the period of after flood, there are two aspects that the residents were not satisfied at the insignificant level of 0.05 that is repairs of damaged public facilities (P=0.12) and monitoring of safety and security after flood (P=0.11). However, for the period of during flood, the residents show some satisfaction towrds the flood management system implimented by the government.

Therfore, the government should improve several aspects of the flood management system especially before the flood such as infomation delivery techniques in terms of the effectiveness of earling warning system, time interval for disater announcement and time interval for actions. And for the period after flood, the government should be sensitive to the timely repairs public faclilities and improvement on safety and security monitoring.

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Psychometric Evaluation of the Australian Inventory of Family Strengths (AIFS) on Rural Malay Families in Malaysia

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ABSTRACT

This study examines the psychometric properties of Australian Inventory of Family Strengths (AIFS) in a sample of 200 rural Malay families in Malaysia. The exploratory factor analysis of AIFS revealed 3-factor solution and were labelled as Shared Values, Togetherness and Respectful Communication. The overall scale had a high degree of internal consistency ($\alpha = 0.96$). Results indicate that the three factors were moderately correlated. The validity of AIFS was also satisfying in terms of the actual data matching the expected correlation between family strengths measure and the variables of children's social competence and self-esteem. The results of this study imply that the construct of family strength and its measurement from the West can be helpful and applicable in understanding the characteristics of family strength of rural Malay families in Malaysia.

Keywords: Family strengths, factor structure, psychometric properties, respectful communication, shared values, commitment

INTRODUCTION

Family strengths have been a key of interest among helping professionals who provide family interventions, programs, and support services. Thus, it is important to gather information about the competencies and capabilities of families from their own perspectives using a standardized assessment tool of family strengths. Family strengths are conceptualized as "those forces and dynamic factors…which encourage the development of the personal resources and potentials of members of the family and which make family life deeply satisfying and fulfilling to family members" (Otto, 1975, p.16). Comprehensively, family strengths are defined as the relationship patterns, intrapersonal and interpersonal

skills and competencies, and social and psychological characteristics which create a sense of positive family identity, promote satisfying and fulfilling interaction among family members, encourage development of the potential of the family group and individual family members, contribute to the family's ability to deal effectively with stress and crisis (Stinnett, Chesser, & DeFrain, 1979; Williams, Lingren, Rowe, Van Zandt & Stinnett, 1985; Schlesinger, 1998; Moore, Chalk, Scarpa, & Vandivere, 2002). Along the lines of these conceptual frameworks, several self-report instruments have been developed to assess family strengths, for example Family Strengths Inventory (Stinnett & DeFrain, 1985), Family Strengths Scale (Olson, Larsen, & McCubbin, 1983), Family Functioning Style Scale (Deal, Trivette, & Dunst, 1988). These instruments have been proven to be reliable and valid in the West, and in turn have helped researchers further clarify the construct of family strengths on the one hand, and on the other hand, have provided practical tools for practitioners to find ways of intervention to enhance the family strengths in the real-life environment.

The Australian Inventory of Family Strengths (AIFS) (Geggie, DeFarin, Hitchcock, & Silberberg, 2000) was chosen to assess Malaysian's family strengths in this study because it has broad conceptual base which covers a multiple dimensions of family strengths where this measurement has six dimensions that strong families across the world have in common (Stinnett & DeFrain, 1985; Stern, Yuen & He, 2004).

It has been noted that a more reliable measurement in any assessment is to use multiple dimensions so that the measurement will produce consistent outcomes. The six dimensions in AIFS are sharing life together, caring for each other, communicating effectively with each other, valuing each other, connecting spirituality for well-being and growing together through challenges. Factor analysis of the 85 items of AIFS resulted in the emergence of four factors, namely, Togetherness (Factor 1), Respectful Communication (Factor 2), Shared Values (Factor 3), and A Sense of Belonging (Factor 4). However, the reliability and validity of the AIFS were not reported (source).

In the present study, the variables of social competence and self-esteem are to be used as the predictive validity indicators of AIFS in order to further understand its potential for cross-cultural application in the Malaysian culture. Children' social competence and self-esteem are chosen as predictive validity because these two variables have been consistently related to various psychological outcomes (source, based on study). For example, children with higher levels of social competence tend to elicit positive responses from others and are skillful in forming close and supportive relationship (Mendez, McDermott, & Fantuzzo, 2002). On the other hand, children who have high level of self-esteem tend to be emotionally stable (Judge, Erez, Bono, & Thoresen, 2002), attain higher academic achievement (Trautwein, Lüdtke, Köller, & Baumert, 2006), and possess low level of depression (Watson, Suls, & Haig,

2002). The aims of the present study were to explore the factor structure of the AIFS and to examine its reliability and validity among Malaysian people, in order to further understand its potential for cross-cultural application in the Malaysian culture.

METHOD

Sample

The respondents were 200 Malay families and selected from ten Federal Land Development Authority (Felda) schemes in Negeri Sembilan (Felda Bukit Jalor, Felda Bukit Rokan, Felda Pasir Besar and Felda Sg. Kelamah) and Pahang (Felda Bukit Kepayang, Felda Bukit Mendi, Felda Lurah Bilut, Felda Bukit Puchong, Felda Mayam and Felda Cemomoi). The selection of study respondents was based on married second generation had to have (and live with) at least one child between the ages of 7 and 12. Negeri Sembilan and Pahang are purposively selected as the location of the study based on the following considerations: (1) the availability of second generation Felda families that would facilitate the selection of respondents based on the discussion with Felda's Director of Community Development in Kuala Lumpur (2) the availability of study resources (finance, manpower), and (3) the accessibility of the respondents. Respondents that fit the criteria of the study were selected using simple random sampling from a sampling frame. The age of the respondents involved in this study range between 24 to 66 years old with an average of 36.6 years. Most of the respondents were male (51.5%),

had completed an average of 10.2 years education and had duration of marriage between 7 to 27 years. The average monthly household incomes of the respondents were RM932.40.

The average number of children was 3.7. There were slightly more males (58%) than females of the focal child.

Measures

Australian Inventory of Family Strengths (AIFS)

The original AIFS instrument contained 85 items (Geggie *et al.*, 2000). The scale items preceded by the phrase "In our family…". Respondents were asked to rate the items on 6-point scales that ranged from definitely agree to definitely disagree. In this study only 79 items were used. Six items were deleted from the original scale due to what the researcher and the faculty members of Department of Human Development and Family Studies, Universiti Putra Malaysia thought were issues of contextual and cultural relevance. The six items that were deleted are : 1) We like to hug each other, 2) We allow each other to be ourselves, 3) We wait for each other without complaining, 4) We feel connected with nature and the world around us, 5) We often says, "She'll be alright, mate", and 6) We give each other enough time to complete necessary task. This study also made some selected wording edits on three items to make it more appropriate for the sample study. Item 7 on the original AIFS was reworded from 'We feel a strong connection with our land' to 'We feel a strong connection with our

land development'. Item 9 on the original AIFS was changed from 'We enjoy hearing our grandparents stories about the past' to 'We enjoy hearing past family experience'. The new statement of the item 9 is more universal for the sample study because some of the respondents might not have grandparents any more due to death. Item 80 on the original AIFS scale was reworded from "Our personal religious and moral beliefs are compatible with each other" to "Our personal religious practice is strong". This item was reworded based on the fact that religious and moral beliefs among Malay families tend to highly homogeneous but in terms of religious practice may differ for family members.

Social Competence Scale (SCS).

The 12-item SCS (Corrigan, 2002) was used to measure children's social competence. The SCS assesses a child's prosocial and emotional skills. Each item on the scale states a behavior that a child may display in a social setting. Responses are coded on a five-point Likert scale ranging from 0 (Not at all) to 4 (Very Well). A higher scale showed a higher perception of child's social competence. Dennis, Brotman, Huang and Gouley (2007) report that the SCS had a good internal consistency (alpha coefficient = 0.87) and test-retest reliability showed correlations of .52 and .69. The concurrent and construct validity of the scale also well established (Dennis *et al.*, 2007).

Rosenberg Self-Esteem Scale (RSES).

he 10-item RSES (Rosenberg, 1965) is one of the most widely used scales for measuring global self-esteem with responses ranged from 1 (strongly disagree) to 4 (strongly agree). The negative items were reversed scored in order to obtained a higher scale indicated a higher level of self-esteem. The respondents were asked how they perceive their children's self-esteem. The coefficient alpha values were 0.79 and above for the English version (Mayhew & Lempers, 1998; Thomas & Gadbois, 2007), and 0.63 for the Malay version (Anjli Panalal, 2004). The concurrent, predictive and construct validity of the scale also was well established (Fischer & Corcoran, 1994; Lightsey, Burke, Ervin, Henderson, & Yee, 2006).

Procedures

Each respondent was interviewed face-to-face using the adapted questionnaire at their homes. This method permits the collection of the most extensive data on each person questioned (Tan, 2004; Brenner, Brown, & Canter, 1985). Prior to the interview, a briefing on the objectives of the study was given. The willingness of the respondents to participate in the study were asked. After the respondents agreed to participate in the study the interviews were proceed by using survey questionnaire. On completion of the questionnaire, the respondents were given a token in appreciation of their participation in the survey.

RESULTS

Exploratory Factor Analysis of the Malaysian Version of AIFS

A similar method used by Geggie *et al.* (2002) i.e., principle component analysis with a varimax rotation was performed on the data to explore the possible factor structure of the AIFS with Malaysian families. Criteria for identifying the factors were as follows: (1) each factors had to have an eigenvalues greater than one and noticeable change in the slopes and (2) items were retained when the loading was equal and greater than 0.30 (Lewis-Beck, 1994; Kline, 1994; Hair, Anderson, Tantham, & Black, 1998; Geggie *et al*., 2002).

The results show eighteen factors had eigen values greater than one, which accounted for 73.13% of the variance. However, based on the inspection of scree plot the solution with three factors was examined for interpretability. According to Zwick and Velicer (1982), on the whole, scree plots tend to be the most accurate for determining the number of factors to retain in factor analysis. Through a varimax rotation, four items that had factor loading less than .30 were eliminated. Therefore only 75 items were retained for further analysis.

As shown in Table 1, the three-factor solution accounted for 38.34% of the variance of the data seems to be more meaningful to Malaysian families. Upon scrutinizing each item that was loaded in a factor, the first factor was labeled as Shared Values, contained 27 items which was accounted for 15.28% of the variance and its

factor loading ranged from .69 to .42. Shared Values describing that family members have a sense of greater good or power in life, a spirituality or set of values and beliefs that gives strength, perspective, purpose, and guidelines for living, which gives the family a sense of belonging or togetherness (Stern, Yuen, & He, 2004; Geggie *et al*., 2000). Family members express their shared values and beliefs by practicing religious and cultural rituals, extending themselves to others, and volunteering and caring for their community.

The second factor of 27 items was labeled as Togetherness, explaining 11.68% of total item variance and the factor loading ranged from .69 to .33. Togetherness is the 'invisible glue' that bonds the family and gives the family members a sense of belonging (Geggie *et al*., 2000). Family members express togetherness in many ways, such as by rearranging schedules to spend time with family, keeping promises and being dependable, setting goals together, building family memories, as well as used togetherness as a coping strategy when faced with adversity and crisis.

The last factor was primarily loaded by 21 items was named as Respectful Communication which was accounted for 11.38% of the variance and the factor loading ranged from .69 to .34. Respectful communication represents that family members are open and honest with one another, and they are willing to listen to other member's view (Geggie *et al*., 2000). Families with communication patterns that convey support and caring often find

TABLE 1
Exploratory Factor Analysis Results for the Australian Inventory of Family Strengths – Autralian Sample

Item	Item Statement	Factor 1	Factor 2	Factor 3	Factor 4
24	We feel close to each other	.74	.32	.15	.11
21	We feel strongly connected to each other	.71	.22	.18	.13
10	We love one another	.69	.10	.17	-
8	We feel comfortable with each other	.68	.29	-	-
20	We like to show affection to each other	.66	.27	.17	.13
3	We like to have fun together	.66	-	.15	.29
23	We have lots of good times together	.65	.21	.26	.22
40	We enjoy the times we share together	.64	.34	.31	-
32	We like to hug each other	.62	.21	.18	.16
28	We often laugh with each other	.59	.30	.25	-
22	Hanging out together builds strong relationships	.59	.21	.17	.22
45	We have a strong sense of belonging	.59	.30	.37	-
50	We really care for each other	.58	.33	.31	-
4	We like to share our feelings with each other	.57	.33	-	.36
48	We share jokes together	.56	.21	.39	-
15	We like talking openly with each other	.55	.38	-	.27
73	We grow stronger because we love each other	.51	.29	.50	-
11	We are able to forgive each other	.51	.37	.12	-
57	We value each other	.49	.46	.28	-
14	We enjoy simple, inexpensive family activities	.46	.23	.19	.30
33	Our home feels like a sanctuary for all of us	.45	.21	.27	.16
62	There is a feeling of safety and security	.41	.35	.40	-
83	We enjoy having unplanned, spontaneous activities together	.36	.16	.30	.11
16	We like having a place we call 'home'	.32	-	.17	.12
37	We give each other a chance to explain ourselves	.36	.67	.11	.13
31	Everyone gets their say in making decisions	.15	.64	-	.20
55	We respect the roles each of us play in the family	.26	.63	.23	-
51	Putdowns are rare	.18	.62	-	-
53	We have reasonable expectations of each other	.24	.59	.17	.12
42	We wait for each other without complaining	.14	.59	-	.20
25	We wait for each other without complaining	.38	.59	-	.21
44	We can work together to solve very difficult family problems	.31	.57	.23	.11
85	We accept that each of us has different ways of doing things	.11	.56	.31	-
19	We like keeping our promises to each other	.33	.56	.10	.14
43	We enjoy our family discussions	.33	.54	.15	.22
38	Our communication is effective	.42	.54	-	.13
69	We like to support each other	.47	.53	.32	-

TABLE 1 (*continued*)

Item	Item Statement	Factor 1	Factor 2	Factor 3	Factor 4
34	Individuals are allowed to make their own choices	.13	.53	-	.14
17	We listen to each other	.47	.53	-	-
39	We allow each other to be ourselves	.37	.53	.18	-
36	We enjoy being thoughtful of each other	.46	.53	.23	.13
56	We are honest with each other	.37	.53	.17	-
82	We give each other enough time to complete necessary tasks	.13	.52	.33	-
18	We find solutions to our problems when we talk about them	.34	.52	-	.15
64	It is easy to share our values and ideas with each other	.48	.51	.28	.15
12	We enjoy helping each other	.42	.51	-	.17
65	There is a sense of peace	.35	.50	.37	.11
47	We find it easy to trust each other	.47	.50	.15	-
27	Talking through issues is important to us	.43	.50	-	.18
60	We find it easy to make plans and then carry them out	.15	.47	.25	.23
58	Sarcasm is not generally used	-	.47	.15	.18
75	We can make changes in our plans to meet changing circumstances	.22	.47	.45	-
13	It is easy to cue into each other's feelings	.40	.45	-	.27
68	We are able to face daily issues confidently	.24	.44	.31	.16
30	We have a hopeful attitude towards life	.20	.39	.29	.17
52	We like to do things for each other than make us feel good about ourselves	.32	.38	.32	-
79	We feel it is important to accept the things we cannot change	-	.38	.36	.13
29	We try to change the things we can	.32	.33	.18	.19
84	We have strong spiritual connections that enhance our well-being	.20	-	.62	.16
72	We always find something good comes from a crisis	-	.28	.61	.19
76	We benefit in many ways from our belief in a higher being	.13	-	.56	-
71	A crisis makes us stick closer together	.17	.35	.52	-
78	We look at challenges as opportunities for growth	-	.34	.51	.20
74	We believe love is a powerful force that keeps us together	.43	.14	.50	.12
49	A crisis helps make our relationships strong	.21	.26	.47	.19
77	We have the courage to take risks that will improve things for our family	.14	.28	.46	.12
35	Observing family rituals and customs is important to us	.15	-	.44	.22
67	We enjoy sharing our memories with each other	.29	.22	.40	.29
80	Our personal religious and moral beliefs are compatible with each other	.24	-	.36	.11

TABLE 1 (*continued*)

Item	Item Statement	Factor 1	Factor 2	Factor 3	Factor 4
70	Our friends are there when we need them	-	.23	.34	.20
2	We have a number of common interests	.23	.15	.34	.29
7	We feel a strong connection with the land	-	-	.14	.64
61	We feel strong connections with our ancestors	-	-	.35	.56
2	We have a number of common interests	.38	.17	-	.51
63	We feel connected with nature and the world around us	-	.10	.35	.49
9	We enjoy hearing our grandparents' stories about the past	-	.17	.11	.48
59	We enjoy looking at our family history	.15	.12	.33	.46
66	We often say, "She'll be right, Mate"	-	.15	.20	.38
6	Responsibilities are shared fairly	.14	.31	-	.36
1	We like to give each other a chance to do new things	.25	.28	-	.34

Note:- indicate loading less than .10

solutions to meet everyday challenges and prevent or recover from adversity, building their resiliency along the way (McCubin, McCubin, Thompson, Young Han, & Allen, 1997). By listening carefully and not criticizing each other, family members express respect, increasing their understanding of each other, and strengthen their relationships (Stern, Yuen, & He, 2004).

Internal Consistency

The coefficient alpha of the Malaysian version of the AIFS was 0.96. The internal consistency alpha values of the 3 factors were 0.94 for Factor 1, 0.90 for Factor 2, and 0.89 for Factor 3. Collectively, these statistics may be taken as evidence that the AIFS version for Malaysian families sample is an internally consistent instrument.

Inter-dimensional Relationships

The correlations between the scores on the three dimensions and the total score of AIFS are shown in Table 2. Results indicate that there were moderate a significant relationship between the different dimensions: Shared Values and Togetherness ($r = .57$, $p < .01$), Togetherness and Respectful Communication ($r = .55$, $p < .01$), and Shared Values and Respectful Communication ($r = .68$, $p < .01$). The findings also indicate that all three dimensions had correlation of at least 0.84 with the total score of AIFS. These set of findings demonstrates that the different dimensions of *family strength* are interrelated providing support for the contention that each dimension represents a unique set of *family strength*.

Predictive Validity

The results of the study found that the total score of AIFS was positively correlated with children's social competence ($r = .24$,

TABLE 2
Exploratory Factor Analysis Results for the Australian Inventory of Family Strengths – Malaysian Sample

Item	Item Statement In our family……	Shared Values	Togetherness	Respectful Communication
59	There is a feeling of safety and security.	.69	.17	-
76	All things considered we are strong family.	.68	-	.11
68	We grow stronger because we love each other.	.68	.15	.26
54	We value each other.	.68	.14	.27
35	We enjoy being thoughtful of each other.	.64	.12	.18
78	We have strong spiritual connections that enhance our well-being.	.64	-	-
69	We believe love is powerful force that keeps us together.	.63	-	.27
73	We look at challenges as opportunities for growth.	.63	.11	-
60	It is easy to share our values and ideas with each other.	.62	.29	-
75	Our religious practice is strong.	.62	-	.18
49	We like to do things for each other that makes us feel good about ourselves.	.60	.37	.12
47	We really care for each other.	.60	.22	.12
53	We are honest with each other.	.60	.14	.19
39	Life in our family is satisfying to us.	.57	.21	-
52	We respect the roles each of us play in the family.	.56	.26	.35
21	We feel strongly connected to each other.	.54	.12	.26
43	We are happy as a family.	.54	-	.30
24	We feel close to each other.	.53	.23	.35
48	Put downs are rare.	.51	.19	.23
63	We are able to face daily issues confidently.	.47	.37	-
61	There is a sense of peace.	.46	.22	.34
36	We give each other a chance to explain ourselves.	.46	.23	.39
32	Our homes feels like a sanctuary for all of us.	.44	-	.44
30	We have a hopeful attitude towards life.	.42	-	.41
71	We benefit in many ways from our belief in a higher being.	.42	-	.26
25	We respect each other's point of view.	.47	-	.36
46	A crisis helps make our relationships strong.	-	.69	.14
67	We always find something good comes from a crisis.	.24	.66	-.27
66	A crisis make us stick closer together.	.16	.64	-.17
5	A crisis has helped us to grow closer together.	-	.62	-
74	We feel it is important to accept the things we cannot change.	-.20	.60	-
50	We have reasonable expectations of each other.	.41	.57	-

TABLE 2 (*continued*)

Item	Item Statement In our family……	Shared Values	Togetherness	Respectful Communication
51	We have a high regard for each other.	-	.56	.28
44	We find it easy to trust each other.	.34	.55	.14
57	We find it easy to make plans and then to carry them out.	.14	.55	.10
19	We like keeping our promises to each other.	.14	.52	.35
62	We enjoy sharing our memories with each other.	-	.51	.33
23	We have lots of good times together.	-	.51	.44
58	We feel strong connections with our ancestors.	.19	.51	-
28	We often laugh with each other.	-	.50	.26
70	We can make changes in our plans to meet changing circumstances.	.43	.46	-.15
56	We enjoy looking at our family history.	.11	.46	.29
18	We find solutions to our problems when we talk about them.	.26	.45	.24
27	Talking through issues is important to us.	.38	.44	-.17
2	We have a number of commomn interests..	-	.43	.19
9	We enjoy hearing our past family experiences	.21	.40	.32
42	We have a strong sense of belonging.	-	.40	.38
72	We have the courage to take risks that will improve things for our family.	.32	.39	-
41	We can work together to solve very difficult family problems.	.29	.39	.32
65	Our friend are there when we need them.	-	.38	.19
34	Observing family rituals and customs is important to us.	.28	.35	-
22	Hanging out together builds strong relationships.	.26	.33	.33
55	Sarcasm is not generally used.	.17	.33	-
7	We feel a strong connection with this land.	-	-	.69
16	We like having a place we call `home'.	.19	-.13	.69
8	We feel comfortable with each other.	.23	.15	.67
6	Responsibilities are shared fairly.	.22	.14	.62
14	We enjoy simple, inexpensive family activities.	.18	.14	.59
12	We enjoy helping each other.	.30	-	.58
11	We are able to forgive each other.	.51	-	.53
15	We like talking openly with each other.	.14	.29	.50
20	We like to show affection to each other.	-.14	-	.48
45	We share jokes together.	.15	.39	.47
37	Our communication is effective.	.32	.14	.45
3	We like to have fun together.	.15	.22	.45
1	We like to give each other a chance to do new things.	.26	.11	.45

TABLE 2 (*continued*)

Item	Item Statement In our family……	Shared Values	Togetherness	Respectful Communication
26	We like to be kind to each other.	.40	-	.44
13	It is easy to cue into each other's feeling.	-	.41	.42
33	Individuals are allowed to make their own choices.	.13	.25	.42
31	Everyone gets their say in making decisions.	.33	-	.41
38	We enjoy the times we share together.	.31	.29	.41
64	We like to support each other.	.27	.36	.39
40	We enjoy our family discussions.	.36	.32	.39
4	We like to share our feelings with each other.	.16	.34	.34

Note: - indicates loading less than .10

TABLE 3
Inter-correlations Dimensions and Total Score of AIFS

Variables	Shared Values	Togetherness	Respectful Communication	Total Score of AIFS
1. Shared Values	1.00	.57**	.68**	.86**
2. Togetherness			.55**	.86**
3. Respectful Communication				.84**

**$p < .01$

$p < .01$) and self-esteem ($r = .24$, $p < .01$). The correlation pattern provides convincing evidence for the validity of the Malaysian version of the AIFS among Malaysian families.

DISCUSSION

Cross-cultural family scientists are particularly concerned with such issues as whether family strength dimension is universal or cultural-specific (Stinnet & DeFrain, 1985; DeFrain, 1999; Olson & DeFrain, 2000). Structure equivalence thus becomes one of the most important psychometric indicators to examine cross-culturally the adaptability of family strength construct and its measurement. The present study provided an evidence of the need for cross-cultural comparison of an imported construct and its measurement from the West to the East, by showing that the family strength construct may have somewhat different implications in Australian and Malaysian cultures. The exploratory factor analysis on the data failed to replicate the Australian 4-factor structure of family strength. Results in this study disclosed 3-factor solution which seems to be more meaningful to Malaysian families. The items loading in factor 1 (Shared Values), factor 2 (Togetherness and factor 3 (Respectful Communication) in this study do not come from any single factor of the original structure, rather they are quite mixture. The

differences in terms of number of factor structure and items loading occurred could be due to idiosyncrasies of some trivial characteristics of population (Gorsuch, 1997). The respondents who involved in this study comprised entirely of Malay, rural based, had 'moderate' education, lower income families that were not pre-screened as being self-identified 'strong families'. While in Australian, the sample group who completed the inventory generally come from white Australian, middle class, well educated, varied family structures (e.g., blended family, nuclear family, and sole parent family) and all respondents perceived their family unit as strong (Geggie *et al*., 2000)

Results of the current of study provide previously unavailable information regarding the reliability and validity of the AIFS in a sample of Malaysian families. In the current sample, the internal consistencies of three factors as well as the total score of AIFS were all acceptable (>.77) suggesting that participants responded consistently across items. Intercorrelations between each factor and the total score of the AIFS were also high (>.74) demonstrate that each dimension represents a unique set of family strengths. The correlations between the three factors were modest (.55 to .68), suggesting that, although related, they represent three distinct constructs of the AIFS. In addition, predictive validity was demonstrated by the positive correlation between AIFS with SCS and RSES.

The results of this study adds further support to the psychometric properties of the AIFS using sample of Malaysian families, including its factor structure, reliability and validity. The sound psychometric properties of the AIFS suggest that the scale could be used as a quick screening tool of family strengths in family practice especially in Malaysian families' context. Family members can be invited to complete the measure individually and this can enable family counsellors to review the differences in perception of family strengths among family members. The findings also have implications for parents, policy makers, service providers, practitioners and community leaders seeking to increase the level of family strengths. It is necessary for family members to understand that the competencies and the capabilities in the family influence the child's social competence and self-esteem. Therefore family professionals should communicate to families that the strengths exist in the family are an extremely important context for fostering social competence and self-esteem of children.

While the present study adds further evidence to the literature on the psychometric properties of the AIFS, there are several limitations. First, the demographic characteristics (e.g., rural area in Negeri Sembilan and Pahang) of this sample may limit the generalizability of these findings to families from other regions and communities. Second the study assessed only perceived family strength of parents, but not those of their children. Third since the assessment of family strength was based on self-report measures, there are might

be bias among 'insiders'. Therefore, the inclusion of observational data in real life setting based on the 'outsiders' is desirable.

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Psychometric Properties of the Malay Version of the Job Satisfaction Survey among Malaysian Military Personnel

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ABSTRACT

Job satisfaction is directly related to a number of positive outcomes at work and in certain other aspects of life. In the past few years, job satisfaction among the armed forces has received much attention, but the results of research have been contradictory, in view of the lack of psychometrically robust instrument. Due to its multidimensional orientation, Job Satisfaction Survey has been widely used to assess job satisfaction across different types of job. Although JSS is a promising measure, it has never been validated in the armed forces context. Thus, the aim of this study was to examine the psychometric properties of the Malay version of the Job Satisfaction Survey (Spector, 1965) using data from Malaysian military personnel . With this is mind, a group of male navy personnel from selected navy bases were recruited to be respondents. Through exploratory factor analyses (EFA), results yielded a five-subscale model with 28 items, namely: recognition, affection, fairness, expectation, and workload. In addition, the validity and stability of the five-dimensional structure of the scale were evident in this study using confirmatory factor analyses (CFA). In summary, this study confirmed the psychometric properties of the scale and can further be used to measure job satisfaction in the armed force setting.

Keywords: Confirmatory Factor Analysis, Exploratory Factor Analysis, Internal Consistency, Job Satisfaction Survey, Military Personnel

INTRODUCTION

Career development is one of the imperative tasks that all individuals need to go through when they step into adulthood (Landy & Conte, 2004). Throughout an adult's career

development, job satisfaction is an important indicator to determine the levels of career success and accomplishment (Sidek, 2002). Spector (2008) in his review, pointed that job satisfaction is a construct which was frequently studied across different types of jobs. As a result, job satisfaction is conceptualized in different ways by different researchers. For the last few decades, Locke (1976, p.1304) has defined job satisfaction as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences". In similar vein, Spector (1997) considered job satisfaction as the extent of individuals' 'likes' (satisfaction) and 'dislikes' (dissatisfaction) towards their job facets as well as general work atmosphere.

In reviewing the literature, a great deal of attention has been given to a variety of outcomes resulting from job satisfaction. Majority of the research has consistently found numerous positive outcomes as a result of positive appraisal toward overall and/ or facets of job satisfaction such as high organizational commitment (Rayton, 2006), less occupational stress (Fairbrother & Warn, 2003), internal work locus of control (Tillman *et al.*, 2010), high motivation, mental health and life satisfaction (Sanchez *et al.*, 2004). Additionally, previous research literature also found that job satisfaction correlates positively to overall individual well-being (Nassab, 2008), as well as employees retention (Gazioglu & Tansel, 2002).

In contrary, researchers have shown that low levels of job satisfaction can lead to a decrease in productive behavior, which in turn increased absenteeism and turnover intentions (Griffeth *et al.*, 2000; Dupré & Day, 2007; Podsakoff *et al.*, 2007; Spector, 1985). Clearly, job satisfaction has a meaningful impact on employees' well-being and organizational functioning. For that reason, most organizations today prefer to take account of employees' job satisfaction as a yardstick for them to manage, train, and retain valuable employees (Liu *et al.*, 2004). Some organizations even use it to gauge work morale and diagnose potential problems among workers.

In fact, studies have shown that positive and negative feelings about jobs can be traceable to many potential factors relating to jobs (Spector, 1997). A literature search in organization psychology postulated that factors such as pay, promotion, job conditions, relationship with supervisor and/ or colleagues, and employees' welfare are critical for evaluation leading to the response of job satisfaction (Spector, 1997, 2008). For some employees, a positive reinforcement including higher wages and promotion prospects can lead to a high level of job satisfaction. Some other factors encompassing work obligation, operating procedure, workload, and additional responsibilities that are associated with given roles within the job could influence employees' satisfaction levels. Not surprisingly, job satisfaction can be seen as a multidimensional concept, in which multiple items are needed to express the different aspects of job satisfaction in a questionnaire (Spector, 1997).

In this study, job satisfaction among military personnel is of particular interest as this population has rarely been researched. Thus, empirical research to date about job satisfaction of military personnel is still lacking. More importantly, there is no measure specifically designed for measuring military-related job satisfaction either in local or western contexts. Ironically, the study of military job satisfaction is essential because military workforce is seen as a severely challenging occupation. The milieu of military setting has been regarded as one that upholds discipline and obedience in the extreme. The nature of this type of job demands a great deal of time and energy of managing multiple responsibilities and duties, whereby all armed forces staff must unremittingly maintain physical and psychological fitness through rigid training in order to perform their job duties well (Sanchez *et al.*, 2004). Moreover, being military personnel can make one overly-sensitive because one feels pressured to perform all tasks correctly at all times. Sometimes, the introduction of new army policy, reassignment to a new department, and limited job scope may lead them to experience poor job satisfaction. Evidently, this explained why military personnel were more likely to have lower job satisfaction compared to their civilian counterparts (Alpass *et al.*, 1997; Sanchez *et al.*, 2004).

In contrast, other investigations found that the British military documented a neutral job satisfaction (Limbert, 2004). In relation to the local context, Liyana and Mansor (2009) in a research on 40 male navy personnel reported majority of respondents (62.5%) were moderately satisfied with their jobs. According to the research, only 7.5% of respondents experienced job dissatisfaction due to the issues of wages, fringe benefits, recognition, and policies, and recent statistics indicated that 17.5% (n= 120) of these navy personnel reported poor job satisfaction (Liyana & Mansor, 2010). Liyana and Mansor (2010) suggested that the results of previous empirical research have been inconsistent because of the administration of different instruments for measuring job satisfaction.

Evidently, there are numerous assessment tools that are available in Western countries to gather information about global job satisfaction and/ or specific job satisfaction dimensions such as Index of Job Satisfaction (Brayfield & Rothe, 1951), Quality of Employment Survey (Quinn & Staines, 1978), The Job Descriptive Index (Smith *et al.*, 1969), Job Diagnostic Survey (Hackman & Oldham, 1974), Job in General Scale (Ironson *et al.*, 1989), and Minnesota Satisfaction Questionnaire (Weiss *et al.*, 1967). Of the existing scales, the Job Satisfaction Survey (JSS) has in fact been described as the most extensively used inventory for measuring job satisfaction (Liu *et al.*, 2004). This scale focused primarily on identifying various facets of satisfaction that are either satisfying or dissatisfying for individuals in their workplace. Development of the JSS began in early 1985 and was first noted in the publication of Spector (1985). Although the scale was originally designed to be used in human service organizations, it

is also applicable to different organizational sectors from different cultures (Giri & Kumar, 2010; Liu *et al.*, 2004). Thus, the instrument has been translated into eleven different languages and validated with data collected in a few countries such as United States, United Kingdom, Taiwan, Turkish, and Pakistan. All these studies showed that it was remarkably reliable and valid in detecting satisfaction of employees in different job contexts. However, we have not been able to locate any study that has validated the scale in the armed forces setting. This prevents the practicality of the instrument to identify these personnel's job satisfaction.

Therefore, this study has the following goals: (a) to translate the original scale and adapt it to the armed forces population, (b) to examine the factor structure of the JSS in a sample of male Navy personnel by means of confirmatory factor analysis and exploratory factor analysis (c) to evaluate scale reliability. This study aimed to provide evidence on the validity of the JSS on identifying the nature of military personnel and thus help researchers to better understand the nature of job satisfaction among armed organizations.

Overview of the present study

The present study reports on two studies designed to adapt the Job Satisfaction Survey (JSS) which includes nine job-related satisfaction subscales in the context of military. The purpose of Study 1 was to adapt JSS to Malay and its validity was examined using participants enrolled at the Navy bases. Study 2 was to provide an initial psychometric assessment of the Malay version JSS.

Study 1

The purpose of this first study was to adapt JSS to Malay language so that it can be used in Malaysia especially on military personnel. In this study, we aimed to confirm its factor structure, analyze its construct validity, and internal consistency.

METHOD

Sample

A total of 800 navy personnel were targeted as respondents from six regions that subsumed South, Klang Valley, East, North, Sabah/ Sarawak, and Lumut areas that were approved by the Malaysian Ministry of Defense. Unlike other types of occupation, the composition of males in military workforce still remains dominant. Thus, only male Navy personnel were involved in filling in the questionnaires in the study. At the same time, the study sample was randomly selected from different branches (engineering, seaman and supply) and different job categorization (warrant officer, petty officer, and rate) according to definition of Royal Malaysian Navy (RMN).

Measurement

The questionnaire consisted of measures of job satisfaction and personal information. The 36-item JSS (Spector, 1985) was used to measure employee attitudes about the job and aspects of the job using nine

separate facets including pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, co-workers, nature of work, and communication. Each facet contains four items. Responses were rated on Six- points Likert-scale ranging from 1= "Strongly disagree" to 6= "Strongly agree" according to their feeling on various aspects of their job. Items are written in both directions, so about half need to be reverse-scored. The reversed items that include items 2, 4, 6, 8, 10, 12, 14, 16, 18, 19, 21, 23, 24, 26, 29, 31, 32, 34, and 36 were transformed to positive items before analysis. Next, we computed a total score from all items (after reverse-coding was done) with a continuum from low (dissatisfied) to high (satisfied) score. An example item is "*Saya berasa kerja yang saya lakukan tidak dihargai*". Personal information was also obtained through items on the participant's age, marital status, race, years of service, monthly income, and education level.

Procedure

The recruitment of sample was accorded with the standard protocols of Ministry of Defense as well as ethical procedures. After obtaining permission from relevant authorities, the participants were approached in a meeting room with the help of the officer in-charge, and then they were briefed about the purpose of the present research and were assured that data will purely be used for research purpose and their identities would not be revealed. Informed consent was taken from the respondents through consent forms after each respondent had

stated willingness to participate in the study. Participants received a survey packet containing informed consent sheet and questionnaire. Upon agreement, participants completed the Malay version of the JSS, along with a measure of demographic variables. All questionnaires were collected in anonymous and confidential manner right after they had completed them. All participants and relevant authorities were then verbally thanked for their time and cooperation.

Translation process

To facilitate answering and to accurately capture the construct of job satisfaction by respondents, the scale was translated to Malay language using Brislin's method (Willgerodt *et al.*, 2005). Malay language is Malaysia's official language and is widely used in the military workplace in the country. In translation process, five steps, that encompassed forward translation, assessment of forward translation, backward translation, assessment of backward translation, and local meeting with professionals, were performed. Experts of both languages (English and Malay) were invited to participate in the translation process. With the help of these professionals, the adapted version was constructed with correct grammar and content. Upon completion, the survey instrument was pre-tested on 30 military personnel in Lumut. The face validity was then conducted with all the respondents for items revision in terms of readability, ambiguity, precision and content. Every suggestion with respect

to wording and concept of the scale had been taken into account.

Data Analysis

In this study, Confirmatory Factor Analysis (CFA) was applied using Analysis of Moment Structures (AMOS) software to determine if the Bahasa Malaysia version of JSS possessed a goodness-of-fit while replicated on a sample of Malaysian navy personnel. To assess the degree of model fit, Bryne (2001) suggested the use of chi-square test statistics (χ^2), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). Insignificant (set at .05) chi-square test statistics signified model fit. The value of above .90 would indicate model fit for GFI, CFI, and TLI, while a value of less than .08 would signify reasonable model fit for RMSEA (Hu & Bentler, 1998). Exploratory Factor Analysis (EFA), on the other hand, was performed to examine the valid factor structure of the scale according to the data obtained from the Malaysian participants in order to test the construct validity. Reliability of this scale was determined using internal consistency by looking at Cronbach's alpha values.

RESULTS

Demographic Characteristics

In total, data was collected from 703 male Navy personnel who volunteered to participate in the study (age range = 20-50, M = 29.3 years, SD = 5.6). Years of service ranged from One to 30 years (M = 9.5, SD = 5.4). The gross income of participants ranged from RM650-RM6750 (M = 2224.7, SD = 860.1). Of the total sample, the ethnic composition of the sample was as follows: 95.2% Malay, 3.8% other ethnic groups, .7% Indian, and .3% Chinese. Regarding education level, most respondents were SPM/ SPM (V) (78.1%) holders, followed by Diploma (10.1%), Bachelor's degree (6.0%), STPM (5.4%), Masters degree (.4), and remaining .40% not reported. As for marital status, most respondents were married (70.7%), followed by single (28.6%), and divorced (.7%). Table 1 presents demographic characteristics of respondents.

Reliability Analysis

In the second section of our findings, Cronbach's alpha was calculated to assess the estimates of internal consistency of the scale and its nine sub-scales. Table 2 shows the internal consistency of the nine sub-scales and the overall scale. A value of .86 was obtained for overall scale that is above the satisfactory value of .70 (Nunnaly, 1978), indicating a high degree of internal consistency of the scale. Assessments of the internal consistency of nine separated sub-scales, however, indicated that a relatively lower Cronbach's alpha reading as compared with previous studies (Spector, 1997). As shown in Table 2, reliability of each dimension and total scale was then presented.

Confirmatory Factor Analysis

Thereafter, a confirmatory factor analysis was conducted to determine the goodness-

TABLE 1
Respondents' demographic characteristics (N= 703)

Variable		n (%)	M (SD)	Min-Max
Age			29.3 (5.6)	20-50
Years of service			9.5 (5.4)	1-30
Gross Income			2224.7 (860.1)	650-6750
Race	Malay	669 (95.2)		
	Chinese	2 (.3)		
	Indian	5 (.7)		
	Others	27 (3.8)		
Education Level	SPM/ SPM (V)	549 (78.1)		
	STPM	38 (5.4)		
	Diploma	71 (10.1)		
	Bachelor's degree	42 (6.0)		
	Master's degree	3 (.4)		
	Missing Data	3 (.4)		
Marital Status	Single	201 (28.6)		
	Married	496 (70.7)		
	Divorced	5 (.7)		
	Missing Data	1 (.1)		
Job Classification	Warrant officer	86 (12.2)		
	Petty officer	207 (29.4)		
	Rate	404 (57.5)		
	Missing Data	6 (.9)		
Branch	Engineering	198 (28.2)		
	Seaman	228 (32.4)		
	Supply	269 (38.3)		
	Missing Data	8 (1.1)		

Note: SPM/ SPM (V) = Completed high school;
STPM = Completed high school + 2 years of pre-university
n = frequency, M = Mean, SD = Standard Deviation, Min = Minimum, Max = Maximum

of-fit between priori model and the sample data. Data were analyzed by applying maximum likelihood to check how well the sample data fit with hypothesized nine-factor structure model consisting of pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, co-workers, nature of work, and communication. With regards to this, each of the four observed indicators was anticipated to load onto respective latent factors as suggested by Spector (1985). The goodness-of-fit results indicated nine-factor model was a poor fit to the data (χ^2 (558) = 2746.434, p< .001, χ^2/df = 4.922, CFI= .671, TLI= .628, RMSEA= .075 [.072, .078]) (see Table 3). Both CFI and TLI were less from the threshold of .90 (Hu & Bentler,

TABLE 2
Internal consistency of the instrument

Scale in JSS	Total items	Cronbach's alpha [a]	Cronbach's alpha [b]	Description
Pay	4	.59	.75	Pay and remuneration
Promotion	4	.50	.73	Promotion opportunities
Supervision	4	.69	.82	Immediate supervisor
Fringe benefits	4	.51	.73	Monetary and non-monetary fringe benefits
Contingent Rewards	4	.71	.76	Appreciation, recognition, and rewards for good work
Operating procedures	4	.22	.62	Operating policies and procedures
Co-workers	4	.35	.60	People you work with
Nature of work	4	.60	.78	Job tasks themselves
Communication	4	.58	.71	Communication within the organization
Total scale	36	.86	.91	Total of all facets

[a] Based on a sample of 703 (present study)
[b] Based on a sample of 2870 (Spector, 1997)

1998). Meanwhile, the large value of χ^2 with significant p-value implied mismatch between observed and expected metrics. The value of χ^2/df also showed greater general convention of 3.0 which indicated inadequate model fit (Hu & Bentler, 1998).

We next examined the factor loadings for JSS items and the results showed that the items were unevenly distributed, ranging from -.20 to .74. In addition, after associations with squared multiple correlations, each observed variable's yielded value ranged from 0.04 to .55 in explaining the variance. Obviously, some items were poorly loaded onto latent factors. As such, we concluded that the original nine-factor model with 36 items did not correspond to Malaysian military's job satisfaction dimension as it did not meet the acceptable standard of validity and reliability analysis. It is worthwhile to note that we tried to re-specify the model based

on modification indices and standardized residuals. Nevertheless, we still failed to obtain an acceptable model. Consequently, we decided to further explore the underlying factor structures of Malay JSS using exploratory factor analysis (Suhr, 2003). The overall fit of the nine-factor model is summarized in Table 3 and graphical representation is displayed in Fig.1.

Exploratory Factor Analysis

We further analyzed factorability of data by using exploratory factor analysis. A principal component factor (PCA) analysis was adopted on the 36 items of the JSS without specifying number of factors in the first run. Analysis of Kaiser-Meyer-Olkin measure of sampling adequacy and Barlett's test of sphericity were used to explore the correlation pattern and test the null hypothesis of identity matrix on the correlation between variables respectively

TABLE 3
Measure of goodness-of-fit for the nine-factor model of Malay version job satisfaction survey

CFA fit indices:			
χ^2	2746.434	CFI	.671
df	558	TLI	.628
χ^2/df (p)	4.922 (.000)	RMSEA	.075

Factor/ Item	Factor loadings	Squared multiple correlation
Pay		
1	.57	.33
10	.31	.09
19	.58	.34
28	.61	.38
Promotion		
2	.26	.07
11	.50	.25
20	.39	.15
33	.64	.41
Supervision		
3	.52	.27
12	.70	.48
21	.65	.42
30	.52	.26
Fringe benefits		
4	.33	.11
13	.42	.18
22	.65	.42
29	.44	.20
Contingent rewards		
5	.44	.20
14	.70	.50
23	.66	.44
32	.73	.53
Operating procedure		
6	.47	.21
15	-.20	.04
24	.66	.43
31	.37	.14
Co-worker		
7	.25	.06
16	.31	.09
25	.30	.09
34	.56	.31

TABLE 3 (*continued*)

| Factor/ Item	Factor loadings	Squared multiple correlation
Nature of work		
8	.25	.06
17	.63	.39
27	.74	.55
35	.70	.49
Communication		
9	.41	.17
18	.58	.33
26	.55	.30
36	.52	.27

Note: CFA= confirmatory factor analysis; χ^2= chi square; df= degree of freedom;
CFI= comparative-fit index; TLI= Tucker Lewis index; CFI= comparative fit index;
RMSEA= root mean square error of approximation.

(Hair *et al.*, 2010). Results yielded KMO statistics value of .90 which is above acceptable value and falls in the group of being superb (Hutcheson & Sofroniou, 1999). Also, the significant value of Barlett's test measure produced a chi-square of 12990 ($\chi^2(630) = 7144$; p< .001) that connoted the items shared common factors. In light of this, it was considered as suitable to factor analysis with all 36 items.

With PCA extraction method, components with Eigenvalue over 1.0 were retained (Hair *et al.*, 2010). The output successfully extracted nine components that accounted for 55.408% of total variance (Table 4). Nevertheless, the Eigenvalue's rule in this study was challenged as this scale consists of 36 variables, and communalities after extraction were less than .70. Based on Field (2005), Eigenvalue's rule is proper to apply when there are less than 30 variables and communalities are more than .70 after extraction. In regard to this, we then looked

at scree plot (Cattell, 1978). A diagnose Scree Plot (refer Fig.2) demonstrated the inflexion at first four or five factors solution before it begins to straighten out, suggesting it is able to generate four or five factors. Hence, the second time, we tried several different models (three, four, five, and six factor solutions) before deciding on the final model using varimax rotation or direct oblimin rotations.

Direct oblimin rotation supports that the final model was a five-factor solution because it provides the best interpretability. A total of eight items were removed from original measure on the basis of primary factor loading of at least .40 or cross-factor loading greater than .30 (Bryant, & Yarnold, 1995; Wang *et al.*, 2009). Specifically, the items *"Terdapat imbuhan yang sepatutnya kami terima tidak diberikan oleh organisasi ini"*, *"Kehendak birokrasi dalam organisasi jarang menghalang usaha saya untuk melakukan kerja dengan baik"*,
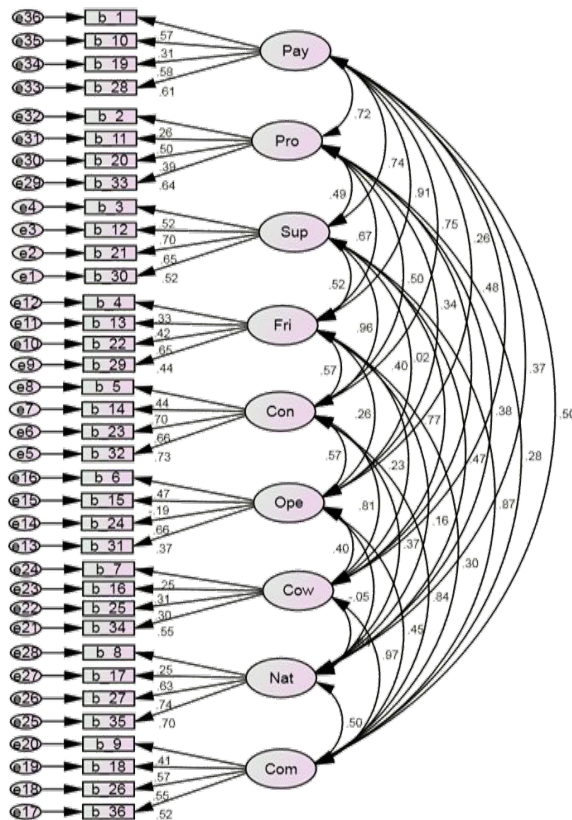
Note: Pro= promotion, Sup= supervision, Fri= fringe benefits, Con= contingent reward, Ope= operating procedure, Cow= Co-worker, Nat= nature of work, Com = communication

Item 1- Item 36 represent observed variables, e1-e36 represent error variances, double headed arrows depict correlations among factors, and single headed arrows from factors depict factor loadings.

Fig.1: Measurement model for original nine-factor model

"Saya suka bekerja dengan pihak atasan saya", *"Pihak atasan saya agak cekap dalam mengendalikan kerja mereka"*, *"Saya berpuas hati dengan peluang kenaikan pangkat saya"*, *"Perhubungan (interpersonal) dalam organisasi ini agak bagus"*, *"Peluang kenaikan pangkat di sini adalah sama seperti di pasukan keselamatan lain"*, and *"Imbuhan yang diterima adalah sepertimana yang ditawarkan oleh kebanyakan pasukan keselamatan lain"* were dropped from the scale.

After elimination, data showed that 11 items loaded on first factor, five items for second factor, five items for third factor, four items for fourth factor, and finally three items for fifth factor. Then, each factor was interpreted through assessment of item content. Items loading on first factor were 'assessing need for appreciation' and 'recognition in workplace'. Therefore we labeled this factor as 'recognition'. Items loading on second factor were relating to aspects of fondness to work, which was

TABLE 4
PCA extraction method on Malay version job satisfaction survey

Item/ Component	I	II	III	IV	V	VI	VII	VIII	VIIII
b_32 : Saya berasa usaha saya tidak dihargai seperti yang sepatutnya.	.713								
b_14 : Saya berasa kerja yang saya lakukan tidak dihargai.	.697								
b_12 : Pihak pengurusan atasan tidak berlaku adil terhadap saya.	.679								
b_23 : Kurang penghargaan kepada anggota di sini.	.653								
b_21 : Pihak pengurusan atasan kurang memberikan perhatian terhadap anggota bawahan mereka.	.637								
b_19 : Saya berasa kurang dihargai oleh organisasi berdasarkan skala gaji saya.	.609							-.331	
b_3 : Pihak atasan saya agak cekap dalam mengendalikan kerja mereka.	.534	.318		-.425					
b_30 : Saya suka bekerja dengan pihak atasan saya.	.534	.341							
b_8 : Kadangkala berasa kerja saya tidak bermakna.	.526								
b_34 : Terlalu perselisihan faham di tempat kerja saya.	.525								-.304
b_18 : Saya masih kurang faham mengenai matlamat organisasi.	.513								
b_5 : Saya mendapat penghargaan yang sewajarnya apabila melakukan kerja dengan baik.	.492	.338							
b_36 : Tugasan yang diamanahkan kepada saya tidak diterangkan dengan sempurna.	.482								
b_28 : Saya berpuas hati dengan kenaikan gaji.	.469	.347	.309						
b_26 : Saya sering tidak tahu mengenai perkembangan organisasi.	.462		-.392						
b_1 : Skim emolumen yang diberikan adalah setimpal dengan tanggungjawab/ peranan (pengalaman/kepakaran, kelayakan akademik, tempoh perkhidmatan) sebagai seorang tentera.	.460	.363							
b_9 : Perhubungan (interpersonal) dalam organisasi ini agak bagus.	.439	.349		-.331					
b_29 : Terdapat imbuhan yang sepatutnya kami terima tidak diberikan oleh organisasi ini.	.437							-.333	
b_35 : Saya berpuas hati dengan kerja saya.	.417	.364	-.397				.334		

TABLE 4 (*continued*)

Item/ Component	I	II	III	IV	V	VI	VII	VIII	VIIII
b_4 : Saya tidak berpuas hati dengan faedah/ kemudahan disedia.	.386								
b_7 : Saya suka bekerja dengan orang yang bekerja bersama saya.		.429	-.318						
b_24 : Terlalu banyak kerja yang perlu dilakukan di tempat kerja.		-.386			.358			.349	.374
b_17 : Saya suka kepakaran saya.		.381	-.375	.360					
b_11 : Peluang kenaikan pangkat diberi kepada mereka yang melakukan kerja dengan baik.	.333	.352					-.321		
b_13 : Imbuhan yang diterima adalah sepertimana yang ditawarkan oleh kebanyakan pasukan keselamatan lain. organisasi lain		.368	.512						
b_22 : Pakej imbuhan yang diterima adalah adil.	.402	.318	.506						
b_27 : Saya berasa bangga dengan kerja yang saya lakukan.	.345	.455	-.481						
b_25 : Saya selesa dengan rakan sepasukan saya.		.382	-.403						
b_2 : Terdapat ruang dan peluang yang terhad untuk peningkatan kerjaya.	.320			.451					
b_31 : Saya mempunyai terlalu banyak kerja-kerja dokumentasi.		-.354			.584				
b_15 : Kehendak birokrasi dalam organisasi jarang menghalang usaha saya untuk melakukan kerja dengan baik.						.612			
b_16 : Saya perlu bekerja lebih keras kerana ketidakcekapan rakan.		-.356				-.373			
b_33 : Saya berpuas hati dengan peluang kenaikan pangkat saya.	.382	.311		.352			-.417		
b_6 : Saya sukar untuk melakukan kerja dengan baik kerana terlalu banyak peraturan dan prosedur organisasi.	.389	-.359					.393	.308	
b_20 : Peluang kenaikan pangkat di sini adalah sama seperti di pasukan keselamatan lain.									-.542
b_10 : Perbezaan gaji adalah terlalu ketara dengan organisasi kerajaan yang lain.	.316	-.337	.309						-.344

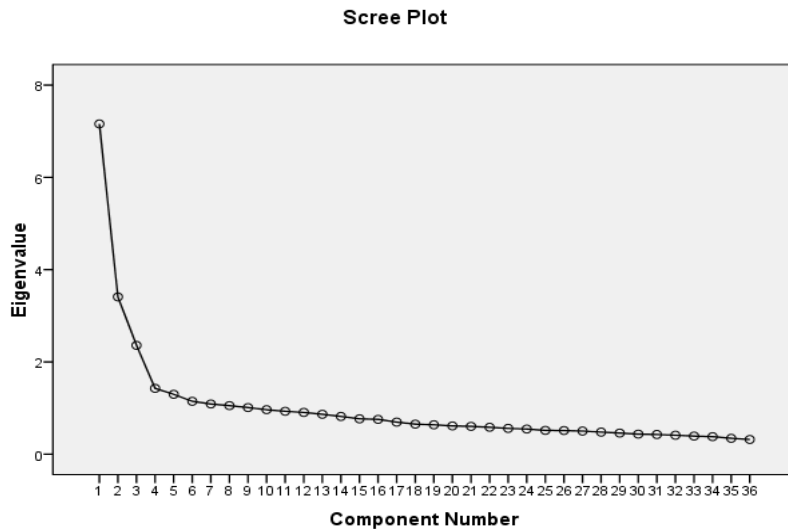Note: only factor loadings greater than .30 are shown.

Scree Plot

Fig.2: Screen Plot for Malay Version Job Satisfaction Survey

labeled as 'affection'. In addition, the third factor was labeled 'fairness' as the items loading were assessing even-handedness and competent ability within workforce. The labeling of fourth factor ('expectation') is attributed to the content of anticipation for pay, promotion, and belief. The final factor contained items that reflected the amount of work at the workplace, was labeled as 'workload'. Cumulatively, the EFA was drawn from 28 items to form a five-factor model comprising recognition, attachment, fairness, expectation, and workload which accounted for 42.91% of the share variance in the administrative group. The final solution is presented in Table 5.

Study 2

In the second study, we further examined the validity of the five-factor model of JSS scores. Participants were recruited from the Lumut naval base which is the biggest naval base in Malaysia.

METHOD

Three hundred and twenty-nine male navy personnel aged from 20 to 50 (M = 29.9 years, SD = 6.1), completed the 28-item JSS for study 2. Majority of the respondents were Malay (93.8%), married (71.3%), and SPM/ SPM (V) (74.5%) holders. In terms of years of service, respondents ranged from 1 to 30 years (M = 10.3, SD = 5.8). The gross income of participants ranged from RM1000-RM6300 (M = 2354.8, SD = 901.9).

RESULTS

Reliability Analyses

As seen in Table 6, the total coefficient value for final version was .86, maintaining the high internal consistency. The reliability estimates of the five sub-scales also reported values which ranged from .50 to .86. The values did not increase if deletion of any item was performed.

TABLE 5
Direct oblimin rotation on Malay version job satisfaction survey

Item/ Component	I	II	III	IV	V
b_21 : Pihak pengurusan atasan kurang memberikan perhatian terhadap anggota bawahan mereka.	.680				
b_18 : Saya masih kurang faham mengenai matlamat organisasi.	.667				
b_12 : Pihak pengurusan atasan tidak berlaku adil terhadap saya.	.621				
b_14 : Saya berasa kerja yang saya lakukan tidak dihargai.	.610				
b_26 : Saya sering tidak tahu mengenai perkembangan organisasi.	.586				
b_19 : Saya berasa kurang dihargai oleh organisasi berdasarkan skala gaji saya.	.581				
b_32 : Saya berasa usaha saya tidak dihargai seperti yang sepatutnya.	.559				
b_23 : Kurang penghargaan kepada anggota di sini.	.550				
b_3 : Pihak atasan saya agak cekap dalam mengendalikan kerja mereka.	.487		.421	-.337	
b_34 : Terlalu perselisihan faham di tempat kerja saya.	.481				
b_36 : Tugasan yang diamanahkan kepada saya tidak diterangkan dengan sempurna.	.480				
b_8 : Kadangkala berasa kerja saya tidak bermakna.	.467				
b_30 : Saya suka bekerja dengan pihak atasan saya.	.392				
b_9 : Perhubungan (interpersonal) dalam organisasi ini agak bagus.	.366				
b_27 : Saya berasa bangga dengan kerja yang saya lakukan.		.745			
b_17 : Saya suka kepakaran saya.		.742			
b_35 : Saya berpuas hati dengan kerja saya.		.667			
b_25 : Saya selesa dengan rakan sepasukan saya.		.614			
b_7 : Saya suka bekerja dengan orang yang bekerja bersama saya.		.420			
b_22 : Pakej imbuhan yang diterima adalah adil.			.707		
b_13 : Imbuhan yang diterima adalah sepertimana yang ditawarkan oleh kebanyakan pasukan keselamatan lain.		.402	.672		
b_1: Skim emolumen yang diberikan adalah setimpal dengan tanggungjawab/peranan (pengalaman/kepakaran, kelayakan akademik, tempoh perkhidmatan) sebagai seorang tentera.			.589		
b_28 : Saya berpuas hati dengan kenaikan gaji.			.578		
b_5 : Saya mendapat penghargaan yang sewajarnya apabila melakukan kerja dengan baik.			.564		
b_11 : Peluang kenaikan pangkat diberi kepada mereka yang melakukan kerja dengan baik.			.535		
b_20 : Peluang kenaikan pangkat di sini adalah sama seperti di pasukan keselamatan lain.			.389		
b_29 : Terdapat imbuhan yang sepatutnya kami terima tidak diberikan oleh organisasi ini.			.309		

TABLE 5 (*continued*)

Item/ Component	I	II	III	IV	V
b_2 : Terdapat ruang dan peluang yang terhad untuk peningkatan kerjaya.				.646	
b_4 : Saya tidak berpuas hati dengan faedah/ kemudahan disedia.				.523	
b_33 : Saya berpuas hati dengan peluang kenaikan pangkat saya.			.406	.433	
b_10 : Perbezaan gaji adalah terlalu ketara dengan organisasi kerajaan yang lain.				.431	
b_6 : Saya sukar untuk melakukan kerja dengan baik kerana terlalu banyak peraturan dan prosedur organisasi.				.423	
b_31 : Saya mempunyai terlalu banyak kerja-kerja dokumentasi.					.802
b_24 : Terlalu banyak kerja yang perlu dilakukan di tempat kerja.					.597
b_16 : Saya perlu bekerja lebih keras kerana ketidakcekapan rakan.					.501
b_15 : Kehendak birokrasi dalam organisasi jarang menghalang usaha saya untuk melakukan kerja dengan baik.					
Eigenvalue	5.887	3.247	4.090	2.471	2.375
Percentage of variance explained	19.438	9.786	6.135	3.991	3.56
Cumulative percentage of variance explained	19.438	29.224	35.359	39.35	42.910

Note: I - Recognition, II- Affection, III- Fairness, IV- Expectation, and V- Workload

TABLE 6
Reliability analyses for the five-factor model (N=321)

Factor	No of item	α
Recognition	11	.86
Affection	5	.75
Fairness	5	.73
Expectation	4	.58
Workload	3	.50
Total	28	.86

α = composite reliability

Confirmatory factor Analyses

The five-factor model with 28 items (recognition was represented by items 21, 18, 12, 14, 26, 19, 32, 23, 34, 36, and 8; affection was represented by items 27, 17, 35, 25, and 7; fairness was represented by items 22, 1, 28, 5, and 11; expectation was represented by items 2, 4, 10, and 6; and workload was represented by items 31, 24, and 16) was analyzed. Fit indices for the five-factor model exhibited significantly better fit than nine-factor model (χ^2 (336) = 632.852, p< .001, χ^2/df = 1.861, CFI= .877, TLI= .864, RMSEA= .52 [CI= .046, .058]). The modification indices indicated re-specification might still be possible
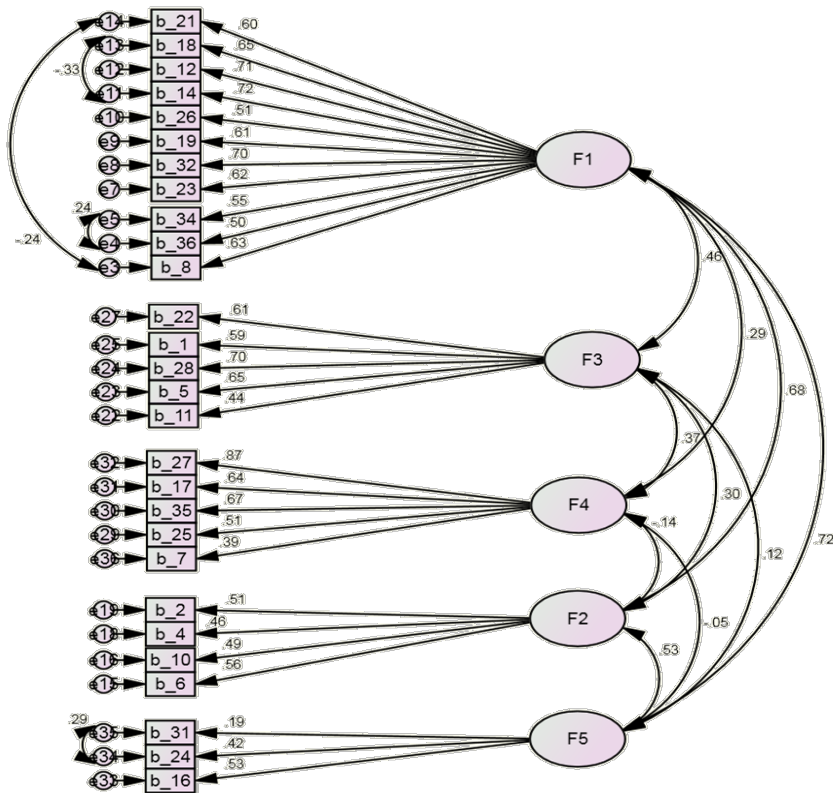
Note: F1= Recognition, F2= Affection, F3= Fairness, F4= Expectation, F5= Workload.

Rectangles represent observed variables, Circles represent error variances, double headed arrows depict correlations among factors, and single headed arrows from factors depict factor loadings.

Fig.3: Measurement model for five-factor model

by allowing some residual error terms that co-varied each other. The goodness of fit of revised model showed adequate and much better fit (χ^2 (336) = 554.184, p< .001, χ^2/df = 1.649, CFI= .909, TLI= .897, RMSEA= .45 [CI= .038, .052]) (see Fig.3). CFI was successfully met while TLI marginally reached the threshold of .90 (Hu & Bentler, 1998). Although the result yielded significant p-value, this could be attributed to the large sample size. The value of χ^2/df was also less than value of 3.0

which indicated adequate model fit (Hu & Bentler, 1998).

DISCUSSION

Up to now, available documented studies concerning issue of military job satisfaction in Malaysian context is still scarce (Liyana & Mansor, 2009; 2010). Thus, the current study was undertaken on account of researchers' interest to provide evidence of initial reliability and validity of Job Satisfaction Survey on assessing job satisfaction among

Malaysian military members. Initially, the study used the comprehensive Job Satisfaction Survey (Spector, 1985) which was translated to Malay language to determine its psychometric appropriateness in evaluating military job satisfaction in Malaysia. In our empirical analysis, the original nine-factor solutions on the basis of facets: pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, co-workers, nature of work, and communication (Spector, 1985) were tested. Statistically, the results of the confirmatory factor analysis for nine-factor solution showed a poor model fit. Additionally, results regarding the internal consistency for the model demonstrated poor to moderate levels as Cronbach alpha values were of .22 to .71. In the light of our findings, we contended that military jobs and workplace are significantly different from that of other types of organizations due to its work nature in hardship and challenging environments (Sanchez *et al.*, 2004). Not surprisingly, the findings indicated that the nine-factor first-order model is not suitable to assess Malaysian military personnel job satisfaction. Seemingly most previous studies administered this instrument in English (Spector, 1985; 1997, 2008). However the current study which made use of the same instrument in Malay language yielded conflicting findings.

Evidently, the poor statistical fit of previous theoretical model illustrated that the testing of underlying factor structure was required. Therefore, items were reexamined using the Principal Components factor Analysis and followed by direct oblimin rotation to elucidate dimensionality for military job satisfaction. Based on factor loadings, the best model in the present study was a five-factor solution for assessing military job satisfaction. Inspection of the Scree Plot also revealed a five-factor solution to be appropriate for military personnel, particularly Malaysian Navy. As a result, a five-subscale model with 28 items was produced. The subscales were renamed as recognition, affection, fairness, expectation, and workload. All the sub-scales accumulative denoted variation was at 42.91%.

In our solution, the first factor, recognition is characterized by the perception of being acknowledged by others on effort devoted by the personnel. The sample item includes *"Pihak pengurusan atasan kurang memberikan perhatian terhadap anggota bawahan mereka"*. Recalling Sanchez and his colleagues' (2004) study, both physical and mental training among armed forces staff are not easy to endure, thus they really need to retain a certain degree of adulation and recognition. Like any normal human being, they too, hope for appreciation by others for the efforts they make and the pride they hold in their jobs. Consequently, appreciation given to those who perform well in their jobs could lead to enhanced self-confidence in military duties (Liyana & Mansor, 2009). Hence, recognition should be placed as top priority to retain the soldiers to continually serve the nation. The second factor, affection highlights the degree to which an individual feels loved,

meaningful, and enjoyable with the nature of the job itself. Previous research suggests that higher levels of supportive work environment are associated with greater levels of happiness and satisfaction (Spector, 1997). As aforementioned, the military places strong emphasis on teamwork and commitment. Employees who have strong desires towards work are effectively connected to organization and display willing to perform job responsibilities. An example of this item is *"Saya berasa bangga dengan kerja yang saya lakukan".*

The third factor, fairness is characterized as the emotional reactions to jobs regarding the levels of justice in workforce. Hence, the item that related to this situation was for example, *"Pakej imbuhan yang diterima adalah adil".* Logically, employees want to experience that they receive reasonable treatment in the workplace. The same condition applied to military personnel who have a right to focus on adequate justifications and concern whether they were being fairly treated by the organization such as on matters pertaining to pay, promotion opportunity, and incentives. Understandably, military organizations are big institutions which can encompass millions of employees. Without question, military personnel highly emphasized the importance of fairness and equity to ensure their levels of job satisfaction (Liyana & Mansor, 2009).When organizations make decisions about staffs' welfare and remuneration, it is tremendously vital that the decisions taken are seen to be fair and equally commensurate with each staff's expertise and skills.

Item *"Terdapat ruang dan peluang yang terhad untuk peningkatan kerjaya"* was included in the fourth factor, expectation because it assesses belief of personal expectations from the job in gaining extrinsic objects. The fifth factor, workload subsumes item "*Saya mempunyai terlalu banyak kerja-kerja dokumentasi"* that assesses amount and quantity of work or tasks to be completed. Usually, heavy workload could be a part of job satisfaction determinants as some military personnel reported that too much paperwork jeopardized their levels of satisfaction (Liyana & Mansor, 2009). Nevertheless, high workload tends to occur among military personnel as personnel need to handle a great amount of military-related tasks arising from factors such as to be on call 24 hours, the need for outstation work and frequent changing of department or squads, besides undergoing heavy army training. Hence, it reflected some job facets that had significant roles in explaining job satisfaction among military personnel.

We then tested the revised scale on a new sample. Using data from the new collected sample, the statistical analysis was able to produce a model which was a good fit to the data. The confirmatory factor analysis revealed that the final model with 28 items had a good fit as all the goodness-of-fit indices support the model fit (Byrne, 2001). The internal consistency analysis also suggested that the final revised model of the Malay version JSS exhibited a reliable measure that could be used in the future to identify level of job satisfaction and facets associated to it among military personnel. In short, analyses of internal consistency and

validity on our proposed factors indicated that the five factors JSS is more reliable to be used by researchers in determining job satisfaction of military personnel in Malaysia.

IMPLICATION AND FUTURE DIRECTION

As its objectives, this research has translated and validated Malay JSS. Using a large sample of subjects whose service in armed forces organizations, this paper provides preliminary reliability and validity evidence for the Malay JSS that captures job satisfaction among military personnel. As discussed earlier, armed forces are specific service areas as compared to other types of occupation. These distinctions result in a more parsimonious five-factor model was produced that more relevant and applicable to armed forces personnel. With a greater understanding of the construct of job satisfaction in this understudied population, this research assists managerial body, for instance RMN to gauge the extent to which personnel satisfy towards their job; and the information may be of assistance in improving personnel's job satisfaction. Furthermore, current findings are potentially useful to further the research on job satisfaction. Through our findings, this scale appears to have certain advantages for researchers who wish to collect data related to job satisfaction among armed forces personnel.

However, some limitations of present study were noted. First, this paper was pioneered to revise original nine-factor model of JSS to five-factor model while assessing military job satisfaction. Concerning this, it is recommended that multinational or intercultural validation studies should be undertaken to assess its practicality and investigate measurement properties of the scale as well. Second, this scale is specified to military personnel, thus further studies need to be cautioned of this fact so as not to generalize the current findings to different job contexts. We strongly encourage future efforts to consider longitudinal design to identify ongoing assessment job satisfaction of navy personnel at different times. We also encourage more studies that can expand upon the present findings. In summary, this study was beneficial as it helped identify varying degrees to which military personnel are experiencing job satisfaction or otherwise.

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Improving Engineering Performance through Leadership, CE and Teamwork in a Malaysian Semiconductor Firm

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ABSTRACT

The rapid change in technology among organizations motivates the need for researchers and practitioners to form new practices by understanding, re-examining and integrating the key determinants of obsolete practices. In the same way, this study aims to compositely examine the role of leadership, concurrent engineering (CE) and teamwork in a Malaysian semiconductor manufacturing firm. A total of 226 survey responses were collected back from the 2100 surveys distributed and analysed using correlation and multiple linear regression analyses. The results showed that the relationship between leadership-CE-teamwork and engineering performance was stronger than that of the other individually-tested relationships. Though best practices in leadership are important for achieving a team's goal, a more flexible and cooperative leadership may be formed with the integration of CE, teamwork and leadership. Top management should consider exploring more opportunities in all these components for improved engineering performance and synergy among engineering teams. Tactical strategies based on various leadership styles, team member competencies and CE approaches should also be formulated to strengthen the flexibility of current leadership styles. The results can be potentially used as general guidelines for the engineering management practice and research in engineering firms.

INTRODUCTION

There are many different definitions of leadership. However, the three major components of leadership applied in firms

are perhaps team leadership, influential leadership and goal-based leadership. Leadership is the process in which an individual influences team members towards the attainment of team or organizational goals (Sethi, Smith & Park, 2001).

The success of a team can depend on the leadership style that suits the team. Different teams may consist of members with different capabilities working on various tasks under multiple circumstances. From a theoretical viewpoint, Fiedler's contingency model shows that in high and low favourable situations, task-oriented leadership is linked with high performance and team success (Chong, 2006; Sethi, 2000). Besides that, in moderately favourable situations, relationship-oriented leadership styles are most effective for teams to succeed (Chong, 2006; Sethi, 2000; Valle & Avella, 2003).

Despite the aforementioned evidence on the capabilities of various leadership styles, many engineering firms today fall short in the management and leadership of their engineering project resources (Cleland, 1995; Cleland & Ireland, 2007; Qureshi, Warraich & Hijazi, 2009). More often than not, engineering firms disregard the importance in evaluating engineering performance and merely focus on meeting the cost and time requirements of manufacturing projects (Qureshi *et al.*, 2009).

The preceding assertion points out that there is an evident and dire need for firms to continuously evaluate engineering performance and the factors that are linked to it. Literature has shown that the components

selected for study here are important basis for organizational and technological success (Abrunhosa & Sa, 2008; Chang, 2009; Ebert & Man, 2008; Valle & Avella, 2003; Valle & Vazquez-Bustelo, 2009). Thus, the aim of this study is to determine the effects of leadership, concurrent engineering (CE) and teamwork on engineering performance in a Malaysian engineering firm.

LEADERSHIP

Leadership is the behaviour associated with the activity of leading and represents one of the great problem areas both for the student of management and for the practising manager (Kanji, 2008). It is not only a key enabler for research, but also a practical skill used by managers to adapt in various functions (Lo & Osman, 2008).

In management theory, there generally a few classifications of leadership theories which include theories on classic leadership (autocratic, democratic and laissez-faire) and theories on leadership for change (transformational leadership) (Lakshman, 2006). The responsibility of a leader can be segregated in various ways throughout a firm (Galbraith, 1973).

Leadership often appears to be the key component for a firm's success as their roles influence, motivate and direct employees to achieve company performance. According to Obholzer (1997), a good leadership practice in a firm allows work to be completed effectively and efficiently through positive teamwork.

In addition, capable leaders can generate a strong shared mission and vision for a

company that relates to its workers overall effectiveness (Ancona & Caldwell, 1992; Boyle, Kumar and Kumar, 2006; Mohrman, Cohen and Mohrman, 1995). Also, leaders who are practicing various traits, principles, attitudes and behaviours may give rise to successful long-term organizational performance (Lakshman, 2006).

In addition, Kolb (1995) believes that leadership is significantly related with organizational performance and also plays a main role in enhancing engineering performance. However, serious commitment on the part of engineering leaders to quality can be sometimes inconsistent, weak or in worst cases, missing. Complaints about engineering management's lack of support and refusal to change appear to be increasingly common among employees (Kaynak, 2003). The aforementioned predicaments make it difficult to nurture the hidden talents or potentials of younger and aspiring engineering leaders. Therefore, the first hypothesis is proposed as:

> H1: Leadership correlates with engineering performance in a Malaysian manufacturing firm

TEAMWORK

Teamwork is defined as the collaboration of co-located individuals from various knowledge and skill areas grouped in one or more problem-solving projects (Jassawalla & Sashittal, 2000). Effective teamwork requires team members to possess not only people management skills, but also skills such as the ability to manage pressure,

emotions, red tapes and heated debates (Wang, Chou & Jiang, 2005).

Greaves (2000) suggests that teamwork requires an appropriate organizational environment and full cooperation from both the leader and members to meet or exceed team objectives. One of the key determinants in teamwork is the power to synergize, where if applied appropriately, may result in positive outcomes that exceeds the input to the teamwork (Keller, 2001; Larson & Gobeli, 1989).

Team leadership which is critical in all team environments appears to be highly collaborative and peer-like (Drath, McCauley, Palus, Velsor, O'Connor & McGuire, 2008; Wang *et al.*, 2005). It appears that in engineering companies, the project managers delegate tasks to team leaders who will then motivate and coach the performance of their respective members. This action allows leaders to build strong trusts among employees and promotes their impetus to perform (Shea & Howell, 1999).

Teamwork, however, does not always bring forth positive effects to a firm. According to Nurmi *et al.* (1989), although teamwork sounds simple, but it requires high acknowledgment among peers, active leadership, active listening, acceptance of different views and effective communication. Lack of assertiveness and action from team players and conflicting performance may bring about negative outcomes as far as teamwork performance is concerned (Jassawalla & Sashittal, 2000). Hence, the second hypothesis is proposed as:

H2: Teamwork correlates with engineering performance in a Malaysian manufacturing firm

H3: CE correlates with engineering performance in a Malaysian manufacturing firm

CONCURRENT ENGINEERING (CE)

CE is a systematic approach to the integrated, simultaneous design of products and their related processes, including manufacture and support (Jassawalla & Sashittal, 2000). It also refers to interdisciplinary collaborations and corresponding efforts to achieve universal targets in NPD, production, marketing and sales (Kusar, Duhovnik, Grum & Starbek, 2004).

A major initiative in putting CE into practice is the effective concurrent teams, which implement development through organizational and information management processes (Abdalla, 1999). Concurrent teams are teams that deal with hi-tech processes and sustain teamwork throughout development phases (Ma, Chen & Thimm, 2008).

On the other hand, Chen and Li (2002) argue that problems arising from CE approaches are very complex due to the uncertainties from design to process stages. This finding shows that it is sometimes difficult to adopt CE in processes that have previously been treated separately.

Zheng, Wang and Yan (2005) also stress that if downstream design workflow launches prematurely, it is doubtful to obtain absolute design outcomes from the upstream design workflow. Consequently, they hypothesize that there is a likelihood of higher design mistake rates and more design rework. Thus, the third hypothesis is proposed as:

ENGINEERING PERFORMANCE

Engineering Performance is the overall achievement of preset targets of engineering projects/tasks. The exceptionality that impinges on engineering performance is of a simple form, whereby the epigrammatic link between engineering performance and some characteristics that influences it is often demonstrated in a research (Cho, Hong & Hyun, 2009). Engineering performance includes the monitoring and management of components such as time, cost, superiority, creativity and product development performance.

Time. Once a decision on a project is made, the execution time should be kept as brief as it could, as time is an aspect of success in engineering performance that provides additional timelines for the dealings leading to the decision (Thiry, 2002).

Cost. Projects that are delayed will cost more money and dissatisfy customers, causing difficulties in financial support and further slippages in project timelines to transpire (Kaliba, Muya & Mumba, 2009; Kamrul Ahsan & Gunawan, 2009).

Superiority. In manufacturing, product superiority signifies distributing distinguished products that provides exceptional benefits and quality features to customers (Cooper, 1996).

Creativity. Creativity is an essential aspect of engineering performance as it involves creative idea generation and

innovation that is exceptionally useful for the conceptual stages in manufacturing projects (Garcia & Calantone, 2002; Leenders, Engelen & Kratzer, 2002).

Product development performance. Many firms also need to effectively understand and manage risks associated with developing new products since there is a persistently high probability of new product failure and large financial loss (Schmidt, Sarangee & Montoya, 2009).

In this study, engineering performance is considered on the whole as a dependant variable. From the combination of the previous sections, the fourth and final hypothesis is proposed as:

> H4: Leadership, CE and teamwork influence engineering performance in a Malaysian manufacturing firm

Fig.1 presents the research framework of this study. In this framework, the roles of leadership, CE and teamwork in the firm will act as the independent variables tested against engineering performance in a quantitative manner.

RESEARCH METHOD

The firm chosen for this study was founded in 1999 in Malacca, Malaysia. There are approximately 5600 workers employed in this firm. This firm also has about 43,000 employees worldwide, with 6000 of them involved in research and development. Other than in Malaysia, this firm also operates in Germany, Austria, France, Taiwan, Singapore and China.

Eight out of the world top 20 semiconductor manufacturers are known to operate in Malaysia and the company discussed in this study is one of them (Ford, 2011). The others are Intel, Texas Instruments (TI), Toshiba, Renesas Electronics, STMicroelectronics (STM), Advanced Micro Devices (AMD) and Freescale Semiconductor. The particular company chosen for this study reflects the leadership, CE and teamwork practices in the other seven, namely through their TQM practices. By extension then this study could be seen as a study on the eight semiconductor manufacturers in Malaysia.

Based on figures provided by this firm on projects in the last 2 years (since
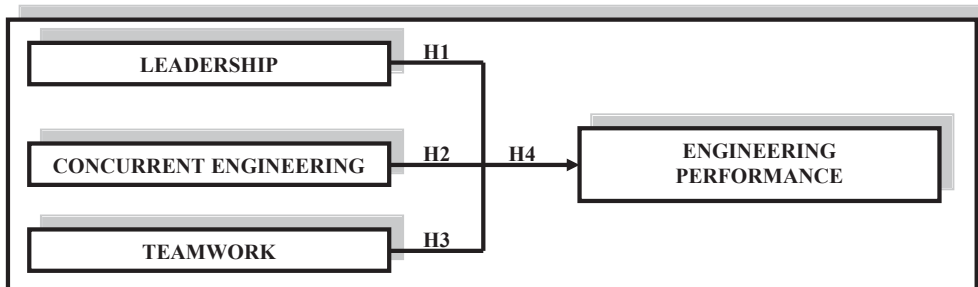
Fig.1: The Research Framework

2009), the firm had 3000 projects in total. Due to high turnover rates, transfers and resignation of managers, some projects were discontinued. The survey items of the questionnaire are tabulated in Table A of the Appendix in this paper. The items were adopted from the research of Jung and Wang (2006), Prajogo and Sohal (2006), Valle and Vazquez-Bustelo (2009), Tan and Vonderembse (2006) and (Fuentes-Fuentes, Albacete-Saez, & Llorens-Montes, 2004). A total of 2100 survey forms were handed out to all the engineering managers and engineers in the Malaysian firm.

As such, the unit of analysis for this study was the respective projects of these managers and engineers in the firm. Within 6 weeks, the data were gathered. A total of 226 survey responses were collected back out of the 2100 surveys that were handed out, which produced a response rate of 11%. The data was analyzed using SPSS 18, a statistical software application used for multivariate analyses, data reduction and data management. The statistical methods employed were Pearson's correlations analysis and multiple linear regression.

RESULTS

Pearson's correlation analysis is used to evaluate *H1*, *H2* and *H3*. The following tables present the results on the relationships among leadership, CE, teamwork and engineering performance. Table 1 presents the correlation analysis used to evaluate *'H1: Leadership correlates with engineering performance in a Malaysian manufacturing firm'*. The Pearson's correlation between

leadership and engineering performance is 0.632 with a p value of 0.000. Therefore, the relationship between leadership and engineering performance is positive and significant. Hence, *H1* is not rejected.

TABLE 1
Leadership – Engineering Performance Correlation

Test	Output	Interpretation
Pearson's Correlation	0.632***	Positive Correlation
Sig. (2-tailed)	0.000	Significant

*significant at $p < 0.05$ level,
**significant at $p < 0.01$ level,
***significant at $p < 0.001$ level

Table 2 presents the correlation analysis used to evaluate *'H2: Teamwork correlates with engineering performance in a Malaysian manufacturing firm'*. The Pearson's correlation between teamwork and engineering performance is 0.632 with a p value of 0.000. Therefore, the relationship between teamwork and engineering performance is positive and significant. Hence, *H2* is not rejected.

TABLE 2
Teamwork – Engineering Performance Correlation

Test	Output	Interpretation
Pearson's Correlation	0.632***	Positive Correlation
Sig. (2-tailed)	0.000	Significant

*significant at $p < 0.05$ level,
**significant at $p < 0.01$ level,
***significant at $p < 0.001$ level

Table 3 presents the correlation analysis used to evaluate *'H3: CE correlates with engineering performance in a Malaysian*

manufacturing firm'. The Pearson's correlation between CE and engineering performance is 0.662 with a *p* value of 0.000. Therefore, the relationship between CE and engineering performance is positive and significant. Hence, *H3* is not rejected.

TABLE 3
CE – Engineering Performance Correlation

Test	Output	Interpretation
Pearson's Correlation	0.662***	Positive Correlation
Sig. (2-tailed)	0.000	Significant

*significant at $p < 0.05$ level, **significant at $p < 0.01$ level, ***significant at $p < 0.001$ level

A multiple linear regression using the stepwise method was conducted to evaluate **'H4: Leadership, CE and teamwork influence engineering performance in a Malaysian manufacturing firm'**. The total amount of independent variables tested was three (Leadership, CE and teamwork) for *H4*. Using the formula provided by Tabachnick and Fidell (2001), the minimum sample size required in this study was 50 + (8 × 3) or 74 respondents. As such, the sample size criterion was met for this study.

Regression formulae are based on the assumption that residuals are normally distributed around the predicted dependent variable scores. For this study, normal probability plots were generated to test this. In the normal probability plots in Fig.2, since the points were in a reasonably straight diagonal line from bottom left to top right, it can be confirmed that there were no major deviations from normality (Pallant, 2005; Tabachnick & Fidell, 1996).

For the normality test, the measure of kurtosis and skewness values for the variables tested was within the prescribed |1.0| range (Tabachnick & Fidell,
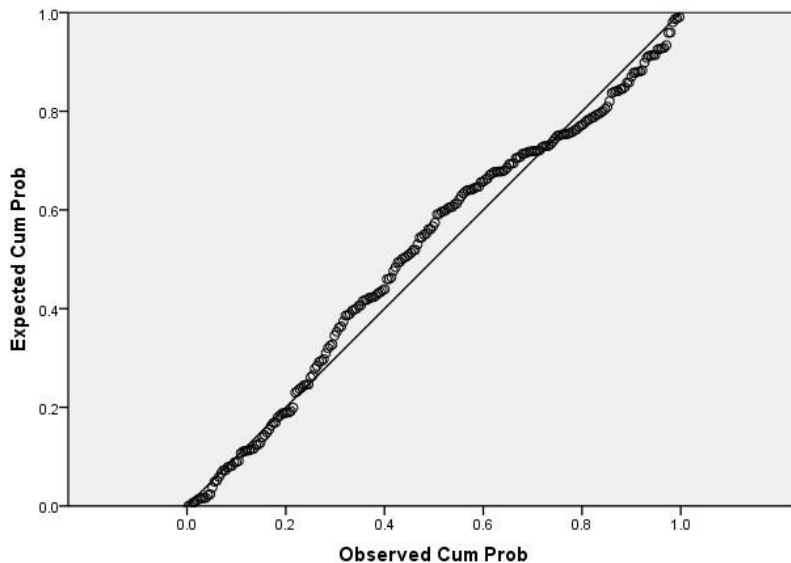
Fig.2: Normal Probability Plots of Regression Standardized Residual

1996). Having satisfied the assumptions for regression analysis, all of the four independent variables were regressed against creative product development and the results are summarized in Table 4.

The results in Table 4 indicate that up to 49.6% of the variance in engineering performance is explained by leadership, CE and teamwork. A correlation coefficient (R=0.704) was also obtained for this relationship. In addition to that, the model is significant as indicated by the ANOVA results of F (3, 222) = 72.775, $p<0.001$. Thus, the fourth and final hypothesis, **H4**, is supported.

DISCUSSION

From the results of **H1**, **H2**, **H3** and **H4**, it is evident that leadership, CE and teamwork positively and significantly influence engineering performance. When **H4** was evaluated, an even stronger relationship (R=0.704) was obtained as compared to that of **H1**, **H2** and **H3**'s relationships.

For the individual tests on **H1**, **H2** and **H3**, it was found that leadership correlates with engineering performance at the same strength with that of teamwork and engineering performance (R=0.632). These relationships occur possibly because

leadership and teamwork initiatives often go hand-in-hand in engineering projects.

Leaders have to be actively involved in the management of engineering processes and members are also required to demonstrate a certain degree of leadership and coordination skills in their team. Furthermore, leaders with high levels of self-esteem and enthusiasm can often gain their team members' respect, thus enabling better cooperation in the team (Chong, 2006; Sethi, 2000; Sethi *et al.*, 2001).

Both components of leadership and teamwork are of equal importance in a team. Teams strive on cohesiveness and synergy to tap on its member's abilities. A leader will normally be nominated to delegate tasks, monitor work performance and provide the right direction to the team members. Therefore, both teamwork and leadership can result in improved engineering performance. Moreover, according to Kolb (1995), both leaders and members should actively play the role of a leader and be open to new ideas in their team.

Furthermore, the leadership component in this study is not only referring to the leadership ability of the team leader, but also each team member's leadership ability. Since the leader is mostly a working

TABLE 4
Multiple Linear Regression for the Effects of Leadership, CE and Teamwork on Engineering Performance

Predictor	β	Std. Error	t	Kurtosis	Skewness	F	R	R^2
(Constant)	1.472	0.193	7.633***					
Leadership	0.121	0.059	2.040*	0.172	0.855			
CE	0.261	0.063	3.344***	0.035	0.797	72.775***	0.704	0.496
Teamwork	0.245	0.073	5.287**	0.020	0.644			

(Notes: *$p<0.05$; **$p<0.01$; ***$p<0.001$; N=226; Durbin Watson = 1.493)

member of the team as well, his/her role is to generally initiate and sustain the team's momentum. After the major tasks have been allocated, the team leader may take on a more dormant role as a team member.

The team members would also perform their assigned tasks individually but more often through discussions and knowledge sharing with other team members. Basically, in almost any discussion that involves a minimum number of 2 individuals, there would surely be a dominator that leads the discussion. Hence the leadership component still co-exists within team discussions and brainstorming sessions.

CE on the other hand, has the highest correlation with engineering performance (R=0.662). This is because CE involves initiatives to shorten lead time to manufacture and market, which eventually affects the overall cost, duration and product development performance of the project. It also involves cross-functional teamwork and the use of computer-aided design tools for better designing and information sharing. These aspects in CE enhance product superiority and team creativity in projects. Therefore, it directly affects engineering performance as a whole.

CE also involves regular knowledge sharing activities among cross-functional teams. Compared to the leadership and teamwork components, knowledge sharing practices would give an added advantage to a team over traditional methods. Although a team may produce good results with effective leadership and teamwork, a team that practices the knowledge sharing principles may have the extra competitive edge that elevates the team's performance to a whole new level.

In the analysis of **H4** which involved all three variables (Leadership, Teamwork, CE) and engineering performance, the correlation coefficient was found to be even higher compared to that of all the individually tested relationships (R=0.704). Principally, each of the 3 variables will exist at some degree in each team. For example, CE and knowledge sharing exists in a small role, which is through group discussions or brain storming sessions during the team meetings. However, the combined effect of all 3 variables would relatively be more significant than their individual evaluations.

According to Galbraith (1973), there is no best, near-to-best or uniformly effective way to manage an organization. From the regression model developed, it is therefore proven that engineering performance can be improved when not just one, but all the key determinants (Leadership, CE and teamwork) interact as a whole in developing engineering performance. Through this form of transformational leadership, leaders can be less or more directive in their leadership style depending on the competency of their teams (Chong, 2006; Sethi, 2000).

CONCLUSION

In summary, although good leadership is important for coaching and achieving a team's goal, a more flexible and cooperative leadership may be formed with the integration of CE, teamwork and leadership.

Although this study supports the theories discussed in the previous section, this study does contain some limitations.

The main limitation is the sampling method employed which limits the generalisability of this study beyond the context of this firm. Due to time as well as budgetary constraints, this study was conducted in only one Malaysian semiconductor manufacturing firm.

Apart from that, a concurrent modelling analysis in this study may not possible since the framework was developed in a way where the variables cannot be simultaneously tested against each other. This limits the possibility of discovering more relationships and effects among the dependent and independent variables.

Despite the main sampling limitation, this study stresses on the applied mechanism of leadership, CE and teamwork in a semiconductor manufacturing firm with an emphasis on engineering performance. This study would still be useful for other semiconductor firms since the findings can be generally used as guidelines in their efforts to recognize the integration of leadership, CE and teamwork as a new and enhanced practice in the marketplace. In a practical viewpoint, for example, this study can guide effective leadership on deciding when to coach team members and when to be directive. This decision may depend on the team's ability or competency and the task structure level.

A few suggestions are proposed to further improve the study and findings. The first suggestion is related to the survey method of conducting the study within a single firm. It is proposed that this study can be further extended to other manufacturing firms in Malaysia to evaluate the practice of leadership, CE and teamwork. This would allow for greater generalisability of the findings.

Another suggestion is to conduct in-depth qualitative studies in every technology cluster or business unit of this studied firm to further understand its organizational context to explain in more depth the role of leadership, CE and teamwork in various firms. Also, observational techniques could be employed to shed more light on this phenomenon. In addition, instead of using respondent-reported leadership, CE, teamwork and engineering performance scales, it would be better if researchers are able to use empirical data from the firm's records e.g. sales performance, customer satisfaction, development cost etc.

Also, a structural equation modelling (SEM) approach using a combination of statistical data and qualitative causal assumptions can be used in order to test and estimate causal relationships. One of the available software that can be utilized for this analysis is called AMOS. Using this approach, the variables for this study are capable of being tested simultaneously altogether instead of the conventional method where they are linearly tested with only one variable against another. At the same time, an addition of several leadership styles such as transformational leadership and charismatic leadership can also be included as part of the study in order to

discover more relationships in the model that can possibly induce team productivity and engineering performance.

Due to the support of theories and research together with possible practical implications, it is evident that leadership, CE and teamwork are indeed not only important for team functioning, but also as drivers for improved engineering performance. Though leadership may fundamentally be about doing the right things, it is still important for engineering leaders to take into account the various functions, situations and members in their team. With different competencies and personalities among team members, there is a necessity to have leaders who have a variety of skills and styles so that they can choose the best leadership style to a variety of situational factors.

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APPENDIX

Table A
Survey Items of Questionnaire

Component	Survey Items	Sources
Leadership	*Lead_1.* Our top management is committed to quality. *Lead_2.* There is a clear existence of vision and strategy. *Lead_3.* Organization-wide quality culture is practiced. *Lead_4.* We have objectives for quality performance.	(Jung & Wang, 2006)
	Lead_5. Seniors share same beliefs on firm's future direction. *Lead_6.* Managers encourage change and implement a culture of improvement, learning and innovation towards 'excellence'. *Lead_7.* Employees have the opportunity to share in. *Lead_8.* Employees encouraged to help implement changes. *Lead_9.* There is unity of purpose in our company. *Lead_10.* Barriers among people and sections are eliminated.	(Prajogo & Sohal, 2006)
Concurrent Engineering	*CE_1.* Product designs and production process are developed simultaneously by a group of employees. *CE_2.* Product development employees work as a team. *CE_3.* Product development group members represent a variety of disciplines. *CE_4.* Product development group members share information. *CE_5.* Much of process designs are done concurrently with product designs. *CE_6.* Product and process development designs are developed concurrently by a group of employees from various disciplines. *CE_7.* Manufacturing is involved in the early stages of product development. *CE_8.* Process engineers are involved from the early stages of product development. *CE_9.* Various disciplines are involved from the early stages of product development.	(Valle & Vazquez-Bustelo, 2009; Tan & Vonderembse, 2006)
Teamwork	*Teamwork_1.* Managers emphasize activities that lead to lack of cooperation between the firm and suppliers. *Teamwork_2.* Management encourage use of few suppliers based on quality rather than price. *Teamwork_3.* Managers and employees from different departments work independently to achieve own goals. *Teamwork_4.* Teamwork is a commonplace. *Teamwork_5.* Everyone participates in improvement. *Teamwork_6.* Staff see 'whole picture' in decisions. *Teamwork_7.* Employees are hesitant to voice their opinions, make suggestions or inquire about firm activities. *Teamwork_8.* Senior executives insist on accuracy and reliability of all information and communications in firm.	(Fuentes-Fuentes, Albacete-Saez & Llorens-Montes, 2004)

PERTANIKA JOURNALS

Turnover Intention among Academics: A Case Study of Private Higher Learning Education in Klang Valley

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ABSTRACT

Academics are seen as guardians of knowledge, disseminators of knowledge and creators of new knowledge. However, due to the expectation of Malaysia to be a regional hub for international higher education, it consequently burdens the academics especially in private higher learning education. Stress occurs among academics and stimulates them to leave. This situation is dangerous as it impacts on the institution and the student itself directly and indirectly. Therefore, this study attempts to investigate turnover intention from the perspective of job demand, job control and social support. 201 academics from private HLE were participated in this research and the empirical tests revealed that job control determine the level of turnover intention as well as social support on turnover intention. The regression estimation shows that social support was significantly reflected in turnover intention among academics.

Keywords: Turnover intention, private HLE, academics, job demand, job control, social support

INTRODUCTION

In today's context, knowledge-based economy is viewed as a crucial contributor to the nation's economic growth and wealth creation. To succeed in this rapid development environment, it is vital for the nation to discover knowledge, generate new ideas and encourage innovation especially among the undergraduates who are potential leaders for the future. However, the growth

and wealth is dependent on the capability and capacity of the nation in developing and applying new technologies. Therefore, to achieve it, starting in the middle of 1990's, the government of Malaysia urged the higher learning education (HLE) to generate a pool of well-educated and skilled professionals as a preparation for economic growth and sustain (Sohail & Saeed, 2002).

There are two types of entities of HLE in Malaysia, which are public and private. Public HLE is partly subsidized by the government while private HLE typically owned by private organization and most are profit oriented. However, the mission of both HLE is still the same, ultimately to produce a good quality of graduates which beneficial the nation. Moreover, derived from the theory of resource, the process of learning and personal development of the graduates is depending to the amount of ratio of student-academics (Astin, 1984). The person who becomes the backbone of the mission is pointed to the academics, who are responsible as guardians of current knowledge, disseminators of knowledge and creators of new knowledge (Maimunah & Lawrence, 2007).

Due to the liberalization, deregulation and privatization of HLE, have resulted a very dynamic and rapid expansion, such as innovative educational programs and changing educational policies. The sudden changes plus the target to be regional hub for international higher education tend to stimulate stress to the HLE's employee especially the academics. Suffered with the limitation of capacity and capability

compared to public HLE, it is prone to get caught in serious crisis of enrollment and financial. Therefore, to get off from the stress, academics are willing to leave their current job and looking forward for a new job (Karasek, 1997; Mohd Kamel, 2009).

In addition, besides focusing on teaching, academics are also responsible to participate actively in research work and innovation as well as community services. With such demands placed on the shoulder, academics need to deliver their core duties plus being responsible for non-academic work such as marketing and administrative work (Azman *et al*., 2010). Thus, these stimulate stress among academics and the consequences of stress then lead to cynicism towards work, poor organizational commitment, low job satisfaction (Taris *et al*., 2001) and finally induce the sense of turnover.

This study attempts to investigate whether job demand, job control and social support determine turnover intention among academics especially in private HLE. It is viewed that turnover intention among academics could result in negative consequences to the institution and student itself (Ehrenberg et al., 1990). Researches in private HLE particularly on turnover intention are very limited. Thus, the needs of understanding the factors that lead to turnover intention among academics are crucial and necessary in improving institution performance and producing competent human capital for the nation.

Turnover Intention

Intent to stay or to leave the organization can be classified as a final stage in the psychological decision-making process of a person before leaving (Mobley, 1977). It describes as forerunner to actual turnover behavior in many turnover models. In addition according to few theorists, they portrayed that turnover intention as the most substantial predictor of actual turnover (Mobley, 1982; Mowday *et al*., 1982; Smart, 1990; Steers & Mowday, 1981; Vandenberg & Scarpello, 1990).

Employee turnover can be an unfortunate and costly aspect of human resource management in most organizations. In classic studies, it showed that most of turnovers typically will results negative consequences (Mobley et al., 1979). Therefore, the consequences faced by organizations in employee turnover can be divided into two aspects which comprise direct cost and indirect cost. According to Wood and Macaulay (1989), direct cost is the organizations consumption of time and money in finding, hiring and training new employees. While for indirect cost, it occurred during the process of finding new employees that the organizations experience declining productivity especially in service caused by understaffing and also by the inexperience of new employees.

In the context of HLE, the investment on searching and hiring process by universities can be considered as high, however, the return is rather poor compared with earlier investment. It depicts that the institution is not capable to get a positive return from the investment on faculty member's promotion, training and sabbatical leave and it also ruins the aim in gaining and sustaining a quality of human capital and workforce. Aligned with Bowen and Schuster (1986), which stated that "The excellence of higher education is a function of the kind of people it is able to enlist and retain on its faculty". The problem of academic staff turnover or is also termed, "Brain Drain", still continues in our Malaysian local universities (Khoo, 1981).

However, turnover can also be seen as movements of labor in and out and able to generate income for economy growth for both organization and individual. Indeed, it provides new opportunity in vacancy, knowledge and skills transferred from one organization to another by both parties. In facts, as suggested by Mobley (1982), turnover phenomenon is able to stimulate positive changes through creation the promotion opportunities, reorganization and restructuring. While in individual perspective, the decision to quit is positively associated with individual's career objectives, or with the movement away from a stressful situation. It is supported by the studies done in Japan (Yadori & Kato, 2007) and United States (Kacmar et al., 2006; Shaw et al., 2005) which stated that the voluntary turnover ratio has negatively related to labor productivity.

In the academic context, turnover among academics can be considered as a natural part of professional advancement. In Brown's (1967) study, the author suggested that the mobility of academics is accepted and approved by the profession "because

loyalty to discipline transcends loyalty to school and because teaching and research skills are readily transferable among schools". Moreover, human capital theorists also believed that personal endowment such as ability and education could translate into returns in the marketplace.

Job Demand

Job demands is defined as job that associates with physical, psychological, social, or organizational features that require an effort from the physical and/or psychological from an employee (Bakker *et al.*, 2003; Bakker et al., 2005). To meet the expectation of the organization, the employee must perform accordingly to the objective and goal as well as pursue the needs of the job. However, pursuing career in an established organization correlates negatively to turnover intention (Latif & Grillo, 2001). In other words, job demand is not harmful in itself.

Heavy workloads, large number students to teach, may generate hostility towards the organization and diminish levels of academics commitment to the organization. Xu (2008) found that those academics who spent too much time in research and committee work, tend to leave. Winefield (2000) proved in his meta-analysis that those academics with high level of stress were associated with high level of workloads and low level of rewards. In empirical study on workload, past researches indicated that workload is one of the most stressful aspects of academics careers (Barnes *et al.*, 1998; Witt & Lovrich, 1998).

Job Control

Job control is defined as the ability of employees to set organizational goals and to structure the organization to maximize professional concerns (Price, 1997). In details, it is a freedom of academics in choosing and pursuing one's own agenda and being trusted to manage the pattern one's own working life and priorities (Henkel, 2005). Moreover, freedom is a function of academic control of the professional arena of teaching and research and is viewed as a necessary condition for work and identity. Turner and Lawrence (1965) found that autonomous in work may satisfy higher-order needs for achievement and accomplishment, which in turn generate positive regard for the employing organization and higher levels of intent to stay.

Meanwhile, skill discretion is the degree of creative and skill that employee could implement it in performing well in job. Florida and Goodnight highlighted that the creative person as "… an arsenal of creative thinkers whose ideas can be turned into valuable products and services" (2005). Therefore, freedom in implementing the academic task such as teaching, administrative and research with creative execution will lead to the satisfaction and subsequently decrease turnover intention. It leads to the feeling of appreciation from organization regarding the skills which cultivate an eager and interesting attitude in acquiring new skills and experiences in order to take new and more challenging position (Moore, 1983; Moore & Twombly

1990; Sagaria & Hohnsrud, 1992; Scott, 1978).

METHODOLOGY

Conceptual Framework

A conceptual framework for this study were derived from the previous literature review on occupational contents which were named as job demand, job control and social support towards turnover intention as proposed by Durrishah *et al.* (2009). The model for this study, which is a conceptual framework of linking job demand, job control, social support and turnover intention, will be presented (see Fig.1) and 3 hypotheses were developed in order to test the conceptual framework as stated below:

Social Support

Social support is viewed as stress and strain aid. Thoits (1983) stated that the availability of support from colleagues provides individuals with positive feelings, such as a sense of self-worth and confidence that help them to avoid negative experiences. In academia, Neumann and Finaly-Neumann (1990) found that support from colleagues and supervisors able to make research work easier among faculty, which increase research performance. Moreover, it is importance to create a supportive thinking environment with colleagues concerning other academics issues (Van Staden *et al*., 2001). For examples, research assistants, co-authors and students were considered as significant sources of motivation to remain firm during difficult times.

However, although social support has proved its roles in handling stress, past literature has shown that academics report not receiving enough support from their colleagues. For instance, in a recent study on satisfaction among academics and administrative staff in Turkish universities, Kusku (2003) disclosed that most of the academics were not content with their colleagues with respect to cooperation and interest in their academic activities. This situation portrayed that each of the academics were experiencing perceived competition from each of their colleagues instead of cooperation.

Hypothesis 1: There is a relationship between job demand and turnover intention.

Hypothesis 2: There is a relationship between job control and turnover intention.

Hypothesis 3: There is a relationship between social support and turnover intention.

Procedures

This study mainly employed the quantitative method in order to probe and understand the turnover intention among academics in the private HLE. Generally, in quantitative research, the common type approaches is self-report survey (Shaughnessy & Zechmeister, 1997). The primary data collection was through the distribution of a survey questionnaire to the sample particularly from private HLEs in Klang Valley.
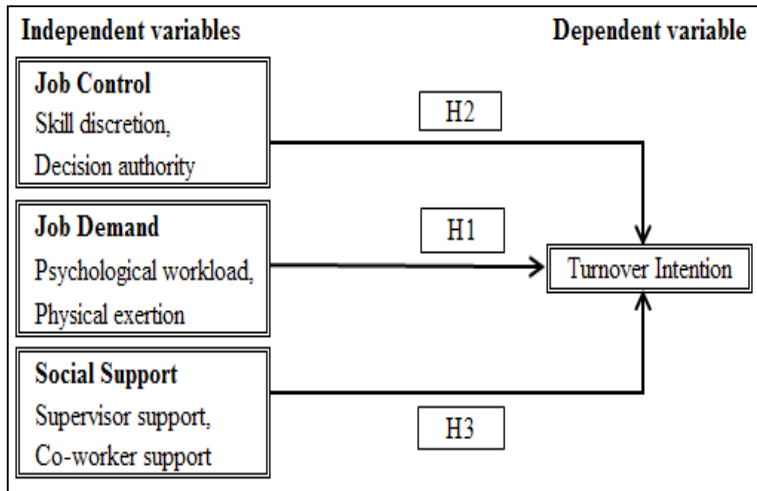
Fig.1: Research Framework: Job Demand, Job Control, Social Support and Turnover Intention

Population and Sampling

A list of private HLEs was obtained from the Ministry of Higher Education (MOHE). Based on the year of 2011, there are 242 of private HLE in the Klang Valley (Selangor and Kuala Lumpur). The targetted population for this present study were academics who work in private institution of higher learning in Selangor and Kuala Lumpur.

A simple random sampling procedure was adopted to determine an appropriate sample for the study. Sekaran (2000) suggested simple random sampling offers great generalizability and has the least bias. Based on MOHE, there are 14,199 numbers of academics which been employed in private university and college university and according to Krejcie and Morgan (1970) and Cohen (1969), when the population of sample more 10,000 and capped at 15,000, the appropriate number of sample size are 375. However, to minimize the sample error, the sample number was up to 400.

400 questionnaires were distributed to the respective respondent via email. A total of 215 academics responded to the questionnaire. The overall response rate was 53.75% and it is more than minimum rate which are 30% and is considered as acceptable (Sekaran, 2003). However, only 196 questionnaires were valid to use after deleting 19 set of questionnaires with missing data.

The Instrument and Measurement

For independent variables, all 31 questions for job demand, job control and social support were adopted from Job Content Questionnaire (JCQ) developed by Karasek (1985) while for dependent variable, the instrument was adopted from O'Driscoll and Beehr's, (1994) and it consists of three questions.

In Part 1, seven sections covered 34 questions which are skill discretion and decision authority (9 questions),

psychological workload and physical exertion (14 questions) supervisor and co-worker support (8 questions) and turnover intention (3 questions). Meanwhile, in Part 2, seven questions on demographic information of participants. These demographic variables were treated as control variables in this study. Six-point Likert scale will be use for each variable in the questionnaire which anchors being (1) strongly disagree to (6) strongly agree. Therefore, for the variables, the higher score for variables indicating higher job demand, higher job control, higher social support and higher turnover intention.

Reliability and Validity Analysis

Cronbach's Alpha test was employed in this study and according to Sekaran (2003), it is a reliability coefficient test that points out how well the items in a set which are positively correlated to one another. To consider the variables as reliable, the Cronbach's Alpha value was set to 0.7 and above (Pallant, 2001).

In job demand, for overall 14 questions, the reliability analysis is 0.691. To imply a relatively high internal consistency, item number four in psychological workload was deleted and the reliability have slightly improved to 0.716. While in job control, nine items showed internal consistency at 0.645. Therefore, the researcher decided to exclude item number eight and reliability slightly improved to 0.737. For social support, it showed at 0.869 and all eight items in social support exhibits internal consistency and reliability. Meanwhile,

the dependent variable was represented the value of reliability at 0.915.

An exploratory factor analysis (EFA) with Varimax rotation was conducted on the items from independent and dependent variable. This study adopted the convention advocated by Nunnally (1978) which stated that factors are generally named based on loading greater than or equal to 0.4. Hence, by using this criterion, only items with factor loadings of at least 0.4 were retained.

Two items with factor loadings below 0.4 were identified in job control and social support. However, previously in reliability test, two items which from job demand and job control were already removed in order to achieve higher internal consistency and removal of any additional questions from the tool would result in loss of valuable information that are significant to this study. A Varimax rotated analysis suggested that existence of three significant factors with Eigenvalues greater than one which explained 58.637% of the total variance. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was at 0.766, which greater than a minimum acceptance value of 0.5. The Bartlett Test of Sphericity showed at Chi Square value of 3056.566 with the significant level lesser than 0.001. Therefore, these three factors were named Job Demand (thirteen items), Job Control (eight items) and Social Support (eight items) are seemed tolerable to represent the independent variables.

While for turnover intention, a single factor solution with Eigenvalues of 2.575 which is explaining 85.833% of the variance

has emerged. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.723 whereby Bartlett's Test of Sphericity was significant with Chi Square value of 457.429 with the significant value stands lesser than 0.01. Therefore, this single factor is named as turnover intention.

RESULTS AND DISCUSSION

Descriptive Analysis

According to Table 1, there were moderate job demand which were represented by calculated mean at 3.33 and standard deviation at 0.67. While for job control, the calculated mean and standard deviation showed at 4.91 and 0.65. These showed that academics experienced high level of job control. For social support, the level was high which was represented by mean and standard deviation at 4.49 and 0.87. As for turnover intention, the level is moderate which mean and standard deviation at 2.64 and 1.56.

Hypotheses Testing

Hypotheses were tested using the Pearson Product-Moment Correlation. In line with conservative approach, two-tailed test of significance set at 0.05 level was used although if the hypothesized relationship is directional (Polit & Beck, 2004). Table 2 showed the summary of correlations between independent variables and dependent variable.

Hypothesis 1

The results indicated that $p = 0.242$ and $r = 0.083$. Since p-value is bigger than 0.05, it is showed that the results was fail to reject the null hypothesis. Therefore, there is no significant relationship between job demand and turnover intention. The findings is align with research done by Latif and Grillo (2001) which stated that job demand is not harmful especially when pursuing in established organization particularly in HLEs in Malaysia. On the other hand,

TABLE 1
Mean and standard deviations for each independent and dependent variable

Variable		Mean	Standard Deviation
Independent	Job Demand	3.33	0.67
	Job Control	4.91	0.65
	Social Support	4.49	0.87
Dependent	Turnover Intention	2.64	1.56

TABLE 2
Summary of correlation between independent and dependent variable

Variable	1	2	3	4
1. Turnover Intention	--			
2. Job Demand	0.083	--		
3. Job Control	-0.175	0.217**	--	
4. Social Support	-0.275**	0.065	0.443**	--

Note: **Correlation is significant at the 0.05 level (2-tailed)

the results is contrary with past researches which stated job demand will lead to stress which eventually lead them to stimulate turnover intention (Barnes *et al*., 1998; Witt & Lovrich, 1998; Winefield, 2000; Taris *et al*., 2001; Xu, 2008; Azman *et al*., 2010).

Hypothesis 2

The results was stated that p < 0.05 and *r* = -0.175. Since p-value was lesser than 0.05, the null hypothesis were rejected. Therefore, there is a significant relationship between job control and turnover intention. Meanwhile, the magnitude of the correlation is almost negligible relationship (Guilford, 1956) and the directional is negative which is when academics perceived high job control, it lead to eliminate the turnover intention. This result depicted that job control experienced by academics in private HLEs towards turnover intention are align with previous researches done by Turner and Lawrence (1965).

Hypothesis 3

The results was showed that p < 0.05 and *r* = -0.275. Since the p-value is lesser than 0.05, and the null hypothesis were rejected. Therefore, there is a significant relationship between job control and turnover intention. Meanwhile, for the magnitude of correlation, it depicted a low correlation (Guilford, 1956) and the direction was negative. It showed that the level of social support is high and able to eliminate the turnover intention among academics (Thoits, 1983; Neumann & Finaly-Neumann, 1990) and it is contrary with previous research done by Kusku (2003).

Explanation of Variance

In order to understand the explanation of variance between these variables, job control and social support were entered simultaneously as predictors in a multiple regression analysis. Table 3 depicted the results of explained variance and Table 4 showed the analysis of variance derived

TABLE 3
Explained variance (job control and social support towards turnover intention)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.281(a)	0.079	0.07	1.5081

Predictors: (Constant), Job Control, Social Support

TABLE 4
Analysis of variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	38.697	2	19.348	8.507	0.000 (a)
Residual	450.326	198	2.274		
Total	489.023	200			

from the test of regression while Table 5 revealed the predictor of turnover intention.

According to the result, it is showed that job control and social support explained only 8 percents in turnover intention among academics in private HLEs and the strength of the relationship is considered as low relationship (R = 0.281).

The results revealed that both independent variables (job control and social support) have significant relationships with turnover intention among academics in private HLEs. The p-value obtained was 0.000 which was lesser than 0.05 with the corresponding F-value of 8.507. This means that the regression model which consists of job control and social support and turnover intention was significant.

The results showed that social support was a significant predictor for turnover intention. The β value of -0.441 and p-value of 0.001 indicates that it is a moderate significant predictor of turnover intention. It is viewed that social support has a negative effect on turnover intention as the estimated coefficient were negative. In other words, an increase in social support would reduce turnover intention. For instance, if social support increases by one unit, then turnover intention would decrease by 0.441 units

and vice versa. Therefore, the equation of the model above can be written as follows:

Turnover Intention
= 5.396 – 0.159(Job Control)
  – 0.441(Social Support) + e

Where the 'e' is error.

However, the estimated coefficient for job control (as the other independent predictor) was not significant statistically. This indicated by its computed t-statistic and p-value more than 0.05. Thus, the best predictor for the turnover intention is social support.

CONCLUSION

The overall mean for turnover intention among academics in private HLEs can be considered as moderate with the mean's value of 2.64 and generally the issue of turnover intention can be summarized as not a serious problem. This finding aligns with public HLE (Morris *et al.*, 2004) although the contexts (private versus public) are different due to several factors such as accountability to different stakeholders, sources of funding, profit orientation, bureaucratic, regulatory costs and obligations to the public (Triantafillou, 2004).

TABLE 5
Regression Coefficients among job control and social support

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.396	0.844		6.395	0.000
Job Control	-0.159	0.184	-0.066	-0.862	0.390
Social Support	-0.441	0.136	-0.246	-3.234	0.001

Dependent variable: Turnover Intention

Since this study replicated the model from the study done by Durrishah et al. (2009), the researcher found out that the model which stated that occupational contents and turnover intention among the managers could not be a best predictor of turnover intention when it comes to the academics. This was supported by the R^2 value from this study which was stated that only eight percent in explaining of variance turnover intention among academics compared to R^2 value of 49 percent of variance explains in turnover intention among managers in that particular industries environment. Moreover, the relationship of the model proposed depicts a low relationship between predictors and turnover intention.

The researcher believed that when it comes to the interest of turnover intention among academics in private HLEs, the constructs proposed could not be the best predictor in turnover intention. Therefore, in future studies, this turnover issue should consider variables like job satisfaction (Mobley, 1977), organizational commitment (Mowday *et al*., 1982; Mathieu & Zajac, 1990) and organizational support (Blau, 1964; Eisenberger, 1986) which were derived from the element of job security, salary and compensation, leadership and others.

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Science Teaching Styles and Student Intrinsic Motivation: Validating a Structural Model

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ABSTRACT

This present study seeked to investigate the teaching styles adopted by the science teachers and their student intrinsic motivation in order to be persistence in learning the subject. Using the response from student experiences, the 5Es instructional model by Bybee (1996) has been adopted for the theoretical framework in the study. The purpose of the study was to validate the 5Es model and intrinsic motivation. 452 samples from selected secondary school students in Kuala Lumpur, Malaysia have been collected to provide the responses for self constructed questionnaires in the structural equation modeling analysis. The findings provide the implications toward empirical evidence of theory, teaching practice and appropriate interventions that can be addressed for future research.

Keywords: Science teaching, instructional technology, constructivist learning, instructional design model

INTRODUCTION

Direct instruction has been dominating science teaching for many years. Teachers put the emphasis on content knowledge which requires students to remember and recall facts. The lack of diversities in the teaching styles has led many students to withdraw from taking the subject in final year of secondary school and even in the university. Powell (2003) asserts on the overused of the direct teaching pedagogical approach which drives only selected students to sustain and succeed in learning. Further, teachers may find difficulties to implement constructivist approach where students active participation, discovery learning, project based learning are integrated in the teaching process. Despite constructivist approach contributes to effective teaching and learning and high motivation (Piaget, 1972), there is lack of evidence on the extent of this approach is materialized in schools.

Previous researches have addressed teaching strategies of Engagement theory in ICT learning environment (Kearsley & Schneiderman, 1998) and learning styles accommodating multiple intelligence (Gardner, 1993). Kearsley and Schneiderman (1998) have focused on project based, problem based and collaboration approach in science teaching. However, it is difficult to distinctly assess both problem and project based learning as they relate to group and collaboration work. On the other hand, Gardner (1993) has used the sensory modality to look into visual-spatial intelligence which draws the attention of images and graphics and bodily kinesthetic intelligence facilitating physical manipulations and interactions. This leads to the integration of Information Communication Technology (ICT) in science teaching which can promote student learning through stimulations, graphics and multimedia presentation. Two other related intelligences are intrapersonal and interpersonal which the prior relates to interaction with others while the later emphasizes on self concept or meta-cognition. Thus, teaching strategies must address different learning styles which are dominated by different types of multiple intelligences. As a result, when students are provided with individualized learning, they are able to think critically and aware of their mental capabilities.

Other related researches of science education in the context of Malaysian have focused on the need to improve science teaching instruction (Kamisah Osman, Lilia Halim & Mohd Meerah, 2006); investigating teachers' experience in teaching mathematics and science in English (Lan & Tan, 2008) and inventory of science teachers needs (Zurub & Rubba, 1983); and in-service needs assessment of science teachers (Lilia Halim, Kamisah Osman & Mohd Meerah, 2006). However, these previous researches were lacking to promote models of teaching or empirically show the evidence of student intrinsic motivation and teacher style of teaching. Thus, this research utilized a self constructed instrument to measure 5E's model in the context of science teaching. The research has been designed quantitatively with a purpose to reveal the extent of 5Es' model is presently practiced in science teaching in Malaysian schools. Specifically, the findings were focused on the validation of the structural model and the estimation of the relationships of 5Es and student intrinsic motivation. This research has been guided with a theoretical framework from the instructional design model namely 5Es by Bybee (1997), intrinsic motivation and other related literatures of pedagogical approach in learning.

THEORETICAL FRAMEWORK

Bybee (1997) has introduced the 5Es model in a structured sequence and designed in practical manner that can be considered easy to implement the constructivist theory. This model is rooted from constructivist views forwarded by Piaget in 1960. The model also promotes experiential learning by engaging students in higher-order thinking learning

activities. Despite Ergin, Kanli and Unsal (2008) have shown the evidence that 5Es model can directly promote curiosity and active learning, they have raised the issue of which event or attitude that can promote motivation is still remain unclear. However, Ritchie (2001); and McRobbie and Tobin (1995) indicate on the interaction involves will contribute students to think in critical, reflective and analytical way.

The 5Es model relates to 5 phases which is cyclic in nature namely; Engagement, Exploration, Explanation, Elaboration and Evaluation. Engagement has become the main phase of any learning theories and instructional design which include Gagne nine events of instruction, intrinsic motivation by Brophy (1997) and Engagement theory (Kearsley and Sheneiderman, 1998). The most important phase namely engagement involves teachers to grab student attention and interest (Bybee, 1997) and capture children's imagination (Swanage & Lane, 1999). Engagement can lead to inquire and learn (Bybee, 1997), motivation (Gagne, 1995) as well as to be persistent in learning (Skinner & Belmont, 1998).

Bybee (1997) further includes Exploration or Expansion as to ensure students to develop concepts and skills by having common, practical experiences, It can be achieved through introducing scientific concepts in preceding steps that is easy for students to digest and comprehend the scientific theories. In the context of science teaching in schools, students are allowed to carry out experiments in groups,

test hypotheses and explore their own ideas to relate with the topics. However, teachers are more inclined towards teaching for exams that laboratory work may not be an important learning activity at present. Exploration can also be referred to inquiry based learning activities. Inquiry based learning leads to critical thinking skills, positive attitudes and curiosity toward science and high achievement in science (Hall & McCudy, 1990)

Explanation is crucial in teaching which can be from the teacher or students participation to present their ideas, explanation of concepts or summarizing the topic they have learnt. However, Swanage and Lane (1999) further emphasize that the explanation must be clearly linked to earlier activities of engagement and exploration. Teachers must provide supportive environment by allowing students to explain and take part in teaching and learning. However, this activity may not be allowed when teachers are more inclined towards traditional teaching style.

Elaboration involves students to extend their knowledge of concepts to other contexts. Piaget (1972) refers one as intelligent when he or she is able to extend knowledge and apply to other context. Thus, students can elaborate by finding similarities in different context (Swanage & Lane, 1999) but with a condition that teachers provide problem solving environment (Boddy, Watson and Aubusson, (2003). These activities will promote students to be intrinsically motivated.

The last component namely evaluation involves formal assessment namely formative and summative. However, reflections can also be part of evaluation as constructivist theory includes evaluation as part of the learning component. Learning activities can include comparing, contrasting, provide values and carry out experiments on their own.

RESEARCH METHODOLOGY

This research has been designed quantitatively with a targeted population of secondary schools in Kuala Lumpur, Malaysia. 500 samples have been selected randomly from the science class (general science, biology, chemistry and physics) in five schools comprising students from all Forms (one, two, three, four and five). However, only 452 samples responded.

Instrument

A total of 46 questions with demographic information has been designed and constructed based on the 5E definitions by Bybee (1997) and other literatures related to intrinsic motivation. The reliability of the instrument has been tested for the Cronbach's alpha. The instrument was further validated through confirmatory factor analysis. A 5-Likert scale of strongly disagree to strongly agree have been used to identify students' experience on their science teaching styles and intrinsic motivation. The structural model has been tested to provide information of the model fitness that explains the relationships of 5Es and intrinsic motivation .

Hypotheses

Based on the 5Es instructional model and intrinsic motivation, the following hypotheses have been postulated. Fig.1 provides the hypothesized model.

H1: engagement influences student intrinsic motivation

H2: exploration influences student intrinsic motivation

H3: explanation influences student intrinsic motivation

H4: elaboration influences student intrinsic motivation

H5: evaluation influences intrinsic motivation

H6: 5Es are five- factor model

ANALYSIS PROCEDURE

The Statistical Package for Social Science (SPSS) was used to compute the descriptive statistics and to perform reliability. Analysis of moment structures (AMOS) with Maximum likelihood estimation (MLE) was used to perform confirmatory factor analyses (CFA) and covariance structure analyses or structural equation model (SEM). A selection of variables were based on the CFA where only loadings of 0.5 and above were taken for final analysis of SEM. All violations have been addressed (error variances >0.8) with model fit indices were in the threshold point (RMSEA<0.08,CFI-comparative fit index>0.9,Tucker Lewis fit index- TLI>0.9, GFI-goodness fit index>0.9). However, p was ignored due to chi-square statistic is sensitive with the big sample size (>250) as guided by Kline (2001).
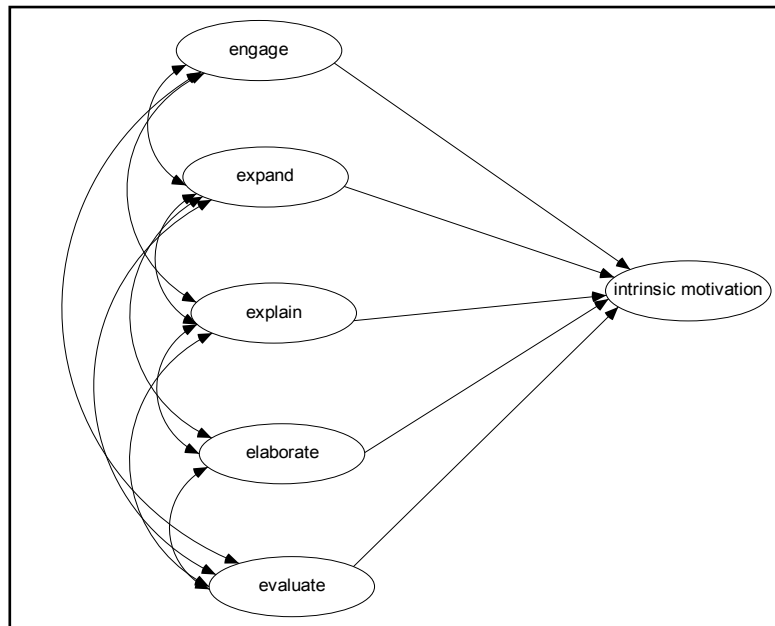
Fig.1: hypothesized model of teaching style and student intrinsic motivation

RESULTS

There were 452 (274 males and 178 females) respondents from the five selected schools. The breakdown of age group is revealed in Table 1. Majority of the respondents came from the age group of 14-16.

TABLE 1
Number of students based on age

Age	Frequency	Percentage
8-10	41	9.1
11-13	161	35.6
14-16	229	50.7
17-19	21	4.6
Total	452	100.0

The structural model was analyzed by addressing all paths to be significant at Critical ratio (CR) of more than 1.96.

The paths which were not significant were deleted from the model. The item loadings of greater than 0.5 were selected. However, the researcher firstly addressed the model fit by finding the estimate model of fit indices values as outlined by Kline (1998) and Byrne (2001). The results show that the hypothesized model was to be rejected where two paths have contributed to non significant values (CR<1.96) and the model did not fit the data. Thus, the researcher further re-specified the model by deleting the non-significant paths.

The final findings have shown a fit model (RMSEA=0.60; CFI=0.919; TLI=0.906; GFI=0.901). (see Table 2 and Table 3). Only elaborate (β=0.403) and engage (β=0.3903) influenced significantly on intrinsic motivation. The five- factor model of 5Es

was significantly correlated to each other ranging from 0.338 to 0.738 indicating the factors were distinct and fulfill the divergent validity. Fig.2 provides the re-specified structural model.

TABLE 2
Standardized Regression Weights for direct path

Direct paths		Factors	Estimate
intrinsic motivation	←	elaborate	.403
intrinsic motivation	←	engage	.393

Further investigation of the items reveals that when teachers formulate activities which stimulate student involvement, encourages students to ask many questions and grabs their attention before starting the lesson (engage) have affected the way they feel towards science (intrinsic motivation). These include their effort to refer to the Internet even when teacher does not ask, work hard to get good results for this subject, happy with the teaching method used by teacher, enjoy learning science subject and look forward for the next class. On the other hand, when questions prompted after experiment are resolved through teacher elaboration, connects other related concepts to the real world, teacher allows students to build their own understanding and expands

Fig.2: Re-specified model

TABLE 3
Standardized regression weight for items to factors

Factor loadings of items to factors			
formulate activities which stimulate our involvement	←	engage	.551
encourages students to ask many questions	←	engage	.671
grabs our attention before we start our lesson	←	engage	.601
involves us in defining and resolving the problem	←	expand	.671
relates the contents with the real life examples	←	expand	.744
gives problem to solve in groups	←	expand	.604
uses Internet resources to include in the teaching materials	←	expand	.634
add explanation after presentation of the student	←	explain	.719
explains further when we don't understand the concept	←	explain	.727
grabs our attention before we start our lesson	←	engage	.601
involves us in defining and resolving the problem	←	expand	.671
relates the contents with the real life examples	←	expand	.744
gives problem to solve in groups	←	expand	.604
uses Internet resources to include in the teaching materials	←	expand	.634
add explanation after presentation of the student	←	explain	.719
explains further when we don't understand the concept	←	explain	.727
explains on what to learn in the beginning of the lesson	←	explain	.643
uses appropriate language to teach	←	explain	.409
questions prompted after experiment are resolved through teacher elaboration	←	elaborate	.633
connects other related concepts to the real world	←	elaborate	.703
teaching allows me to build my own understanding	←	elaborate	.773
elaboration expands our understanding of the concept	←	elaborate	.729
designed exam questions based on teaching	←	evaluation	.788
includes test questions according to examination standard	←	evaluation	.833
provides practical work assessment in the laboratory	←	evaluation	.680
comes to students to check their work	←	evaluation	.542
refer to the Internet even when teacher does not ask	←	intrinsic motivation	.830
work hard to get good results for this subject	←	intrinsic motivation	.808
am happy with the teaching method used by teacher	←	intrinsic motivation	.842
enjoy learning science subject	←	intrinsic motivation	.723
look forward for the next class	←	intrinsic motivation	.769

their understanding of the concept, these will further impact on intrinsic motivation.

It can be concluded that explore, explain and evaluation were not prevalent and strong enough to influence student intrinsic motivation. This could be due to teacher's effort in making the class related to further application in different context (explore), evaluate students, and explaining did not promote further on students' effort to be persistence in learning. These results have shown that science teaching at selected secondary schools in in Kuala Lumpur are still lacking of constructivist approach.

DISCUSSION AND RECOMMENDATIONS

The findings of this study are parallel with Boddy, Watson and Aubusson, (2003); and Swanage, and Lane (1999) where engaging students and elaboration on the science concepts will trigger students to be intrinsically motivated in learning. Teachers were successful in engaging students to learn, grab their attention and interest. The students were also able to be actively involved in extending their knowledge to other context as well to have freedom to solve problems given.

However, the other three strategies namely explain, explore and evaluation were not prevalent. Students were more inclined towards active participation where they can carry out experiments, test hypotheses and explore their own ideas to relate with the topics in the exploration or expansion. This is supported by the results of high loadings in the factor of *exploration*. However, it

is not strong enough to promote them to enjoy, be persistence in learning and to show interest in the science classroom. Further, evaluation was not a strong factor for students to get interested in science learning. They are bonded with exams that diminish their enjoyment in learning (Deci, Koestner & Ryan, 1999). Evaluation in problem and project based learning involves ill structured problems where students can solve problems and teachers monitor their students' thinking (Torp & Sage,2002). This kind of assessment may not exist in the structured, centralized and exam oriented curriculum. In the explanation, only the teacher i nvolved in the process which included, "*add explanation after presentation of the student, explains further when we don't understand the concept, explains on what to learn in the beginning of the lesson"*. The items which involved students to summarize, explain, demonstrates were not detected in the analysis. This has proven that the selected schools in Malaysia still adopt teacher centered rather than student centered learning in science.

This research has shown the selected schools in Kuala Lumpur have adopted the 5Es instructional strategies. However, more effort is needed in inculcating further on the effective exploration, explanation and evaluation teaching strategies to the students. Teachers must involve students to be active in participating to explore scientific concepts further in real world context. Thus, students must be able to plan, develop and execute the laboratory work. Teacher must be able to play the role as a facilitator by

assisting students in the experiments. On the hand, students must also involve in explaining rather than waiting for teachers to provide explanation. Teaching towards exam has further rooted in Malaysian curriculum thus diminishes student interest in science teaching. Teachers must be able to address the issue by making classroom more interesting enjoyable.

Despite the findings have shown a model of 5Es influencing student intrinsic motivation, further investigation needs to be carried out to other schools at different counterpart. The findings may be different when samples are from residential or Smart schools. The instrument has been constructed based on the definitions by Bybee (1996). Further bigger sampling with modifications of the instrument is necessary in validating the instrument so other researchers can utilize and adopt.

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Is Problem Solving and Systems Thinking Related? A Case Study in a Malaysian University

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ABSTRACT

Do systems thinking facilitate the acquisition of important skills in solving ill-defined problems? This exploratory study seeks to investigate whether an association exists between problem-solving and informal systems-thinking skills. A survey methodology that included a paper and pencil test was used to gather data. Four performance tasks designed and adapted to local context were employed to measure both sets of skills. Following that, the performance of each respondent was scored based on an analytical scoring rubric. Both descriptive and inferential data analysis involving comparisons of the populations and checking for correlations were carried out. Findings indicated that the respondents performed poorly in all the tasks. The mean score for systems thinking was found to be lower than that of problem solving. These skills were analysed according to three pre-selected demographics. Interestingly, the data indicated that there was a positive but moderate association between problem-solving and systems-thinking skills. The limitations and some general recommendations for future research were also discussed.

Keywords: academic achievement, gender, higher education, problem solving, systems thinking

INTRODUCTION

Education systems throughout the world in the last decade has come under intense scrutiny where its' outcomes are doubted to commensurate with the billions of dollars expended (Reilly, 2000; Senge, 1998; Finn & Ravitch, 1996; Forrester, 1994; Morrison, 1991). As pointed out by Johnson

& Duffett (2003), "For five consecutive years between 1998 and 2002, majorities of employers and professors have been reporting profound dissatisfaction with the skills of recent public school graduates" (p. 20). The education systems is said to fall short of producing workforce that is capable of dealing with today's society which is characterized as dynamic, uncertain and complex.

Realizing this discrepancy, educators have since been emphasizing the teaching for problem solving as a major educational objective (Mayer, 2002). Problem solving is stipulated explicitly in the educational objectives, blueprints, planning, strategies outlined by educational institutions worldwide in their endeavour to produce quality workforce for the society. The main focus of our education curriculum has been learning how to solve problems. However, the traditional approach to problem solving referred as reductionist approach fails to perform well on complex, ill-defined problems and 'when parts of a more complex problem are all independently optimized' (Douglas, Middleton, Antony & Coleman, 2009). This dominant problem-solving approach is said to work better for simple and well-defined problems. Ultimately some systemic theories and models were developed in response to this issue. One approach that particularly stands out from the rest is the systems-thinking approach (Flood, 1999). Systems-thinking approach is not just about how to analyse a situation from the disciplinary perspective but how to synthesize the ideas gained from different disciplines of study to form a better and more holistic understanding that can lead to effective and long lasting actions (Kay & Foster, 1999).

In an effort to identify and promote the 21st century skills, the Partnership for 21st Century Skills Organization, P21 (2011) has put forward a Framework for 21st Century Learning where critical thinking and problem solving are emphasized as important learning and innovation skills every learner should master to succeed in work and life in today's society. While elaborating the elements that constitute successful critical thinking and problem solving, this framework explicitly suggests the use of systems thinking as one of the approaches in solving problems. It is clearly stated by the framework that systems thinking enable one to "analyze how parts of a whole interact with each other to produce overall outcomes in complex systems" (p. 4).

Systems thinkers consider systems-thinking approach as highly relevant in problem solving and decision making in a world that exhibits characteristics of interconnectedness, uncertainties and complexities (Bellinger, 2004; Haines, 2000; Senge, 1990; Kauffman, 1990). Studies have also conclusively shown the advantages of using systems approach to enhance problem solving especially non-routine and poorly defined problems which to many are especially difficult and require multi-skills to solve them (Resnick & Wilensky, 1998; Resnick, 1996). Wilensky (1996) commented that one of the more

promising prospects is by integrating the system approach in all problem-solving activities.

Systemic approach that refers to systems thinking is regarded as one of the main approaches to problem solving (Douglas *et al.*, 2009). They viewed positively this approach as one that helps to understand problems holistically and is able to address many weaknesses of the reductionist approach. Goh and Xie (2004) had suggested the incorporation of systemic approach in problem solving to enhance the ability to tackle more complex and dynamic situations.

Problems should be regarded as systems. Components that form these systems could be identified. The interrelated of these components could then be analysed. Subsequently problems observed in the interrelatedness of these components are identified and tackled. In contrast to traditional problem solving, systems thinking as a systemic approach has the advantage over traditional problem solving in terms of the effort spent in understanding the interrelatedness, complexity and wholeness (big picture) of components of systems and the specific relationships to one another (Banathy & Jenlink (2004) as cited in Johnson, 2008).

Introducing systems-thinking skills into the activities of problem solving is believed to have some effects on the task of solving problem (Resnick & Wilensky, 1998; Resnick, 1996; Wilensky, 1996). Unfortunately, literature on the assessment of the effectiveness of systems-thinking

skills in problem solving is scarce (Maani & Maharaj, 2004; Sweeney & Sterman, 2000; Klieme & Maichle, 1991, 1994 as cited in Ossimitz, 1997; Ossimitz, 1997).

> Many claims have been made concerning the ability of systems thinking interventions to change the nature and quality of thought about complex systems. Yet, despite the increasing number of interventions being conducted in both educational and corporate settings, important questions about the relationship between systems thinking and basic cognitive processes such as problem solving, decision makes, remain unanswered. (Doyle, 1997, p. 253)

A study was carried out to look at the relationship between problem solving and systems thinking. For that purpose, two different scoring rubrics were constructed to quantify problem-solving and systems-thinking skills. This paper focuses on the findings related to the overall problem-solving and systems-thinking skills of the population of interest as well as the influences of three demographics factors – gender, program of study and academic performance. It also reports the association between problem-solving and systems-thinking skills.

PROBLEM SOLVING

The definition of problem solving owes its' origin to the work of Dewey (1910).

He had presented the analysis of an act of thought that relates problem solving as a felt difficulty where the problem solver needs to analyse the situation and makes suggestions of possible hypotheses of which the problem solver then acts on them and carries out an experiment to determine whether to accept or reject the solution. The central notion of problem solving is the goal, either explicitly or implicitly stated in the problem, where not knowing how to reach this goal without generating new information is what makes it a problem (Jonassen, 2002). One interesting phenomenon one can observe in the problem-solving models offered by the experts of the field is that the activity of problem solving is never a top-down or bottom-up or linear kind of task. This view is clearly put forth by Fernandez, Hadaway and Wilson (1994), in their interpretation of the problem-solving processes (see Fig.1).

Many studies into problem solving have focused on how different characteristics of learners from different socioeconomic backgrounds, preferences, and ability levels, in particular their academic performance and grade level, technology courses, mathematics and science grades, gender, personality preferences, and problem solving styles affect their problem-solving abilities (Custer, Valesey & Burke, 2001).

Gender-related differences in ability to solve mathematics problem, specifically, and in problem solving generally, is an actively researched topic and these studies produced mixed results. Some studies have found statistically significant gender-related differences in mathematics ability, especially in solving general (routine) type of problem, in favour of female (Lau, Hwa, Lau, & Limok, 2003; Mason, 2003; Zambo & Follman, 1993). In his study, Mason (2003) found that females, more than males, excel in problem solving because they believe in the importance of understanding why a particular procedure or algorithm works and not only relying on memorization for problem solving. Therefore, the former is not only less likely to fail but is also able to attained better grades than the later. Custer *et al*. (2001) on the other hand found that generally gender does not influence
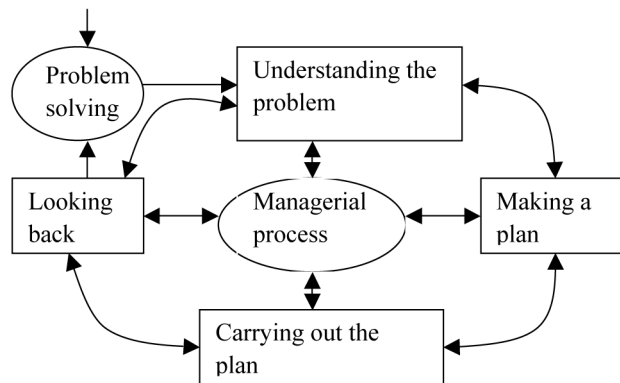
Fig.1: Problem-solving processes (Fernandez *et al*., 1994)

problem-solving skills.

Another factor of interest to problem-solving researchers concerns the question of the relationship between academic performance of the learner and problem-solving skills. Bay (2000) concluded that teaching problem solving and teaching via problem solving improve students' problem solving, skills, and concepts. It is no doubt that when problem solving is emphasized, the learners show improvement in their achievement. However, he was doubtful about the true nature of this relationship. Logically, the learner with good academic performance is always assumed and perceived by others, to be good at problem solving. However, research has shown that learners who perform well academically are not necessarily good problem solvers. Studies show that learners, who are reported as the best or bright students in mathematics, are unable to solve unfamiliar, be it the non-routine or routine, problems correctly and successfully (Lau *et al*., 2003; Davis, 1987; Schoenfeld, 1985).

SYSTEMS THINKING

Richmond (1993) had discussed seven basic systems-thinking skills. He (1997a) later classified them as 1) dynamic thinking which helps one to see behaviour that unfolds over time and deduce behaviour pattern rather than focus on events; 2) system-as-cause thinking which helps one to view system's behaviour pattern as the result of interrelatedness of elements within the system; 3) forest thinking that " … gives us the ability to rise above functional silos and

view the system of relationships that link the component parts" (Richmond, 1997c, p. 6); 4) operational thinking that helps ones to identify how behaviour is generated and not merely in terms of 'cause and affect'; 5) closed-loop thinking which enables one to be aware that an 'effect' usually feeds back to change one or more of the 'causes', and the 'causes' themselves will have effects on each other; 6) quantitative thinking that helps one to quantify what is thought to be difficult to measure accurately but contribute a lot to the success or failure of a system; and 7) scientific thinking that is used to make sure that the model developed is able to play its expected role for the purpose of improving its performance (Richmond, 2000). These seven skills have, since then, served as the 'operational' guide to systems thinking. Richmond (1997a) stressed emphatically that the numbering and the sequencing of the seven thinking skills reflects the notion that each skill builds on the previous one.

As hypothesized, performance in systems thinking can be influenced by the demographic characteristics of the respondents. Research on gender-related issues in the study of systems thinking is rather scarce. A study by Ossimitz (2002) was carried out to determine gender-related influence on the respondents' ability to discern between stocks and flows, a crucial systems-thinking skill. He reported that females scored significantly poorer than the males in this respect. Another study by Sweeney and Sterman (2000) was carried out on subjects where most of them were enrolled in post-graduate programs. They

intended to assess particular systems-thinking concepts and the demographic variables on their performance scores. Their findings showed some marginal gender effect with the males performing slightly better than the females on all their performance tasks although they reiterated that the effect was only marginally significant.

Sweeney and Sterman (2000) also reported that when their subjects' academic background on the performance tasks were taken into account, some of the questions in those tasks showed significant differences though no consistent pattern could be detected. The subjects' academic background in terms of their prior academic field and highest prior degree was significant and marginally significant for one of their performance tasks. The subjects with technical backgrounds were found to do better than those in the Social Sciences and Humanities in this particular task. The effect of the program of studies in which their subjects were presently enrolled was not significant in any of the tasks. To quote Sweeney and Sterman (2000), "The results provide only limited support for the hypothesis that prior training in the sciences helps performance. It is possible that there simply is insufficient variation in the subject pool to detect any effects" (p. 278).

RELATIONSHIP BETWEEN SYSTEMS THINKING AND PROBLEM SOLVING

It is possible to integrate problem-solving and systems-thinking skills as traditional problem solving activities already

exhibit systems-thinking characteristics (Gigerenzer, Todd, & ABC Research Group, 1999; Frensch & Funke, 1995; Richmond, 1993). Many researchers are convinced that instruction in the setting of problem solving with the integration of systems thinking does facilitate the cultivations of important thinking skills (Microworlds Inc. Brochure, 1997 as cited in Sweeney & Sterman, 2000). Systems thinking is said to be a more scientific problem-solving approach than the rational thinking approach (Shibata, 1998). Furthermore, he stressed that systems thinking is a very clear and useful method to solve problems.

Maani and Maharaj (2004) mentioned that there exists one apparent characteristic amongst good and poor performers of the respondents in their research. The good performer reflects the characteristics of systems thinking while those that do not perform well often exhibit the behaviour of linear thinking, the direct opposite of systems thinking. Richmond (1997b) referred to this counterpart of systems thinking as linear thinking or static thinking. This is supported by Dörner (1980) whose study found out that most people would not bother to seriously consider the existent trends and developmental tendencies of complex tasks in advance to solving them; in contrast, they are more interested in the 'status quo'. This explains the scarcity of systems-thinking trait in the traditional thinking of people who subscribe to linear thinking. Hence, it is not surprising that any individual, who displays the attributes of system thinking, even though they are

ignorant to systems thinking, do perform better on complex decision-making task (Maani & Maharaj, 2004). The behaviour of the more superior performers reflects the attributes of systems thinking. Maani and Maharaj (2004) concluded in their research that systems thinking when blended with the problem-solving strategies, "manifests the characteristics of heuristics competence, as it involves understanding of the system structure, developing strategies, making decisions and carefully assessing the outcomes" (p. 45). This result strongly indicates that systems thinking is highly correlated with problem solving.

METHODOLOGY

The following section describes participants, instruments and procedures involved in this study.

Participants

The population of this study consisted of all undergraduates of eleven diploma programs of studies in one of the campuses of a Malaysian public university. The respondents were categorized according to programs of studies, gender and their academic performance. To strengthen the university academic programs among faculties and within the faculty, this public university has grouped the students into three main categories of programs of studies, namely, Science and Technology, Business and Management, and Social Sciences and Humanities. The eleven diploma programs of studies identified for this study consisted of six programs from

the category of Science and Technology (Diploma in Science, Diploma in Computer Science, Diploma in Sports Science and Recreation, Diploma in Civil Engineering, Diploma in Electrical Engineering and Diploma in Estate Management), four programs from the category of Business and Management (Diploma in Banking, Diploma in Business Studies, Diploma in Office Management and Diploma in Accounting) and one program from the category of Social Sciences and Humanities (Diploma in Public Administration). For the academic performance, the respondents were grouped, based on their cumulative grade point aggregate (CGPA), as Poor (CGPA 2.00 – 2.49), Average (CGPA 2.50 – 3.49) and Good (CGPA 3.50 – 4.00).

Proportionate stratified sampling design was employed to select a sample size of 233 out of a total of 524 students. From the total number of respondents from each program, 20% was selected from the Good group, 60% from the Average group and 20% from the Poor group and where possible, equal numbers of male and female representatives were selected from each group. Simple random sampling technique was then used to select the respondents after the numbers from each group based on gender and CGPA were determined.

Instrument

The initial instrument had six performance tasks, namely The Water Jug Problem (Task 1), Achilles' Challenge (Task 2), The Hilu Tribe (Task 3), Causal Loop Diagram (Task 4), The Alps Hotel Tourists (Task 5)

and The Federal Budget of Fantasia (Task 6) to elicit eight systems-thinking skills: wholistic thinking, continuum thinking, thinking in models, leverage point thinking, structural thinking, closed-loop thinking, systems-as-cause thinking and dynamic thinking. This initial instrument was first validated using student focus group and then lecturer focus group. Changes made to the performance tasks based on the feedback obtained from both of the focus groups include taking out Task 1 as this was more for categorizing problem-solving styles instead of systems-thinking skills, taking out Task 2 as almost all of the focus group members were not able to solve it, customizing Task 6 to Family Monthly Expenditure which was more applicable to respondents from different categories of program of studies, reducing eight systems-thinking skills to five, namely dynamic thinking skill, system-as-cause thinking skills, forest thinking skill, operational skill and closed-loop thinking skill, as there were too many sub-skills involved, re-adjusting time given to answer the performance tasks and increasing clarity of instruction given to answer the performance tasks.

The revised instrument was later sent to two external experts in the field for validation. They were Professor Dr. Kambiz Maani from the University of Auckland, New Zealand and Associate Professor Dr. Guenther Ossimitz from the University of Klangenfurt, Austria. Maani (communication through email, 2004) commented that the instrument developed was good at gauging systems-thinking skills and the performance tasks developed were interesting and innovative and represented a good set of systems-thinking questions. Ossimitz (communication through email, 2004) advised the researchers to take out the Causal loop diagram task because this performance task was based only on causal loop diagrams and did not take into account the difference between stocks and flows and therefore would be subjected to more debate and argument. Ossimitz further suggested that some of the questions be rephrased. These comments were taken into considerations and the instrument was then finalized and used in this study.

This instrument consisted of one set of questions which was divided into two parts. Part A consisted of six questions to gather demographic information whereas Part B consisted of five questions. The first question in Part B was to test the respondents' understanding in graphs as the ability to understand graphs correctly could suggest the proficiency of problem-solving and systems-thinking skills of a respondent. The other four questions were the performance tasks used to determine the problem-solving and systems-thinking skills of the respondents. The four performance tasks namely Graphs of Behaviour over Time, The Hilu Tribe, The Alps Hotel Resort and Family Monthly Expenditure, adapted from the works of Ossimitz (2002) and Robertson (2001) were used to elicit the problem-solving and systems-thinking skills from the respondents. (Please refer to Appendix 1 for an example of performance task.)

PROCEDURES

Scoring of problem-solving skills

Assessing cognitive processes is a complicated and difficult task. It is not easily measured through tests, quizzes, or teacher observation. Assessing the outcomes from well-designed performance tasks would be a simpler and more objective alternative. This approach has found support with Mcguire (2001). Many versions of the problem-solving model are proposed to suit the different contexts and environments where it is applied (Fernandez *et al*., 1994; Holton, 1993; Artzt & Armour-Thomas, 1992; Evans, 1992; D'Zurilla & Goldfried, 1971; Simon, 1960; Dewey, 1910). Thus, the approach to measuring problem-solving skills can range from simple but less effective method to highly complex techniques.

This study chose to use a simple but less comprehensive measurement of the problem-solving skills. The rationale here was that since systems-thinking skills at this moment could only be assessed with a simple point-allocated scoring rubric, then problem solving should be gauged using the same level of assessment so that the comparison between the two skills is meaningful. Following this line of argument, a simple point-allocated scoring rubric was created to measure the problem-solving skills of the respondents.

Scoring of systems-thinking skills

The framework for measuring systems thinking in this research was based mainly on the literature review of the works of Richmond (1997a, 1997b & 1997c), Ossimitz (2002) and Maani and Maharaj (2004). The focus here was on the first five of the seven essential systems-thinking skills. The last two skills are more relevant to system dynamics modelling efforts (Maani & Maharaj, 2004). Each of these essential systems-thinking skills was then divided into sub-skills. Skills and sub-skills were carefully worded in the explicit form to reduce subjectivity on the part of the evaluators. These were reviewed by an expert with extensive knowledge of systems thinking. With the guidance afforded by this framework, the construction of a scoring rubric or marking scheme was then constructed.

An analytic rubric was used here as the categories of skills and sub-skills that were to be graded were clear-cut. The sub-skills of the five essential systems-thinking skills were carefully worded for all the four performance tasks. For each correct sub-skill, a certain point was given to it. This point-allocated sub-skill was found to be very useful in determining whether specific criteria had been met for each of the systems-thinking skills in each performance task. (Please refer to Appendix 2 for the systems-thinking skills and sub-skills mentioned here.)

Pilot survey

Thirty students from eleven diploma programs were selected to answer the performance tasks for the pilot survey. The pilot survey was carried out to evaluate the suitability of the instrument and also

the effectiveness of the procedures. The students were given one hour and 45 minutes to answer all questions in Part A and Part B. From the result of the pilot survey, some amendments were made to the questionnaire which include taking out CGPA score of 0.00 – 1.99 because there were too few students falling under this category. The time allowed to answer the questions was then reduced to 1 hour 20 minutes as this duration was found sufficient for the students to answer all of the questions.

Data collection

The data was collected through two paper-and-pencil test sessions. Respondents who could not make it for the first session came for the second session. The respondents were gathered in a lecture theatre to answer both sets of questions. The respondents were given one hour 20 minutes to complete the questions in Part A and Part B. A total of 237 students turned up for the actual survey. The first session was attended by 160 students whereas the second session was attended

TABLE 1
Comparing statistical significance between problem-solving scores and systems-thinking scores

	Mean Score		95% Confidential Interval of Mean		Standard Deviation		Statistical test result	
	Problem-solving skills	Systems-thinking skills	Problem-solving skills	Systems-thinking skills	Problem-solving skills	Systems-thinking skills	Problem-solving skills	Systems-thinking skills
Gender								
Male ($n = 103$)	26.26	23.65	24.06-28.45	21.74-25.56	11.21	9.77	$t = -0.684$, $p = 0.495$	$t = 0.202$, $p = 0.840$
Female ($n = 130$)	27.22	23.41	25.43-29.02	22.02-24.80	10.35	8.02		
Program of studies								
Science and Technology ($n = 82$)	28.92	25.87	26.53-31.32	23.98-27.76	10.88	8.59		
Social sciences and humanities ($n = 29$)	26.16	22.23	22.32-30.00	19.13-25.33	10.10	8.14	$F = 2.543$, $p = 0.081$	$F = 4.500$, $p = 0.012*$
Business management ($n = 121$)	25.52	22.31	23.60-27.44	20.71-23.91	10.66	8.86		
Academic achievements (CGPA)								
2.00 – 2.49 ($n = 45$)	23.43	21.24	20.36-26.50	18.62-23.86	10.22	8.72		
2.50 – 3.49 ($n = 156$)	26.72	23.29	25.10-28.34	21.92-24.66	10.25	8.65	$F = 6.096$, $p = 0.003*$	$F = 5.554$, $p = 0.004*$
3.50 – 4.00 ($n = 32$)	31.90	27.81	27.58-36.21	24.74-30.89	11.97	8.52		

by 77 students. Four sets of answers were discarded due to missing values.

RESULTS AND DISCUSSION

The following section reports the findings of this study regarding the problem-solving skills and the systems-thinking skills exhibited by the respondents and the relationship between these two skills.

Problem-solving Skills and Systems-thinking Skills

Data collected was keyed-in by the researchers. Exploratory data analysis was subsequently run to detect errors in the keying-in process as well as observe for outliers. The mean scores were calculated for the different categories of skills based on the three selected demographic factors.

The average score for each set of skills was calculated using the arithmetic mean. In the analysis, each respondent was awarded two scores – one for problem solving and another one for systems thinking. Take for example in deriving the mean score of problem solving for the male cohort, an average score of 26.20 was calculated based on a sample of 103 male respondents. The same calculation was carried out for the system thinking scores. The table below contains the mean scores based on the three demographic factors.

Mean scores of problem-solving skills between groups based on gender, program of studies and Cumulative Grade Points Aggregate (CGPA) (academic performance) scores

As presented in Table 1, the performance of the female respondents in solving the performance tasks was slightly better than the male respondents. Nevertheless, this difference was not statistically significant ($t = -0.684$, $p = 0.495$).

Among the various programs of studies, it was found that the respondents from Science and Technology programs had the highest mean score (28.9%) followed by respondents from Social Sciences and Humanities program (26.2%) and respondents from the Business and Management programs (25.5%). After considering all the assumptions, the ANOVA analysis showed that there was no statistically significant difference in the mean score for problem-solving skills ($F = 2.543$, $p = 0.081$).

When academic performance background of the respondents was taken into account, the result showed that the performance of the respondents with higher CGPA were better than those in the lower CGPA. The respondents with CGPA 3.50-4.00 reported the highest mean score (31.9%) followed by those with CGPA 2.50-3.49 (26.7%) and CGPA 2.00-2.49 (23.4%). Further analysis using ANOVA showed that there exist a statistically significant difference in their problem-solving skills mean score ($F = 6.096$, $p = 0.003$). Due to unequal sample sizes of these three CGPA groups, Scheffé post-hoc test was then

carried out. It was found that there was no statistically significant difference in the mean scores obtained by respondents with CGPA 2.00-2.49 and 2.50-3.49. However, there exist statistically significant difference in the mean scores obtained by respondents with CGPA 2.00-2.49 and CGPA 3.50-4.00.

Mean scores of systems-thinking skills between groups based on gender, program of studies and Cumulative Grade Points Aggregate (CGPA) (academic performance) scores

As presented in Table 1, the mean scores for systems-thinking skills of the female respondents (23.6%) did not show much difference with their counterpart (23.4%). This was further proven by the *t*-test result which showed that there was no statistically significant difference between the means scores obtained ($t = 0.202$, $p = 0.840$).

When the program of studies of the respondents was used as the basis for comparison, the result showed that the respondents for the programs of Science and Technology scored the highest (25.9%). The mean scores of systems-thinking skills obtained by respondents for the programs of Social Sciences and Humanities and programs of Business Management were similar – 22.2% and 22.3% respectively.

After considering the normality of the data set and the homogeneity of variances ($p = 0.879$), the ANOVA analysis showed that there was a statistically significant difference in the mean scores obtained ($F =4.500$, $p =0.012$). Further analysis using Scheffé post-hoc test found that there was a statistically significant difference between

the mean scores of systems-thinking skills for respondents from the Science and Technology programs and the respondents from the Business Management programs.

When the academic performance in terms of CGPA of the respondents was used as the basis for comparisons, the result showed that respondents with higher CGPA were able to obtain better scores. The respondents with CGPA 3.50-4.00 obtained mean scores of 27.8%, whereas the mean scores for respondents with CGPA 2.50-3.49 and CGPA 2.00-2.49 were 23.3% and 21.2% respectively.

After verifying the normality and homogeneity of variance for the data set, analysis using one way ANOVA showed that there was a statistically significant difference between the mean scores obtained by respondents with different CGPA ($F = 5.554$, $p = 0.004$). Further analysis using Scheffé post-hoc test found that there was a statistically significant difference between the mean scores obtained by respondents with CGPA 2.00-2.50 and those with CGPA 3.50-4.00. Similarly, the difference was also statistically significant for those with CGPA 2.50-3.49 and CGPA 3.50-4.00. However, the test showed no statistically significant difference between mean scores of respondents with CGPA 2.00-2.49 and CGPA 2.50-3.49.

RELATIONSHIP BETWEEN PROBLEM-SOLVING SKILLS AND SYSTEMS-THINKING SKILLS EXHIBITED

The scatter plot in Fig.2 clearly depicts a linear, positive and moderately strong
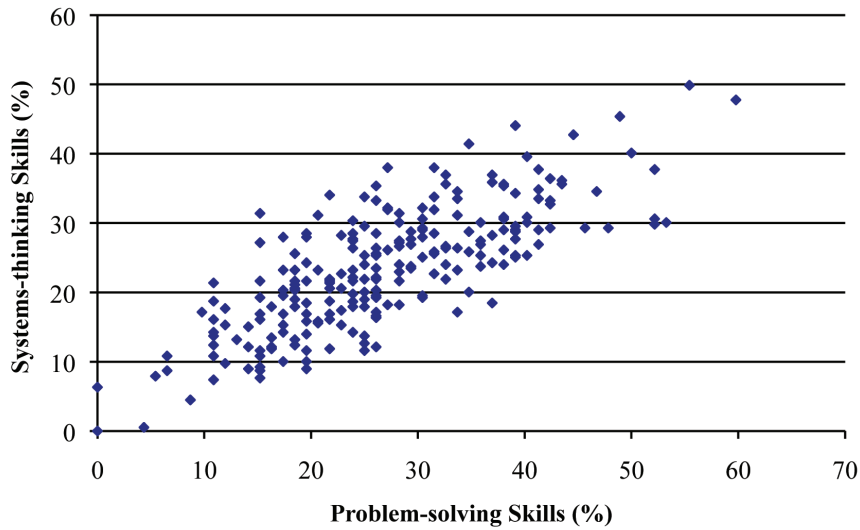
Fig.2: Scatter plot of scores for problem-solving skills and systems-thinking skills

correlation. The result was supported by the Pearson Product Moment Correlation, with r = 0.776 and p = 0.0001. This implies that if the respondents have good problem-solving skills, they also have good systems-thinking skills and vice versa.

CONCLUSION

One major area of concern in our present education system is the students' problem-solving ability (Robertson, 2001; Schoenfeld, 1999; Resnick, 1996; Duncker, 1945). Problem solving, a generic employability skill, is an indispensable skill one must possess to function effectively in the workplace. To facilitate the acquisition of this skill, it is hypothesized that systems thinking can play a leading role in the attainment of this potentially invaluable ability. This study aimed to determine if such an association exists between problem solving and systems thinking.

Findings from the study indicated that the targeted population of diploma students performed poorly for both problem solving and systems thinking in the four performance tasks. The mean score for systems-thinking skills was found to be lower than that of problem solving. The low mean scores were expected as the four performance tasks were non-routine problems and the structure of the tasks were new to the respondents.

In addition, analyses were performed to determine if the three selected demographic factors affected the skills studied. It was found that problem solving was not affected by gender and program of studies whereas CGPA did influence problem solving ability. On the other hand, systems-thinking skills showed no dependency with respect to gender but systems-thinking skills were affected by program of studies and CGPA. The influence of these factors on both systems thinking and problem solving is

inconclusive as similar results were reported in other studies attempting to determine whether gender, academic achievement and program of studies influences the acquisition of these skills (Lau *et al.*, 2003; Mason, 2003; Custer *et al.*, 2001; Bay 2000; Ossimitz, 1997; Zambo & Follman, 1993; Davis, 1987; Schoenfeld, 1985).

This study also identified an association between problem solving and systems-thinking skills with a Pearson Product Moment Correlation of 0.776. This index implies that those who exhibited good problem-solving skills, also possessed good system-thinking skills.

This finding should be of major interest to the education fraternity at large because this study actually found evidence to support the contention that systems thinking is associated with problem solving. This link has been espoused by many systems thinkers but no empirical evidence was given to support their claims (Maani & Maharaj, 2004; ~~Kieff, 2000;~~ Resnick & Wilensky, 1998; Doyle, 1997; Resnick, 1996; Wilensky, 1996). The significance of this finding lies in exploring new approaches to the teaching of problem solving in the classroom. As Jonassen (2002) explained a problem solver faces obstacles when he/she fail to generate new information from the information at hand. A good systems thinker on the other hand has an array of skills that promotes the use of information in its varied forms to generate new information that can assist him/her to overcome the obstacles mentioned above.

This study has one clear limitation, that is, no causal relationship could be determined using the present research design. In other words, the exact nature of the relationship between problem-solving skills and systems-thinking skills was not determined. Once this fact is established, only then can we move on to look at a paradigm shift by situating a meaningful and successful problem-solving learning environment within a systems-thinking framework. Although this study had not addressed the objectives comprehensively, it certainly is a good start in the right direction towards determining a causal relationship between problem solving and systems thinking. There is much work to be done in exploring further the nature, impact and efficacy of systems thinking in solving non-routine, knowledge-lean and complex problems.

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APPENDIX 1
EXAMPLES OF PERFORMANCE TASKS AND SYSTEMS-THINKING SKILLS

Graphs of Behaviour over Time

Direction: The graphs below illustrate the behaviour of a certain population over a period of time. These behaviours are described in the stories found in the answer booklet. Firstly, match the stories with the appropriate graphs. In addition, label the **x-axis** and the **y-axis** of the graphs in the space provided. For example the x-axis in the graph below stands for "time", you could label the x-axis as "year" or "month" depending on the story. If you **do not understand** the graphs , write "**don't know**".

Match the stories with the graphs given.
2.1   The Story :

The Giant Tortoises of the Galapagos Islands live for well over 100 years. A female can lay 4-5 batches per season, usually between June and December. The eggs hatch 4-5 months later. A group of botanists was studying the population growth for 2 years. Assuming there is no death for the whole duration of the study, which graph accurately shows the population growth of these tortoises?

ANSWER:
GRAPH _____
x-axis :   _____
y-axis :   _____

2.2   The Story:

THE ELEPHANTS OF AFRICA live in vastly varying environments of the continent, from the rain forests of the Congo Basin to the savannahs of Namibia. On one occasion, a viral infection spread rapidly among a group of African elephants. The virus caused a rapidly progressing and severe disease which finally results in death of the animal within weeks. Assuming there is no birth during the period of infection, which graph shows what happened to the population of this group of elephants?

ANSWER:
GRAPH _____
 x-axis :   _____
y-axis :   _____

A.

D.

B.

E.

C.

F.
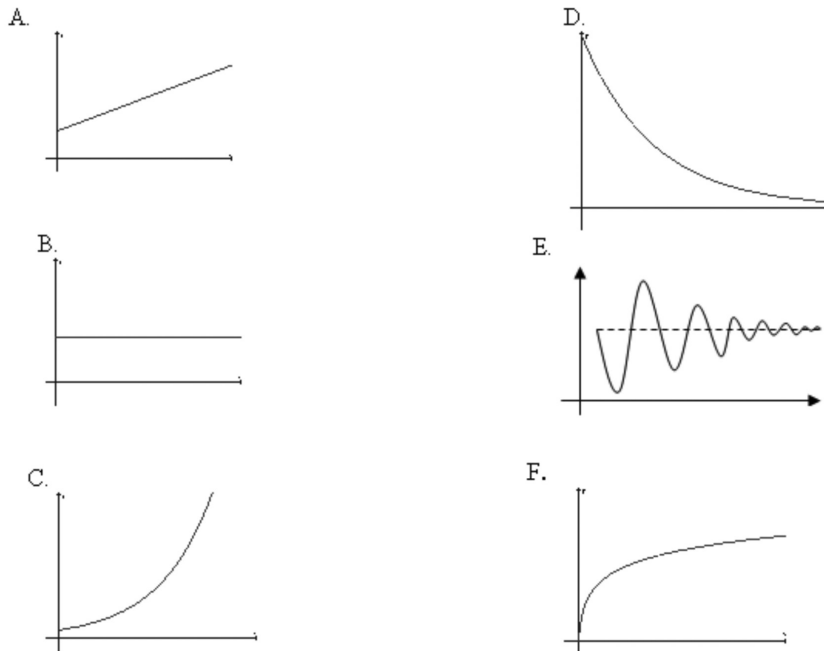
APPENDIX 2
LIST OF SYSTEMS-THINKING SKILLS AND SUB-SKILLS

Systems-thinking Skill	Sub-skills
a. Dynamic	See changes over time as being non-linear. To be aware of stock and flow variables. To understand and be aware of time delays. Able to use the correct time units (in min / hour / day / month / year). To see time continuities within the web of interdependencies.
b. System-as-cause	To identify the boundary of the system under study. To identify which variables are completely/partially under control. To determine the possible explanations for the behavior identified.
c. Forest	To see the links that connect the different elements of the system. To identify the causal links that may exist between its members. To determine the 'breadth' and 'depth' of the system's boundary. To identify new properties emerging from the interactions of its components. To filter through all the variables and keeping only the most essentials. To identify what structures/ infrastructures that are causing the behavior. To seach for similarities in a 'heap' of elements that might be seemingly unrelated and distinct.
d. Operational	To determine how behavior is generated through interdependency. To identify causality and not only correlation/ influence. To identify the stock and flow infrastructures. To maintain units of measure integrity in a system.
e. Closed-Loop	To link the different variables of interest to form feedback loops. To be aware of both intended and unintended consequences.

Stigma as Part of Identity Development of Gay Men in Penang – A Qualitative Study

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ABSTRACT

Background: The sexual identity of gay men is placed as the polar opposite of heterosexuality and as such is studied as a deviance from the norm. This study is focused on the experience of stigma by gay men in Penang as part of identity development. **Method:** A total of 33 gay men were identified using the snowballing method. Qualitative data via in-depth interviewing was the method of data collection. Respondents signed a consent form approved by the Ethics Committee of Universiti Sains Malaysia, Penang, Malaysia. Each respondent was then given a pseudonym to ensure confidentiality of the respondents' identity.. Each respondent was interviewed separately at a date, time and venue of their convenience and were asked identical open ended questions. Each interview was audio recorded, transcribed and analysed using content analysis matrix. **Results:** Stigma had positively or negatively affected the sexual identity of the respondents interviewed. At best stigma brought respondents' strength and courage and at its worst, it has brought out fear and recrimination. The common types of stigma reported by respondents were name-calling, the creation of "in-group" and "out-group" situations, bullying (being ridiculed) and religious prejudice. The stigma faced by the respondents had not resulted in activism and to an extent forced some of the respondents to conform (at least when in public) to society's expectations. **Conclusion:** Stigma had assisted in the development of sexual identity of the respondents. Sadly, it is stigma and not a more positive experience of socio-cultural interaction that had assisted in the development of sexual identity.

Keywords: Bullying, Gay Men, In-group, Out-group, Sexual Identity, Stigma.

INTRODUCTION

Gay men continuously face stigma (D'Augelli, 2003; Duran *et al.* 2007; Herek *et al.* 2010; Savin-Williams *et al.*, 2010; TreatAsia, 2006). Incidents

of such stigmatization have been rarely recorded in the Malaysian context although homonegativity exists within the Malaysian culture (Baba, 1995, 2001, 2002, 2006; Scoville, 2004). This study is focused on the experience of stigma by gay men in Penang as part of sexual identity development. Sexual identity is understood here as the development of the individual gay men based on the understanding that his same-sex sexual attraction differentiates him from most of his peers (Dowsett, 1996). Sexual identity encapsulates eroticism, fantasy, affection and attraction for members of the same sex. Sexual identity also includes the development of a personal frame of reference and how the self is viewed through this personal frame of reference. This in turn leads to feelings of self-worth, confidence and self-acceptance or the opposite of these qualities (Sylva *et al*., 2010). This narrative would add further understanding to the socio-cultural experience of this part of the Malaysian population.

LITERATURE REVIEW

Dowsett (1993, 1996) states that the sexual identity of gay men is placed as the polar opposite of heterosexuality and as such is studied as a deviance from the norm. Glick *et al*. (2007) saw effeminate gay identities as threats to heterosexuality (while masculine gay identities were not viewed as much as a threat). Wilkerson, Ross and Brooks (2009) note that heteronormativity also constructs the sexual identity of gay men as it gives a polar opposite to what is considered "acceptable" sexual identity in many cultures. With this, gay men may experience sexual identities that either confirms this polar opposite of heteronormativity or construct sexual identities that display heteronormative behaviours verbally and non-verbally in order to avoid stigmatization (Sylva *et al*., 2010).

Stigmatization comes from non-acceptance of feminine traits and/or behaviours in men, simply meaning that men who exhibit effeminate behaviour or caring and nurturing characteristics will face stigmatization (Parrot, Adams & Zeichner, 2002). With such expectations of heteronormativity comes homophobia, the irrational fear of homosexuality. Homophobia can also construct the sexual identity of gay men via "in" and "out" group positions based on social, cultural and religious expectations (Duran *et al*., 2007; Savin-Williams *et al*., 2010). Homophobia, whether internal, interpersonal or institutional can lead to isolation, bullying, violence and lack of access to support lead to depression, lack of impulse control and despair (Dyson *et al*., 2003).

TreatAsia (2006) notes that in almost all countries in Asia and the Pacific, male-male sex and gay sexual identity is still heavily stigmatized even in the countries where consensual sex between adult men in non-public places has been decriminalized as in Australia, Hong Kong, and New Zealand. Many countries, particularly former British colonies, including Bangladesh, India, Malaysia, Pakistan and Singapore, still have laws that criminalizing same sex sexual activity. Other countries, including China

and Japan, never had laws criminalizing homosexuality.

Regardless of whether same sex sexual relations are criminalized or not, socio-cultural and religious mores support the condemnation of, and the discrimination and prejudice against homosexuality. For example the practice of Islam in Bangladesh and Indonesia, Catholicism in the Philippines, Christianity in New Zealand and cultural traditions and norms in China Hong Kong and India all appear to be contributing to the marginalized status of gay men (TreatAsia, 2006). The gist of the information above is that gay identities in Asia and the Pacific have a historic and cultural significance. These gay identities have played out into the present day as gender, sexual identity and sexual preference are part of human sexuality. However, acceptance of this is not wide in many societies and often stigma of and discrimination against gay sexual identity takes shape in the form of homophobia.

Homophobia is defined as explicit hostility or prejudice toward gay men and women (Herek, 1986), irrational fear or intolerance of homosexuality or homosexual persons (Herek, 1986), and a pathological fear of homosexuality and a fear of HIV which causes AIDS (Bouton et al., 1987). According to Schwanberg (1993) the dread of being in close proximity to homosexuals brings out highly aggressive feelings in heterosexual men. Ryan (2003) as well as Kessel and Knowlton (2005) concur with these findings and also note that many writers have affirmed that homophobia

(in its entire spectrum) has roots in social norms and gender roles (as well as the roles of women); and can have various manifestations, e.g. physical, verbal or attitudinal.

D'Augelli (1998) has found that antigay attacks include being called names, not having a person to open up to and being found out as being homosexual. Antigay attacks can also happen within families and these take the form of ridicule, rejection, loss of physical and monetary support, verbal and physical violence. Antigay attacks also take the form of hate crimes (Franklin, 1998) such as being chased or followed, objects thrown at victims, physical assault, vandalism, being spat on and assault with a weapon. Jenkins (2004) makes the point that homophobic violence also has become a kind of performative masculinity, almost a rite of passage, with most such acts carried out by young men in groups. This frequently happens in nations where gay activism is escalated and that Malaysia is one nation in which homophobic events have taken place (Jenkins, 2004).

Sexual identities and behaviours attract a great deal of attention in Malaysia, and sexually normative behaviour is expected in a conservative Asian society. As such gay men face definite challenges in Malaysia as gays exist in Malaysia even though at present they are not socially and politically accepted (Baba, 2001, 2002). Historically however, male-male sexual identity and sexual behaviour have existed in Malayo-Polynesian culture. According to Dr Farish Noor of Nanyang Polytechnic University,

Singapore, the ancient stories of Prince Panji (circa 13th to 17th century AD) prove that same-sex relationships existed in the region (Lee, 2008). Even as recent as the 1950s, transsexuals were accepted as Mak Andam (wedding organizers), "joget" dancers, cooks and artistes (Teh, 2002). However, the return of Malaysia to the fundamentals of Islam have changed acceptance of Malaysians of alternative sexualities, forcing them into hiding and facing persecution. In general Malaysia has not been very positive to responding to gay and lesbian related issues.

The present situation according to Baba (2001) is that a lack of positive role models (socially, politically and in the media), anxiety in identity portrayals and discrimination lead to discomfort with sexual identity among Malaysian gay men. Stigmatization and rejection also lead to discomfort with sexuality in the Malaysian gay male population. Baba (2002) adds that "(N)egative portrayals of homosexuality do not help gay men feel comfortable with their sexuality". Add to this that non-representation and the banning of gay sexual identities in the Malaysian media in 1994 has obliterated all references to gay sexuality (UNAIDS, 2004; West, 1997; Winder, 2006) the present situation is one where sexuality of gay men in Malaysia has no point of reference.

Terms for referring to the sexual identity of gay men in Malay are usually derogatory and denote men who are effeminate ("*bapok*", "*kedi*", "*pondan*", "*darai*") (Baba, 2001). On top of having their sexual identity

defined in derogatory terms, Malaysian men who admit to a gay sexual identity and engage in same-sex sexual activity in Malaysia face not only societal disapproval but also legal persecution. Legal persecution can be pursued via use of Section 377A of the Penal Code which prohibits sodomy (anal intercourse) and "gross indecency" with punishments including up to twenty years in prison (The Commissioner of Law Revision Malaysia, 2006; Scoville, 2004). Clearly, gay sexual identity is not easily accepted in Malaysia and gay men face stigmatization by whom?.

RESEARCH QUESTION

Stigma is a social phenomenon that is experienced. Being "branded" as unacceptable often leaves gay men at odds with their social experience (Jenkins, 2004, 2006). The question raised by this study is: "What has been the experience of stigma by gay men in Penang as part of identity development"? As stigma is a social phenomenon a narrative approach is necessary to understanding the experience of stigma by gay men. As gay men fear stigma and are hidden, a qualitative as opposed to quantitative approach is taken to gaining data.

METHODOLOGY

A total of 33 self-identified gay men were interviewed using the in-depth interviewing method of data collection. By "self-identified gay men", this research seeks out men who only have sexual relations

with other men and who do not perceive themselves as heterosexual, bisexual or transsexual (Jenkins, 2004), whose sexual attraction is only directed to other men (The Naz Foundation (India) Trust, 2001) and who are categorized as Type 1 Open Preferential Homosexuals by Hewitt (1998). The respondents were gained via the snowballing method. All respondents were given pseudonyms to protect their identity and signed a consent form to secure their participation. Each respondent was posed with the question "How has stigma affected your sexual behaviour"? Interviews were audio recorded and transcribed to form primary data. The primary data was qualitative in format. Primary data was analysed using a content analysis matrix. The content analysis matrix is a simple matrix of rows and columns where each respondent's responses were recorded and then compared and contrasted for recurring experiences and themes in an orderly fashion. The example of the content analysis matrix used can be found on the following page.

I.   Content Analysis Matrix

Section: Stigma and identity			
Question: Can you please describe the stigma you have experienced as a gay man.			
Res	Data	Analysis	Overall
1.			
↓			
33			

RESEARCH FINDINGS

A total of 33 respondents were interviewed for this research. The total number was reached as the information gained from the interviews had reached the point of theoretical saturation. All respondents met the criteria of being gay men (Hewitt, 1988; Jenkins, 2004; The Naz Foundation (India) Trust, 2001) who are Malaysian citizens who reside in Penang. All respondents have been sexually active within the past 12 months. All respondents only reported having sex with men. The respondents ranged from 21 years of age to 55 years of age. Of the respondents, fifteen were Chinese Malaysian, ten were Bumiputra Malaysian, four were Indian Malaysian, two were Eurasian Malaysian, one was of Chinese-Thai descent and one was of Kadazan-Murut descent. The occupations of the respondents included university/college students, entrepreneurs and professionals. Respondents were also employed as executives of various multi-national corporations (MNC), hoteliers and engineers. One of the respondents is retired from employment and two of the respondents are involved in sex work. Of the respondents, 30 lived on the island of Penang and three lived in Seberang Perai, location. The experiences narrated below are the most descriptive and vivid of the 33 interviews.

Jack[1] reported the stigma he faced as being treated as an outcast, being called names and not being accepted for who he is by heterosexual peers and heteronormative society. He was treated as the "black sheep" of his family and this gave rise to many

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[1] Pseudonyms are used for all respondents in order to keep privacy, confidentiality and security as per the Consent Form signed by all respondents.

tense situations within family discussions and gatherings where his sexuality became the bone of contention, ridicule and family condemnation. He was considered a "black sheep" because he did not fulfil the obligation of a Chinese son to get married to a woman who would give birth to sons who would perpetuate the family name. He was called names such as "queer" by his peers and this also created many tense situations for him as he was considered an "outsider" by many of his contemporaries who went so far as to ostracize him from social gatherings and extra-curricular activities. Non-acceptance by a society with heteronormative expectations made him fearful of repercussions such as the verbal abuse of name calling and continued ridicule by his family. However, this non-acceptance by family members and peers also urged him to look at things from a different perspective and to see these experiences as challenges to better himself as an individual. This strengthened his identity as a gay man.

Ivan experienced stigma in the form of gay men being equated with HIV/AIDS by heteronormative society. This equation was made in his presence, sometimes by his family but most often by his peers in school, college and the working environment. He found that when he was suspected of being gay by his peers in secondary school, he became the butt of jokes and the object of ridicule. His peers often called him names such as "*Ah Qua*" (homosexual in the Cantonese Language) and would make snide remarks about his buttocks and how often it had been used for penetrative anal

sex. He had managed to keep his identity as a gay man hidden from his parents as he feared the rejection of his parents, which as a person of Chinese descent is something he could not deal with. This was because as a son in a Chinese family he was expected to marry into a respectable family and produce male offspring who would carry on the family name. When he was in college pursuing a degree he was bullied, laughed at and jeered at due to his flamboyant fashion choices. This caused him to "tone down" his choice of flamboyant clothes (singlets, tight-fitting jeans, bright coloured t-shirts and bright pieces of jewellery). However, he found that even when he "toned down" his choice in flamboyant clothes his identity as a gay man became stronger as his sexual identity became more internalized and less expressed externally.

Anwar was stigmatised by name calling and jeering by his heterosexual contemporaries. He was often called "bapok" and "pondan" by them (provide similar English language synonyms). He had learned not to care about the name calling and he developed a tougher stance of believing that his gay sexual identity was a valid expression of himself as an individual and that he did not have to take the name calling and jeering seriously at all. As a soft-spoken man he often feared that the name calling and jeering would take on a physically hostile dimension (such as beatings) but had thus far not experienced any sort of physical abuse. He made it a point to avoid being in groups that were comprised fully of heterosexual men as

he feared that as an "outsider" he would potentially face not just rejection but also physical abuse. As a Muslim he also felt pressure to conform to Muslim society's expectations that homosexuality was a sin and he should therefore make efforts to develop heterosexual sexual attractions. As such, to avoid stigma within Muslim society he made it a point to not draw attention to himself, preferring to keep to his small circle of friends and to remain silent and acquiescent in formal gatherings of Muslim men. Still, he felt that as a gay man being part of the "out group" helped him further define his sexual identity.

According to Ahmad, when his peers and contemporaries found out about his identity as a gay man, they distanced themselves. They distanced themselves on the basis that they did not approve of him having same-sex sexual partners. His peers believed that to be a "true man" he ought to have an interest in the opposite sex and his sexual interest in other men relegated him to the position of an "outsider". This "in-group" and "out-group" situation caused Ahmad sadness, but he felt that he had to be true to himself and thus had to accept the loss of his friends. Being part of the "out group" helped him solidify his identity as a gay man, that being true to himself was more important than the shallow acceptance of his peers.

Kamal faced stigma from his community that is based on religious conviction. The religious conviction is that those who have a gay sexual identity ("out-group") are not considered the people of the Prophet Muhammad S.A.W. ("in-group"). He was also told that men who have a gay sexual identity are not part of "the correct way of life" thus further consolidating the "in-group" and "out-group" situation. Despite this he had not allowed his sexual identity as a gay man to be affected negatively. He did not believe that he had to conform to the expectation of others in order for him to accept himself or to have a productive and happy life.

Azam had been called names like "faggot" (a derogatory term for men with a gay sexual identity) and "gay". He found that stigma began for him after he came out to some of his classmates in Secondary School. His school mates began calling him the derogatory names previously mentioned and began to keep a distance from him. At the time of the interview he had not faced any physical abuse. Facing all these instances of stigma made him braver in his gay sexual identity.

Hafiz faced stigma in the form of being made a fool of. He used the terms "*kena kantoi*" (being made the butt of practical jokes) and "*disindir*" (belittle) to describe in general his experiences of stigma. He felt hurt when he experienced all of this but the instances of stigma have buoyed his belief in himself as a gay man. He felt that his sexual identity as a gay man became more valid to himself after these experiences of stigma.

Iskandar does not feel that he cannot belong to any group of people and has tried to be friends with heterosexual men but they rejected his overtures of friendship on the

basis of his gay sexual identity. They could not accept him as a gay man and rebuffed all attempts at friendship. The main form of stigma he faced was the distancing of friends who did not want to be thought of as gay by association. However he found that this stigma had not affected his sexual identity in that it did not dissuade him from being honest with his same-sex sexual attraction and being true to his "*naluri*" (natural instinct).

Dennis reported that stigma is associated to homosexuality and considered as a taboo in Malaysia.. He experienced name calling but this did not adversely affect his gay sexual identity. The most painful stigma he had experienced was from his own family. When his parents (through invasion of the privacy of his private journal) found out he was gay his mother lamented that he was not a filial son. His father caustically said that if he was gay he would end up "selling his backside" (engage in sex work where he was the receptive partner in penetrative anal sex) and ultimately die of AIDS-related complications. Dennis shared that because of this experience he worked hard to be successful in secondary school, university and ultimately in his career to prove his parents wrong. He also shared that now he cared for his parents materially and emotionally (thus proving his filial piety) and that his successful career did not require him to resort to sex work. He noted that his relationship with his parents was stable and his sexual identity was no longer an issue of contention – in fact it was the catalyst for open communication within the family communication dynamic.

Being in the "out-group" did hurt the gay sexual identity of Tan and he was called "abnormal" to his face. This led him to being very careful whom he told about his same-sex sexual attractions. He found that stigma negatively affected his sexual identity as it had made him afraid of being attacked and labelled negatively by society. He felt it was necessary for him to hide his sexual identity as a gay man from his family as his family was traditional and old fashioned. Due to this he felt they would not understand nor accept his homosexuality and identity as a gay man.

Stigma made the gay sexual identity of Foo stronger in that it made him stand up to people who had called him names or ridiculed him for being a gay man. He has told people who are homophobic that they had better hope their own sons or grandsons do not turn out to be gay and be subjected to what he had been subjected to. For Foo, his sexual identity is not only about his same-sex sexual attractions but also being able to stand up to life's challenges as an individual and as "a man".

Kenny found it hurtful when stigma took the form of jokes against gay men. He did not understand why it was unacceptable to make jokes based on race and religion but it was acceptable to make jokes based on sexual identity. As a gay man he felt that when he heard these jokes it hurt him, but it would not deter him from being who he is as a gay man. He noted that despite such challenges he would continue to be honest with himself, even if it had strained the relationship between him and his father.

The stigma of illegality of homosexuality in Malaysia affected Wong personally and made him more careful at his workplace to ensure that stigma did not affect his career. He did not want to be passed over for promotions, travel opportunities and escalating remuneration because of the stereotypes and stigma of society towards gay men. As a gay man he found that stigma towards gay men made him uncomfortable and it made him want to hide his identity.

Stereotypes of men with gay sexual identity affected Rama as it caused people to look down on him. He found that society in general tended to stereotype him and "box" him into effeminate behaviour and also that as a gay men he would sexually prey on unsuspecting heterosexual men. He disliked the suspicions that people had about him just because he was a gay man. He shared that no matter the amount or type of stigma that was levelled at him he could not change who he was; so despite the stigma he faced he had accepted his identity as a gay man.

Mike reacted offensively toward stigma, and since the stigma levelled against him was verbal his offensive was also verbal in nature. For example if he was called names he would turn to the person who called him names and scold the person. He would also if necessary use a louder volume in his verbal offensive and if necessary make a show of physical strength such as pushing away a chair or any other objects within his reach. Instances of such stigma made him more daring when his gay sexual identity was threatened.

Joe reported that stigma for him took the form of gay men being viewed only for their flamboyant facade. The intelligence, hard work and dedication of gay men's characters are overshadowed by this view. He himself had not experienced any verbal or physical manifestations of stigma, therefore for him the negative side of stigma was the stereotyping of gay men as previously mentioned.

Peter had faced blatant stigma, where although he graduated at the top of his undergraduate class he was denied employment at a firm he admired due to his gay sexual identity (this was reported to him by a friend who worked at the same firm). This pushed him to prove that he was excellent as a professional. He shared that his various professional successes and triumphs at a competing organization was his attempt to prove the former organization wrong about their assumptions and unjust treatment of him. His sexual identity in this sense made him feel like an outsider ("out group") but had spurred him on to reach a high level of professional success.

George reported being bullied, molested and propositioned for oral sex while in secondary school. This stigma made him want to be a better and stronger person so he could put those who stigmatized him "in their place". He often did this by telling those who bullied or molested him that he was not a cheap sex worker and they were wrong to assume such things about him because he was gay.

Rohan reported being taunted while in school by those who considered him an outsider. This drove him to have heterosexual sexual attractions and not be considered as an outsider. He wanted acceptance and compassion from his peers. Alex faced the same form of stigma as Rohan and this stigma caused him to exercise discretion about his gay sexual identity in order to gain societal acceptance and approbation. Eric felt that his identity as a gay man was "battered" due to the stigma associated with homosexuality. He felt that because of his identity as a gay man society "looked down on him as an abnormal person". His religion also considered his identity as a gay man "a curse or something that is not right" and this added on to the negativity associated with his same-sex sexual attractions.

DISCUSSION

Stigma (homophobia) can construct sexual identity via "in" and "out" groups and religious prejudice (Duran *et al*., 2007; Savin-Williams *et al*., 2010) while also causing gay men to develop heteronormative social behaviours in order to avoid stigma (Sylva *et al*., 2010). Stigmatization causes activism which forms sexual identity (Asthana & Oostvogels, 2001). As Duran *et al*. (2007) stated, stigma does cause an "in-group" and "out-group" situation. The experience of stigma and how stigma shaped the sexual identity of respondents from an "in-group" and "out-group" perspective add to the understanding of the sexual identity of gay men.

Stigma had positively or negatively affected the sexual identity of the respondents interviewed. At best stigma brought out the strength and courage in them, at worst it has brought out fear and recrimination. The most positive effects of stigma as narrated by the respondents had been being more sure and confident of their same-sex attractions and sexual identity; being able to manage and defend themselves when faced with name-calling and bullying; succeeding professionally despite misgivings by family; and honesty with self that led to better self acceptance and peace of mind. The opposite of this are the negative effects such as self-censorship; being fearful of being found out in a professional setting; being subjected to "out-group" behaviour; and feeling pressured to conform based on cultural, social and religious expectations.

The common types of stigma reported by the respondents range from name-calling (D'Augelli, 1998) to the creation of "in-group" and "out-group" situations (Duran *et al*., 2007; Savin-Williams *et al*., 2010). The "in-group" and "out-group" as posited by Duran et al. (2007) and Savin-Williams *et al*. (2010) was evident as well as in some reported cases religious prejudice. These have (negatively or positively) constructed the sexual identity of the respondents interviewed in this sample. There is also experience of being in the "out" group (Meyer & Dean, 1998) according to the respondents. The stigma faced by the respondents had not however resulted in activism (Asthana & Oostvogels, 2001).

The stigma reported by the respondents takes different forms (bullying, being laughed at, name-calling). But what is evident is that in the experience of gay men in Penang stigma is a reality and to an extent forced some of the respondents to conform (at least when in public) to society's expectations. The type of stigma most often reported by the respondents is the "in" and "out" group situation. Thus far there is no way to avoid this "in" and "out" group situation. However, the animosity found in such a context can be mitigated by developing a better understanding of homosexuality and the challenges faced by gay men in Penang.

CONCLUSION

Stigma had assisted in the development of sexual identity of the respondents. Sadly, it is stigma and not a more positive experience of socio-cultural interaction that had assisted in the development of sexual identity. As a population, the sexual identity of gay men would benefit from a more positive and affirming stance of society toward homosexuality. This affirming stance would be acceptance by society that homosexuality exists as an alternative form of human sexual expression (Roughgarden, 2004), that gay men not be subject to derogatory name-calling (Baba, 2001; 2002) by society and that gay men be judged on the content of their character and not solely on their same-sex attraction. However, within the confines of a conservative society such as Malaysia the need to move towards such a positive and affirming stance will require

more than just the recognition of stigma; it will require the joint voices of gay men to push society to listen to them.

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PERTANIKA
JOURNALS

Settling Down Spiritually: Chinese Malaysian's Worship of Datuk Gong

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ABSTRACT

When the Chinese migrated to Malaya en masse in the 19th century, they brought along with them their religious belief. Many aspects of the Chinese Religion are still maintained and practiced by the Chinese in Malaysia today. However, after years of interaction with people from other ethnic origins in Malaysia, the Chinese has synthesized local elements into their belief system. Empirically, the worship of Datuk Gong is one of them. The worship originated from the Datuk Keramat cult, which was popular among the Malays in Malaysia. This paper attempts to explain why the Chinese in Malaysia accepted local elements such as the worship of Datuk Keramat into their religion and the meaning of such acceptance. When the Chinese Malaysian transfigured certain elements found in their religion to accept the concept of Datuk Keramat, it shows their long-term commitment to make Malaysia their home. In order to achieve these objectives, observations and interviews at ten Datuk Gong temples in Peninsular Malaysia were made to collect relevant data. Data gathered shows the Chinese have transfigured their religious practice to facilitate their adaptation to live in a country, which was once foreign to them.

Keywords: Datuk Gong, Chinese Religion, Syncretism, Shenism, Pragmatism.

INTRODUCTION

Chinese immigrants started to converge in Southeast Asia en masse in the 19th century in search of better opportunities (Freedman, 1979, p. 5) which also saw an influx of their religious beliefs and practices. As a result, their religious beliefs and practices are felt in many parts of Southeast Asian countries. In the context of contemporary Chinese

Malaysian, many aspects of their religiosity are inherited from their immigrant ancestors (Tan, 1983). In other words, the religious practices of the Chinese Malaysian are quite similar to the practices of their ancestors in China. It also means that there are some developments within the Chinese Malaysian religion. When the Chinese landed on Southeast Asia, they faced numerous difficulties in adapting to the new social environment. The adaptation process has caused them to adjust some of their cultural practices. Some of the adjustments required them to change certain aspects of their traditional practices, which included their religious practices. The adjustments caused the Chinese Malaysian religion to develop into an interesting and unique form, and most probably, some of these practices can only be found in Malaysia or its neighboring countries where the Chinese population formed a significant mass. This paper refers their religion as Chinese Religion. This terminology was introduced by Tan Chee Beng (1983) to reflect that the fact that the diverse nature of Chinese Malaysian traditional religious practices should be understood as a whole system instead of being classified into Buddhism, Taoism or Confucianism,

Certain aspects of the Chinese Religion in Malaysia are outcomes of alterations, which were made to make end meets. According to Kok (1993, p.119), in many Chinese Malaysian Buddhist temples, a special space is allocated to house ancestral tablets. This feature is not common in the temples in China. In China, the ancestral tablets are placed in ancestral hall and

Chinese Malaysian does not commonly practice this feature. Such contradiction could be an outcome of adapting the design of the Chinese Malaysian temples to the needs of the Chinese immigrants. Probably, in the 19th century, the Chinese in Malaya did not see the need to build an ancestor hall to worship their ancestors since they only perceived this country as a stepping-stone to accumulate wealth. Once they have acquired sufficient wealth, they would not hesitate to return to their homeland in China, where the ancestral hall had already been built. Furthermore, their socio-economic condition did not permit them to do so. The difference between the Chinese temples in Malaysia and China reflects the pragmatic changes of the Chinese immigrants had taken place to suit their needs.

The alterations made by the Chinese Malaysian on their temples may not be significant enough to highlight how they have altered their religion to suit their needs and identity in Malaysia. It will be significant if they have transfigured certain aspects of the nature of their ancestral religiosity. Judging from the present state of the Chinese Malaysian religious practices, the transfiguration is obvious when they have included local elements into their religious belief especially in the worship of Datuk Gong. Many Chinese Malaysians worship Datuk Gong and this is evident when one observes the landscape of a Chinese majority housing area in this country. In most of the Chinese Malaysian homes, there will be a shrine which they use to worship *tian gong* (God of Heaven). But for the Chinese who worship Datuk Gong, there is

an extra mini shrine. This shrine is different from the *tian gong* shrine in terms of its design. While, the *tian gong* shrine is either supported by a pillar or hung on a wall, the Datuk Gong shrine is normally built on soil. Some are built on stilts that resemble the design of a traditional Malay house. The shrine houses the Datuk Gong. A closer look at the idol of Datuk Gong will certainly raise many questions especially those who do not understand the Chinese Religion. The miniature resembles the feature of a Malay man. Clearly, this worship is something that is unique and is not practiced in China, the land of Chinese Malaysian forefathers. The Chinese Malaysian is worshipping a deity which is not worshipped by their ancestors.

This paper intends to relate the worship of Datuk Gong to the Chinese Malaysian needs when settling down in this country. The worship is an outcome of the transfiguration of certain aspects of the Chinese religiosity. However, it will not emerge unless the Chinese has already developed similar concept much earlier. It will also not emerge if the Chinese Malaysian and their immigrant forefathers do not see the necessity to worship Datuk Gong. Besides these two conditions, the worship of Datuk Gong would not be possible if the worship is not supported by principles found within the Chinese Religion. The principles have provided ample rooms for the Chinese Malaysian to alter their ancestral religious practices. In order to discuss the above, this paper will elaborate the nature of Chinese Religion and Datuk Gong worship in Malaysia. The spiritual needs of the Chinese Malaysian will also be discussed to establish the link between their needs and the Datuk Gong worship, a Chinese way of settling down spiritually.

METHODOLOGY

One of the characteristics of Chinese Religion is that the religion unifies human microcosm and divine macrocosm (Ackerman, 2001, p. 293). The Chinese believes man, nature and divinity form a unified cosmos (Adler, 2002, p. 113). This belief indicates the role of meaning in the Chinese Religion. The relationship between human and divinity is actively determined by individuals. Each individual has his or her own interpretation of how the relationship should be managed. Based on this characteristic, it is important to understand how the Chinese Malaysian interpret Datuk Gong and how the interpretation is expressed when they settled down in this country.

In order to find out the identity and history of Datuk Gong, the rituals and offering in the worship, the methods of interview and observation were employed. Data collection was carried from April 2010 till June 2010. Interviewees are the committee members of the Datuk Gong temples visited and also the worshippers met in the temples. A few Datuk Gong temples, located in several states in Peninsular Malaysia, namely Penang, Perak, Selangor and Kuala Lumpur were visited for the purpose of the study. Before discussing the worship of Datuk Gong, the writing in the following section attempt to provide a background understanding on the nature of Chinese Religion in Malaysia.

THE SYNCRETIC NATURE OF CHINESE RELIGION

It is incomprehensible to observe a Chinese worships a Malay man who is also a Muslim without understanding the nature of Chinese Religion. Those who do not understand the nature of Chinese Religion will certainly question such worship. However, it may not be so if the worship is understood from the worshippers' point of view. Generally, as immigrants, it was natural for the Chinese to build their relationship with the local people. The Datuk Gong worship represents the Chinese's intention to establish a spiritual relationship with Malaya and its people.

Goh (2009, p. 121) linked the worship of Datuk Gong to the anxiety which the early Chinese immigrants had when they arrived in Malaya. The early Chinese immigrants needed a local force to safeguard their well-being in a foreign land. *Datuk Keramat* was seen as suitable to play the role of the local force. Their worries then were many. Being immigrants, they were worried of dangers such as illness. The popularity of *Datuk Keramat* among the Malays as healers had then caused the Chinese to worship *Datuk Keramat* as Datuk Gong.

But the Chinese Malaysian would not be able to accept a foreign element into their religion if their religion is exclusive. The worship of Datuk Gong by the Chinese Malaysian must have originated from certain characteristics of the Chinese Religion which caused the religion to be inclusive. As a result the Chinese Malaysian are able to worship Datuk Keramat as their deity. The key to the inclusiveness of the Chinese Religion is the syncretic nature of the Chinese Religion. DeBernardi (2009), Goh, (2009), Tan (1983) and Sakai (1997) believe the worship of Datuk Gong is an outcome of the syncretic nature of Chinese Religion.

According to Tan (1983, p. 220), most Chinese Malaysian refers to their religion as *bai shen* or *bai fo*. The former refers to the worship of deities and their interpretation of deities refer to all deities found in Chinese religious system, including those from Buddhist origin. The latter refers to the worship of Buddhas or Bodhisattvas. However, in actual practice, they may include all deities, including those from Taoist origin. Due to such circumstances, Tan labeled the Chinese Malaysian religion as Chinese Religion. Generally, most Chinese Malaysian worship Buddha and Taoist deities simultaneously. It is common in the Chinese Malaysian's home to find Buddha being positioned next to Taoist deities in the altar. Such sight is also common in most Chinese temples. These features indicate the inability of the Chinese Malaysian to separate or differentiate Buddhism and Taoism. For them, both religions carry the same sacred significance. In other words, the Chinese have amalgamated Buddhism and Taoism and such practice had caused Tan to label the religion of the Chinese Malaysian as Chinese Religion. In his opinion, it is erroneous to associate the majority of the Chinese Malaysian to Buddhism, Confucianism or Taoism. The Chinese Malaysia traditional religious beliefs have to be viewed as a whole system.

The Chinese does not only amalgamate Buddhism and Taoism. To a certain extent Confucianism has also been integrated into their religion (Adler, 2002, pp. 91-94). In Adler's view, Confucianism reinforced the elements of mysticism within Chinese Religion by bringing in concepts such as *Tian Li* (principle of Heaven). There are also elements of other religions in Chinese Religion. DeBernardi's (2009) findings show the Chinese Malaysian has not only worshipped Buddha and Tao deities. According to DeBernardi, elements of other religions such as Christianity and Hinduism are also found in Chinese Religion. The mixtures of many religious elements are further complicated by the worship of deified men. Yang (1961) elaborated on the existence of ethnopolitical cult or popular religion among the Chinese. Normally, these cults exist within certain locality but there are also some cults which became popular and are now worshipped by Chinese all over the world. The cult of *Guan Di* is one of such cult. The ethnopolitical cults have also emerged in Malaysia. Early Chinese immigrants deified their leaders. When a respected leader died, the leader was worship, deified. One of such cult is the *Si Shi-Yeh* cult in Rasah, Negeri Sembilan. He was a Chinese triad leader in the 19th century. When he was murdered, his followers deified him and built a temple for him.

What allows Buddhism, Confucianism, Taoism and other religions supernatural elements to be amalgamated as the Chinese Religion? Which aspect of Chinese Religion system allows them to do so? Scholars (Goh 2009; Tan 1983; Bernardi 2009) attributed the amalgamation to the syncretic nature of Chinese Religion. The syncretic nature of Chinese Religion is not a recent development. The idea of worshipping gods of different religions or sects has always been a part of Chinese religious practice. Twinem's (1925) study exhibited the syncretic nature of Chinese Religion in Shanghai, China. His study described the syncretic nature of *Wu Shan She* (Apprehension of Goodness Society) which combined five religions – Confucianism, Buddhism, Taoism, Mohammedanism (Islam) and Christianity. The society preached good deeds as their central principal.

Similar combination can be found in Malaysia. The *Che Ru Kor* Moral Uplifting Society in Endau, Johor unites five religions, i.e. Islam, Christianity, Buddhism, Taoism and Confucianism into a single belief. As an extension of *Dejiao*, a Chinese religious movements started in early 20th century (Goh, 2009), the society promotes good deeds and moral virtues through its 'ten virtues and eight rules', developed through the amalgamation of Confucianism and Taoism principles. Members of the society believed in one supreme deity who is similar to the concept of the belief in one God of the Christians and Muslims. The only difference is that the society supreme deity is *Guan Di-yeh* who succeeded the throne of heaven after the abdication of the Jade Emperor (Goh, 2009, p. 115).

The syncretic nature of Chinese Religion allows different sects or religions to take part

in forming Chinese's religious ideologies and practices. The unity of different religious elements constructs new ideologies that add dynamism to Chinese Religion. The dynamism portrays the openness of Chinese Religion in incorporating elements that the Chinese perceive as important and benefit them. Just like *Wu Shan She, Che Ru Kor* Moral Uplifting Society place good deeds and behaviors as the central principles that have to be followed by its members. These principles are derived from the teaching of the five religions. In other words, members of the society believe all religions have the same objective. The society unifies the teachings of the five religions and derives principles that benefit human kind. This conclusion confirms Ackerman's (2001) observation. Syncretism has allowed different religions or sects worship by the Chinese to maintain their respective identity while contributing to the development of new ideologies and perhaps new practices too.

Up to this stage, this article has explained the reason for the mixture of religions found in the Chinese Religion. It is due to the syncretic nature of the Chinese Religion; the religion has absorbed multiple religions and transforms them into the religious practices of the Chinese. But, what caused Chinese Religion to be syncretic in the first place? To answer this question, Elliot (1955, p. 27) introduced the concept of *shenism*. The concept is derived from the term *bai shen*. *Bai* means to pray or worship while s*hen* means powerful spiritual beings which must be worshipped to secure human well being.

In Elliot's observation, Chinese worship many *shen* with pragmatic purposes. The *shens* have different tasks to perform and hence worshipped according to their task. *Da Bo Gong* for example is worshipped to bring wealth as well as protection since he is the local god of soil. *Guan Shi Yin* (Goddess of Mercy) is worshipped for salvation from negative karma. Summarily, the deities are worshipped because the Chinese hopes to use their magical power to fulfill their desire. Therefore, in Goh's (2009, p. 112) view, *shen* is an almost-empty concept. It is up to a person to interpret the concept and as such *shen* may differ according to the person needs at different point of time and place.

Consequently, the syncretic nature of Chinese Religion is probably an outcome of the pragmatic needs of the Chinese. Their needs are intertwined with their religiosity. The intertwinement is a consequent of the Chinese belief that the divine, human and nature are elements of cosmos. As a result of such belief, the Chinese believe their relationship with the divine or should be mutually benefitting. The divine will assist them by fulfilling their needs and in return the divine will be worshipped. Since the divine or s*hen* is an almost-empty concept, there is no boundary to stop the Chinese from including divine elements of other religions as their *shen*. In the context of Chinese Malaysian, their cosmos are very much confined to the physical and social environment of Malaysia. Their needs have been pre-determined by their intention to settle down in this country either temporarily or permanently. In order

to fulfill their needs, the Chinese seek the assistance from the divine found within their interpretation of 'Malaysian cosmos'.

Hitherto, the syncretic nature of Chinese Religion has devised an open system within the Chinese cultural system (Lee, 1986, p. 199). It enables the Chinese to accept and absorb whatever that they perceive as beneficial and useful to them. This pragmatic approach has allowed Chinese Religion to be inclusive. The inclusiveness of Chinese Religion has enabled it to transfigure; to accept elements found in other religion or cultural practices and this include the worship of Datuk Gong in Malaysia.

THE CONCEPT OF DATUK GONG

In relation to the acceptance of Datuk Gong as a *shen*, the Chinese Malaysian (either the 19th century immigrants or their descendents) needed a local divine force to protect them from the harm that they may encounter in this country. Besides warding off harm, the Chinese Malaysian are also hoping the local divine force would be able to provide them opportunities to amass wealth and prosperity. Traditionally, within the Chinese Religion, these needs are provided by *Du Di Gong* (god of the soil). In the Chinese language, *Du Di* carries the meaning of local soil. Thus, *Du Di Gong* is the local deity whose role is to protect and assist the people who live in a particular locality. Datuk Gong has been accepted by the Chinese Malaysian as their *Du Di Gong* (Sakai, 1997). The Chinese Malaysian worshipped Datuk Gong for protection, wealth, health and multiple other needs. The

implication derived from such needs is the acceptance of *Datuk Keramat* as the *Du Di Gong* of the Chinese Malaysian; a clear-cut transfiguration of elements found in Chinese Religion to fulfill the needs of the Chinese Malaysian.

As mentioned earlier, the Datuk Gong worship in Malaysia originated from the concept of *Datuk Keramat*. Besides Goh (2009), Cheu (1992) had also related Datuk Gong to the worship of *Datuk Keramat*. The incorporation of Datuk Gong worship into Chinese Malaysian religion transfigures Chinese Religion by bringing in local elements into the complex cosmos of Chinese Religion. The worship of *Datuk Keramat* is by itself an outcome of Islamic mysticism. It is a Malay cult which worships saints. These saints or *Keramat* were pious men, preachers of Islam and leader of Islamic movements and were believed to have semi-divine power. *Datuk Keramat* worship is no longer popular among the Malays today. Due to the revival of Islam which started since the 1970s, the worships are now done privately (Lee, 1988, p. 402).

Although the Malays have almost deserted the Datuk Keramat worship, the Chinese have sort of preserved it, albeit within the context of Chinese Religion. The interactions between the Chinese and the Malay in Malaysia have provided a platform for the *Datuk Keramat* worship to be accepted by the Chinese Malaysian. The Datuk Keramat concept is accepted and was later pronounced as Datuk Gong by the Chinese. The 'Datuk' in the Datuk Gong concept is the *Datuk Keramat*. 'Gong'

is an honorific title attached to Chinese deities. Therefore the Datuk Gong concept maintains the identity of *Datuk Keramat*, a feature of the syncretic nature of Chinese Religion.

DATUK GONG WORSHIP: RITUAL AND IDENTITY

The authors visited ten Datuk Gong temples and numerous Datuk Gong shrines to learn more about the Datuk Gong worship. Surprisingly, in the visits, they discovered temples which worship non-Malay Datuk Gong. Such discovery contradicts their earlier assumption that all Datuk Gong are Malay Datuk Gongs since the belief originated from the worship of Datuk Keramat. In this section, the authors will explain Chinese Malaysian Datuk Gong worship and their interpretations concerning the worship.

Malay Datuk Gongs

Seven out of the ten temples visited by the authors worship Malay Datuk Gongs. In these temples, the authors observed that the Datuk Gongs ethnic origin were clearly represented by the appearance of the figurines. In these temples, the Malay Datuk Gongs were positioned in the center altar, a feature to indicate their status as the resident deity of the temple. Their figurines were crafted to resemble the feature of a Malay man wearing either a *songkok* (a black headgear) a *kopiah* (a white headgear) or a *tengkolok* (a traditional Malay headgear). The other indicator observed would be the Datuk Gongs' clothing. The Malay Datuk

Gongs were crafted as a Malay man wearing *Baju Melayu* (traditional Malay clothing).

The Datuk Gongs ethnic origins observed in the Malay Datuk Gong temples were also reflected through their names. In *Lian Hup* temple in Kelang, Selangor, the Datuk Gongs of this temple were named as Datuk Haji Keramat and Datuk Mustafa. The worshippers got to know the Datuk Gongs' names from through a trance session held by a medium. The authors also visited temples where the Datuk Gongs' names were based on colors. In such temples, the Datuk Gongs' were referred to as Datuk Hijau (Green Datuk), Datuk Hitam (Black Datuk), Datuk Merah (Red Datuk), Datuk Kuning (Yellow Datuk) and Datuk Biru (Blue Datuk). According to Cheu Hock Tong (1992, p. 387), the colors represent the different functions of the Datuk Gongs. For example, the Yellow Datuk is supposed to take care of the general well-being of the people living in a particular locality meanwhile the Green Datuk is to take care of the flora and fauna. A *Keris* (Malay dagger) was also found in all the Malay Datuk Gong temples. In some of the temples, the authors noticed that the *keris* was placed at the Datuk Gong altar. In some other temples, the *keris* was inserted into Datuk Gong figurine's palm. The *keris* strengthened Malay ethnic identity of the Datuk Gongs.

The fact that the Datuk Gong is a Malay man and worshipped by the Chinese Malaysian is certainly an interesting phenomenon to be studied. Questions such as do the Chinese worshippers know that they are worshipping a Malay deity, and if

they know, why do they still want to worship it? These questions were posted to several Datuk Gong worshippers.

All the worshippers interviewed in the Malay Datuk Gong temples knew that they were worshipping a Malay deity. The members of Bagan Sekinchan Datuk Gong Temple Committee said that they knew about it and they were not surprised. They explained that the Datuk Gong must be a Malay since the term originated from the Malay language. According to them, a Malay Datuk would be helpful in solving their local daily issues. In another interview session, the interviewee, Mr. Ng, former chairman of Teluk Intan Datuk Gong temple's committee concurred that the Datuk must be a local person, recognized for his contribution to the local community and as such the local person must be a Malay.

The worshippers were also asked whether the Datuk Gong worship would be a strange practice since worshipping a Malay Datuk Gong would mean they were worshipping a Muslim. One of the worshippers at Kampung Sawa Datuk Gong Temple, Mr. Lau expressed that there should not be anything strange about it. To him, a Datuk's religious identity and ethnic origin should not be the focus of the worship. The focus of the worship should be on the Datuk Dong's *ling* (magical power). According to him the Chinese worshippers needed a local divine force with *ling* to assist them to resolve local issues that affect their well-being. That force should be represented by the Malay who knew and were familiar with local surroundings who coincidentally

would be a Muslim. Therefore, it should not be viewed as strange. He further explained that, there was nothing wrong to worship a Muslim. In fact, he believed that the Malay and Muslim identity were the reasons to worship a Malay Datuk Gong. According to him, "If the Datuk Gong is not representing the feature of local force, the *ling* is absent and the Datuk is not a powerful one."

The rituals of Datuk Gong worships and the design of the Malay Datuk Gong temples or shrines visited by the authors had also exhibited the Malayness of Datuk Gong. In the visits, the authors observed that some of the temples were very expressive in reflecting the Malayness of the temples' Datuk Gongs. For instance, *Lian Hup* Datuk Gong Temple has a dome as its roof. A dome is a symbol of a Malay mosque. Such design had caused uneasiness among the local Malay people. There were attempts to demolish the temple but were unsuccessful (Lee, 1988, p. 412). According to Mr. Soh, the medium cum caretaker of the temple, the dome design should not be an issue. He said, "The dome merely represents the identity of the Datuk Gong, a Malay deity and we have no intention to offend another religion." In other words, the design of the temple is merely showing the identity of a Chinese deity who is a Malay man and also a Muslim. The cultural expression of Datuk Gong's Malay identity was also found in the design of Datuk Gong shrines. Most shrines visited in Bagan Sekinchan, a fishing village exhibited the design of traditional Malay house.

Besides the architectural aspects, the Malayness of the Datuk Gong had also been observed in the rituals practised by the worshippers. In a *Datuk Gong Dan* (festival to celebrate Datuk Gong's birthday) organized by Desa Aman Puri Datuk Gong Temple Committee, the worshippers were cautious in selecting their offerings to the temple's Datuk. Since Islam forbid pork, the worshippers did not serve any pork to the temple's Datuk Gong during the festival. Instead of serving pork, the worshippers served chicken curry and mutton curry to the Datuk Gong. Other food offered to the Datuk Gongs were Kopi-O (coffee without milk), betel leaves, native cigarettes and *nasi pulut kuning* (yellow glutinous rice). All these offerings were made to suit diet of the Malay Datuk Gong they were worshipping. In another *Datuk Gong Dan*, held by Kampung Datuk Sawa worshippers, they sacrificed two goats as offering to the temple's resident Datuk Gong. The temple committee hired two Malays to slaughter the goats to adhere to the Islamic method of slaughtering. Such action was taken to ensure that the mutton would be 'halal' (permissible according to Muslim beliefs and values) and safe to be 'consumed' by the Datuk Gong.

Non-Malay Datuk Gongs

As discussed earlier, the Datuk Gong worshippers also worship non-Malay Datuk Gongs. In Broga, Selangor, the authors visited *Shi Natuk* (Stone Datuk) Temple in which an Orang Asli (aborigine of Malaysia) Datuk Gong was worshipped as the resident deity. In their visit to this temple, the authors analyzed newspaper reports found in newspapers cuttings that were pasted on the notice board of the temple. The newspaper cuttings illustrated the origin of the temple. The temple was established due to a local legend. According to the legend, the Datuk Gong of the temple provided protection to the villagers who were facing persecution of Japanese Army during the Second World War. The Datuk Gong hid the villagers via its supernatural power. As a result, the Japanese armies failed to find them. Such legends had caused the worshippers to believe that the Datuk Gong of this temple has *ling*. As a result, this temple became highly popular among Datuk Gong worshippers. The temple is one of the most popular Datuk Gong temples in Malaysia. Based on the newspaper reports, hundreds of tourists and worshippers would visit the temple during weekend and Chinese festival. According to the temple care taker, Mr. Soon, due to temple's popularity and large number of worshippers, the temple managed to accumulate big sum of donation every year. The money was used for charity. Every month, the temple's committee would spend nearly RM30, 000 for charity causes. Through conversation with Mr. Soon, the authors had also discovered that since the Datuk Gong of this temple originated from the Orang Asli ethnic origin, food offering made by the worshippers differ slightly from Malay Datuk Gong food offerings. The worshippers served pork and liquor. Other than that, the architectural design of the temple also did not reflect any Malay or Islamic influence.

Besides the Orang Asli Datuk Gongs, there are also Datuk Gongs from other ethnic groups origin. For instance, the authors discovered four Datuk Gongs of different ethnic origins worshipped in Kampung Sawa Datuk Gong Temple. The resident Datuk Gong of the temple was Datuk Kassim, a Malay Datuk Gong and other Datuk Gongs were Datuk Che Pu Long (Siamese), Datuk Ah Chong (Chinese) and Datuk Mutu (Indian). According to Mr. Soh Huat (temple's medium) Datuk Ah Chong was deified as a Datuk Gong due to his contribution in developing the temple. Meanwhile, Datuk Mutu was worshipped as a Datuk Gong after a nearby Indian community worshipped him as their deity. Mr. Soh Huat further elaborated that although Datuk Kassim was the resident Datuk of the temple, his rank was lower than Datuk Che Pu Long, a Siamese Datuk. He explained that such hierarchy was created because in the past, Gerik was under the patronage of the Siamese rulers. Similar temple was found in Taiping, Perak. The temple was built by the villagers of Kampung Penglong and house four Datuk Gongs of different ethnic origin. Based on the information provided by Mr. Ng (former medium and caretaker of the temple), the Datuk Gongs were from Malay, Chinese, Indian and Sikh origins and as such the temple was named as *Datuk Empat Keramat* Temple.

DATUK GONG AND CHINESE MALAYSIAN INTERPRETATION

Based on the above findings, the Chinese immigrants and their descendants have acknowledged the importance of worshipping the local divine force to safeguard their well-being. This explains why most Datuk Gongs are Malays. However the interpretation of the local divine force is not confined to the Malays. As discussed earlier, some Datuk Gong worshippers worship Siamese Datuk Gong and also Datuk Gongs of other ethnic origins. Whether or not the Datuk Gongs' ethnic origin are Malays or from other ethnic origins, the fact that can be established here is that Chinese Malaysian has transfigured the concept of *Du Di Gong* or Earth God by replacing it with what they interpret as the local divine. The holistic nature (unifying human, divine and nature in one cosmos) of Chinese Religion has permitted the Chinese to be pragmatic. Under such holistic nature too, the Chinese are permitted to worship any divine elements which they consider as worth worshipping. The Chinese Malaysian have chosen to worship Datuk Gong because they believe that the local divine force that will be able to assist them. Being immigrants, the Chinese Malaysian forefathers sought the blessing of Datuk Gong to assist them to adapt to a foreign environment. They needed a force that was able to provide them security as well as opportunities to prosper. By worshipping Datuk Gong, they assumed their needs were taken care of by a local divine force.

Chinese believe that human, divinity and nature form a unified cosmos. The non-dualistic nature of Chinese Religion allows human and the divine to correspond (Adler, 2002, pp. 112-113) to maintain the harmony of the cosmos. The non-dualistic nature has also caused Chinese Religion to

be syncretic, pragmatic and inclusive. In Malaysia, the Chinese need a local divine power to correspond with to safeguard their well-being. *Datuk Keramat* which was worshipped by the Malays for more or less the same reason was then selected and included in the system of Chinese Malaysian Religion. However, as time passed by, the Chinese enlarged their interpretations of local divine power. Thus, Datuk Gong worship is not confined to Malay Datuk Gong worship. The worship of other Datuk Gong of non-Malay origin proved that the Datuk Gong may not necessarily be a Malay. As the Chinese interact with people of other ethnicities, they started to visualize the others as forces to be reckoned with too.

This development has been described by Goh (2009) as the hybridization process of Chinese religious practices in Malaysia as well as Singapore. Due to interaction with other cultural systems, the Chinese hybridize their religious practices by including elements found in other cultures into their religious system. Such hybridization as shown in the Datuk Gong worship reflect the syncretic nature of Chinese Religion. Underlying the syncretic nature, is the Chinese Malaysian pragmatic approach to contextualize and interpret the Malaysian social and physical surrounding.

Their needs have motivated them to search for a local divine power that will be able to solve their problem or assist them to achieve their desire and the search is not confined to the traditional elements found within the Chinese Religion. As discussed above, the meaning of *shen* or

the divine is not restricted by cultural or physical boundaries. It goes beyond these boundaries and very often what constitute *shen i*s dictated by the needs of the Chinese. As a result, the Chinese Religion is able to accept and to a certain extent amalgamate element found in other religions and beliefs. Their descendents continued the worship with similar interpretations. The worship provided them the spiritual link which connects them to a place and enables them to make a living in a place that later they call home.

CONCLUSION

Based on the above discussion, the worship of Datuk Gong by the Chinese Malaysian is not incomprehensible after all. The nature of Datuk Gong worship will naturally invites questions especially from the Malays since the worship involves them. But if studied, Datuk Gong worship is merely an outcome and reflections of the nature of Chinese religious system. The syncretic, pragmatic and inclusive nature of Chinese Religion has allowed the Chinese Malaysian to transfigure their *Du Di Gong* concept and localized it in Malaysia in the form of Datuk Gong. If Geertz's (1975) definition of religion is to be used here, then to a large extent the worship of Datuk Gong has illustrated the culture of the Chinese Malaysian. According to Geertz (1975, pp. 87-125), religion is a system of symbols which provide the motivation for human to build the general order of living. As immigrants and now descendants of the immigrants, the Chinese in Malaysia are always aware of the necessity to interact

and to respect people of other ethnicities who live in this country. The interaction and respect will develop harmonious relationship which is prioritized by the Chinese culture. The worship of Datuk Gong is the Chinese Malaysian way of adjusting and to live in a country which was once foreign to them. It is a spiritual approach used by the Chinese Malaysian to settle down in Malaysia.

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Identifying Factors Influencing Mathematical Problem Solving among Matriculation Students in Penang

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ABSTRACT

Mathematics is recognized as an important subject in the school curriculum in Malaysia. It is a compulsory subject for many courses in matriculation, private colleges and universities. The purpose of this study is to identify the factors that influence the matriculation students in mathematical problem solving. Bayesian Network, a data mining technique, is used in this study to analyse the causal relationships. Bayesian network is a probabilistic graphical model which converts variables and their dependent relationships into nodes and arcs respectively. We compare the resultant networks using the different constraint and score based algorithms to identify the main factors affecting students in problem solving of mathematics. We found that students in Penang Matriculation College faced problem solving in mathematics owing to their problem with mathematical symbols. Hence, the students have no confidence in answering mathematics problems especially in questions related to their understanding of mathematical symbols.

Keywords: Bayesian Network, Learning Algorithms, Network Scores, Causal Relationship, Graphical Model, Mathematics Education, Data Mining.

INTRODUCTION

Mathematics is recognized as an important subject in the school curriculum in Malaysia. In the Malaysian education system, students have to learn mathematics from kindergarten, right up to their matriculation studies. In private colleges and universities, mathematics is a compulsory subject in many courses. Students can apply for admission to matriculation courses which are coordinated and carried out by the Ministry of Education (MOE) (Hong *et al*, 2009). In the application, mathematics and additional mathematics are two important subjects that are considered for admission into the matriculation programme. Most of

the selected applicants have good grades in these two subjects. However, the majority of the matriculation students under the 1 year programme still face difficulties on problem solving in mathematics. This study uses a questionnaire survey to gather information needed from the students in Penang Matriculation College session 2010/2011. We then use Bayesian Network to analyze the causal relationships of the students on problem solving in Mathematics. The Objectives of this study are to explore the mathematics problems faced by students in the Penang Matriculation College and to use Bayesian Network to identify the most significant mathematics problem faced by students in the matriculation programme. Bayesian network is used in this study in place of other statistical methods like regression because it does not fix or assume the variables to be dependent or independent. Instead, the structural learning in Bayesian network explores the structural dependencies among the variables.

A Bayesian Network is a probabilistic graphical model that encodes variables and their dependent relationships into nodes and arcs respectively (Heckerman, 1995; Pearl, 1986). In general, Bayesian Network can be defined as follows: Assume that $S = \{ G, \theta \}$ be a joint probability distribution of a set of n random variables $= \{X_1, X_2, \dots, X_n\}$ and is specified by a directed acyclic graph G with a set of conditional probability functions parameterized by θ (Pearl, 1988). According to Cao and Fang (2010), the Bayesian Network structure,

G, encodes the probabilistic dependencies in the data and the presence of an edge between two variables means that there exists a direct dependency between them. This set S contains the parameter $\theta_{x_i|\pi_i} = P_S\left(x_i \mid \pi_i\right)$ for each realization x_i of X_i conditioned on π_i, the parents of x_i in G. Thus, S can be defined as a unique joint probability distribution over X, written as $P_S\left(X_1, X_2, \dots, X_n\right) = \prod_{i=1}^{n} P_S\left(X_i \mid \pi_i\right) = \prod_{i=1}^{n} \theta_{X_i|\pi_i}$ where π_i represents the causes (parents) of variable X_i. Bayesian Network is an approach to detect causal structures in data (Pearl, 2000). We know that Bayesian Network is a graphical representation of a probabilistic distribution on a set of random variables. Tchangani (2002) stated that Bayesian Network has a graphical representation of causality relationship between a cause and its effect. The nodes are linked by directed arcs that create a Directed Acyclic Graph (DAG) and the DAG shows no route or path from one node connecting back to itself or else it will be a cyclic graph. However, the arcs represent the conditional independent relationships between the nodes. Assume that an arc from node R to node Q shows that the probability specification for node Q is directly dependent on the values in node R. In this case, R is called *a parent* of node Q and node Q is called a *child* of node R. Fig.1 shows the relationship between the nodes R and Q.
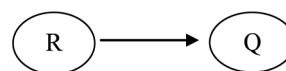
Fig.1: Connection from node *R* to *Q*

The direction of the arrow shows the state of information of the decision maker, that is, whether the decision maker is capable of expressing the probability as P $(Q \mid R)$.

LITERATURE REVIEW

In the early development of Bayesian Network, it is used to solve problems in computational complexity and independence assumptions (Ni *et al*., 2010). According to Tchangani (2002), Bayesian Networks derive from convergence of statistical methods that allow one to go from information (data) to knowledge (such as probability laws and relationship between variables) and Artificial Intelligence (AI) that allow computers to deal with knowledge. Pearl (1988) and Jensen (1996) both agree that Bayesian Networks (BNs) are among the leading technologies to describe and derive conditional independence relationship among the random variables. Bayesian Network has become a powerful tool for causal relationship modelling and probabilistic reasoning (Tang *et al*., 2010) because researchers use Bayesian Network to handle problems with much greater complexity. It has become advantageous in a variety of areas including medicine (Gevaert *et al*, 2006), environmental protection (Henriksen and Barlebo, 2007) and financial risk management (Neil *et al*., 2005).

In Malaysia as in most countries, mathematics is a compulsory subject for students. Aziz (2005) stated that in learning mathematics, students always encounter problems involving calculations,

understanding of concepts, principles and mathematical relationship with the others subjects. Norah *et al*. (2009) also claimed that learning of mathematics is a dynamic and complex process due to the interaction between previously acquired levels of understanding, conceptualization and incorporating of new materials. However, mathematics is more challenging for students. In matriculation, students often complained that mathematics is hard to learn and difficult to relate to in their studies. According to Haron *et al*. (2000), mathematics is the most difficult subject to understand among the students in the matriculation programme of Universiti Kebangsaan Malaysia (UKM). In Mahmud (2003), the main reason for secondary school students' difficulties in solving mathematical problems was an inability to understand the problem. Hong (2004) found that students had problems in solving non-routine mathematical problems even though they could pass their mathematics examinations. Aziz (2005) claimed that mathematics is difficult to learn because the concept in mathematics is abstract and hard to understand. Irvin and Norton (2007) claimed that students' poor attitudes toward mathematics cause them to perceive mathematics as a dry and static subject, abstract and only involved calculation.

In this study, problem solving in mathematics is an issue we focus on. In the start of the 21st century, the Ministry of Education (MOE) in Malaysia emphasizes that problem solving is one of the various aspects in teaching and learning when

implementing the revised curriculum (MOE, 2001). Chapman (2005) stated that problem solving is important as a method for learning and teaching mathematics. Zakaria *et al*. (2009) said that solving a problem is a task in which an individual uses his/her existing knowledge, skills and understanding to address an unfamiliar situation. A problem solver also needs a rich, connected understanding of mathematics, ability to see patterns of similarities and association, skills to carry out the solution and finally, check that the results make sense in context of the problem (Burkhardt and Bell, 2007).

METHODOLOGY

The sample involves 1312 students from Penang Matriculation College in the academic session 2010/2011. The respondents are of the same age and similar educational background where all have passed their PSPM 1 (Peperiksaan Semester 1 Program Matrikulasi) semester 1 examination. In addition, the respondents will sit for their PSPM 2 soon. This study used a questionnaire that is similar to Chong (2006) but is modified to cater for matriculation students. This questionnaire consists of twelve items. All the twelve items are given in five Likert scales, with 1 denoting "Strongly Disagree", 2 denoting "Disagree", 3 denoting "Neutral", 4 denoting "Agree" and 5 denoting "Strongly Agree". This instrument is designed to see a causal relationship between the items and all items are related to problem solving in mathematics.

This instrument contains 12 questions. They are from Q1 until Q12. All the questionnaires from Q1 to Q12 are available in Appendix 1. The questionnaires are distributed to the students during their lectures.

Structural Learning in Bayesian Network

Structure Learning Algorithms which include Scored-based (Singh and Valtorta, 1995; Margaritis, 2003) and constraint-based (Cooper, 1997; Margaritis, 2003) are two categories of structure learning algorithms for Bayesian Network. The score-based method uses a score metric that measures how a structure reflects the data and finds a Bayesian Network structure with the highest score (Na and Yang, 2010). However, the DAG in constraint-based method is based on a set of conditional independent statements and is recognized from some prior knowledge or on some calculation from the data (Margaritis, 2003).

Analysis in the Bayesian Network

In this study, we use both score based methods and constraint based methods to determine the major causes for students to be poor in solving mathematics problems. In learning a large system, heuristic algorithms such as Hill – Climbing (*HC*) are commonly used in practice (Kojima *et al*., 2010). Kojima *et al*. (2010) also claimed that the Hill – Climbing algorithm is used to find the local optima and upgraded versions of this algorithms lead to improving the score and structure of the results. Daly and Shen (2007) stated that the optimised implementation uses

score caching, score decomposability and finally score equivalence. These scores will reduce the number of duplicated tests. Grow –Shrink (GS) algorithm consists of two phases which are a grow phase and a shrink phase. The GS algorithm was proposed by Margaritis (2003). In Tsamardinos *et al*. (2003), Incremental Association Markov Blanket (IAMB) algorithm is based on the Markov Blanket detection algorithm which consists of two phases: a forward phase and a backward phase. Interleaved Incremental Association Markov Blanket (Inter- *IAMB)* is another variant of IAMB. It has two phases: growing phase and shrinking phase. It used a forward stepwise selection which avoids false positives in the Markov Blanket. (Tsamardinos *et al*., 2003 ; Ge *et al*., 2010)**.** Fast Incremental Association Markov Blanket (Fast- *IAMB)* also contains two phases: growing phase and shrinking phase (Yaramakala and Margaritis, 2005). It is similar to GS and IAMB. An algorithm that is called max – min hill climbing (MMHC) proposed by Tsamardinos *et al*. (2006), combined an independence test (IT) approach with a score based strategy where an undirected graph is constructed or built depending on an IT approach and a constrained greedy hill climbing search which returns a local optimum of the score function. Restricted Maximization (RSMAX2) is a more general implementation of the Max-Min Hill-Climbing, which can use any combination of constraint-based and score-based algorithms (Scutari, 2010). Thus, HC and RSMAX2 used the scored based method while the

other learning algorithms used constraint based methods. A score based Bayesian network structure search is used in Tamada *et al*. (2011) to find the DAG structure fitted to the observed data and the score function is used to measure the fitness of the structure to the given data. Ge *et al*. (2010) stated that a score function Score (*G*, *D*) for learning a Bayesian network structure is decomposable. It can be expressed as a sum of local scores. Score $(G, D) = \sum_{i=1}^{m} S(D_i, D_{Gi})$ where *G* is a directed acyclic graph (DAG) and *D* is a certain data set. There are several scores proposed for learning Bayesian networks such as the Bayesian Dirichlet equivalent or Bde (Heckerman *et al*., 1995), the Bayesian Information Criterion or BIC (Schwarz, 1978), the Akaike Information Criterion or AIC (Akaike, 1974) and the greedy heuristic algorithm or K2 (Cooper and Herskovits, 1992). We calculate the score results based on networks obtained from the seven learning algorithms, which are Hill-Climbing (HC) , Grow- Shrink (GS), Incremental Association Markov Blanket (IAMB), Fast Incremental Association Markov Blanket (Fast-IAMB), Interleaved Incremental Association Markov Blanket (Inter-IAMB), Max - Min Hill Climbing (MMHC) and Restricted Maximization (RSMAX2). These score functions are used to estimate the network fit for these algorithms. Score-based methods produce a series of candidate Bayesian networks from the learning algorithms; calculate a score for each candidate and return a candidate of highest score (Jensen, 2009). Akaike Information Criterion or AIC was developed

by Akaike (1977). Akaike (1973) used the AIC to select the model that minimizes the negative likelihood penalized by the number of parameters as specified in the equation (1).

$$AIC = -2 \log p (L) + 2p \qquad (1)$$

where L refers to the likelihood under the fitted model and p is the number of parameters in the model. It is used to find the approximate model to the unknown true data (Acquah, 2010). Another information criterion that is widely used is BIC or Bayesian Information Criterion. BIC is derived within a Bayesian framework as an estimate of the Bayes factor for two competing models (Schwarz, 1978; Jensen, 2009). The score for the BIC is defined as

$$BIC = -2 \log p (L) + \log n \qquad (2)$$

where n is a sample size. The difference between AIC and BIC is based on the second term which is the sample size (Acquah, 2010). Heckerman *et al.* (1995) developed the Bde or Bayesian Dirichlet Equivalent score. This score uses Bayesian analysis to evaluate and estimate a given dataset network. The idea of Bde is dependent on the BD (Bayesian Dirichlet) metric which is developed by Cooper and Herskovits (1992). The Dirichlet distribution is a multivariate distribution to describe the conditional probability of each variable in the network. The algorithm of K2 score is another posterior density which is proposed by Cooper and Herskovits (1992). The K2- like greedy search method will incrementally add a node to a parent set and find the best parent set to maximize the joint probability of the structure and the database

(Yang *et al.*, 2006). The log-likelihood (loglik) score is equivalent to the entropy measure used in Weka (Witten and Frank, 2005). The maximized likelihood $P(D|G)$ decomposed by the network structure and for the decomposable scores is the complexity penalty.

RESULTS AND DISCUSSION

Similar to Ge *et al.* (2010), the *bnlearn* package (R Team 2009) in R is used to run the structural learning algorithms. From the structural learning algorithms, there are seven different networks outcomes which are noncyclical. The arcs show direct dependent relationships between the connecting variables. However, the existence of conditional independence relationships is indicated by the absence of arcs (Ge *et al.* 2010). These diagrams also represent the logical cause and effect between the variables. Table 1 shows the numbers of edges and arcs for each pair of the learned networks. The "edges" represent the number of common links or edges (in either direction) for each learning networks structure. However, the "arcs" represent the number of common directed arcs between the nodes in these learned networks. Table 1 also shows the number of common links and arcs that are obtained in each network in the diagonal section. From Table 1 a number of nodes that were constructed or built are the same. The nodes with the common arcs for all models in these learned networks represent a strong relationship in between the connections in these nodes. The edges with strong relationships are Q1 to Q2, Q4

to Q5, Q5 to Q6 and finally Q11 to Q12. Besides that, the other nodes that show the weak relationships in between them are Q3, Q7, Q8, Q9 and Q10. Fig.2 shows all the learned networks of the various algorithms. The common arcs are shown in Fig.3. These common arcs show that there is only one way direction to the consecutive nodes in all these learned networks.

For instance, node Q5 links to node Q6. The connection of edges from Q5 to Q6 can be interpreted as students being sure of which method to be used when encountering a long mathematics question because they do not know what information is needed to handle the mathematics question. This happens because they do not understand the question and fail to transform their idea into mathematics symbol. Fig.3 shows the directly connected nodes. These links between the nodes represent common edges to all of the learned networks. Following this, we run again these seven learned network algorithms and set the common edges using Fig.3 as a white list for each learned networks. Then, we obtained the result for all the seven new learned networks

(after white list) in Fig.4. We also show the final result on the HC network in Fig.5.

By running all the algorithms, the result of scores for the seven algorithms are shown in Table 2. The obtained results are important for comparing the network from the algorithms. In this study, network scores are used because they select which network fitted the data best. Based on the results shown in Table 2, we highlighted the highest scores for the networks. Following the white list of all the learned networks and having set the arcs, we found the Hill – Climbing (HC) algorithm as having the best result for this study from Table 2. The arc strength is used to evaluate the strength for all the edges. Each edge will show the highest and the lowest score of the strength. The arc strength is used to measure the strength of the probabilistic relationships expressed by the arcs of a Bayesian network and it uses model averaging to build a network containing only the significant arcs (Scutari, 2010).

In Fig.5, the thicker arcs represent the stronger relationships between the nodes. These arcs also represent the highest values in arc strength compared with the others.

TABLE 1
Number of common edges/arcs between each pair of the learned networks

	Hc	Gs	Iamb	Fast. iamb	Inter. iamb	Mmhc	Rsmax2
Hc	11/11	8/1	6/1	6/2	6/1	5/3	8/8
Gs	-	13/7	6/2	6/2	6/2	5/0	11/1
Iamb	-	-	12/9	10/6	10/9	10/2	6/1
Fast. iamb	-	-	-	11/10	10/6	9/3	6/2
Inter. iamb	-	-	-	-	12/9	10/3	6/1
Mmhc	-	-	-	-	-	10/10	5/3
Rsmax2	-	-	-	-	-	-	11/11
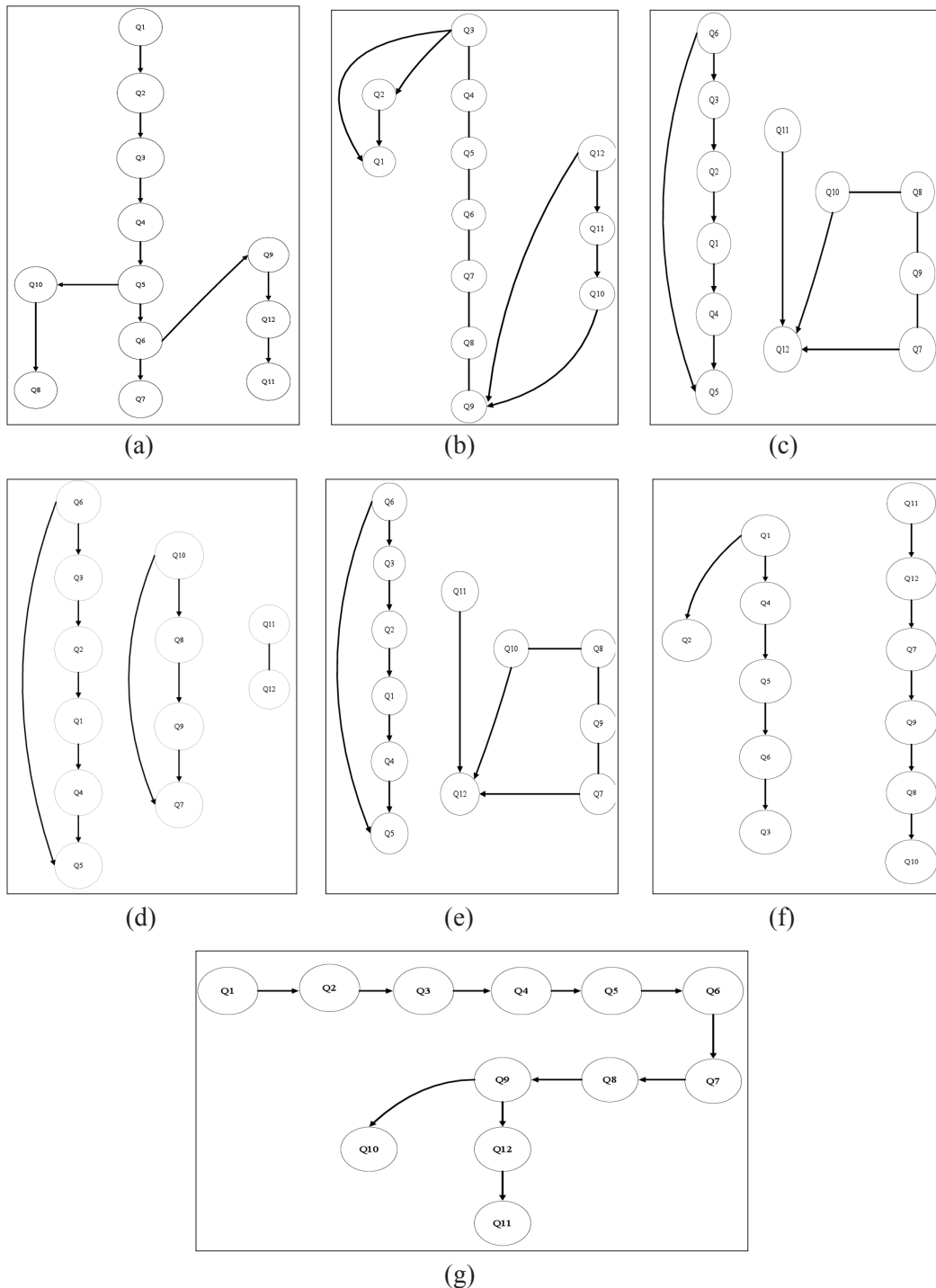
Fig.2: Network structures learned by selected algorithms. (a) Hill – Climbing; (b) Grow – Shrink; (c) Incremental Association Markov Blanket; (d) Fast Incremental Association Markov Blanket; (e) Interleaved Incremental Association Markov Blanket; (f) Max – Min Hill Climbing; (g) Restricted Maximization
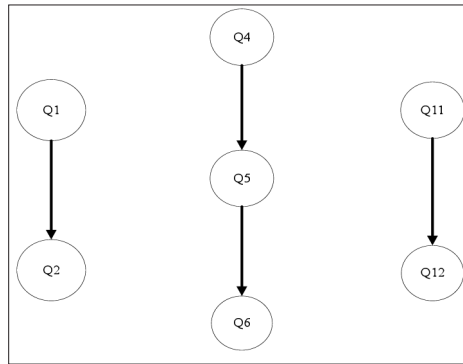
Fig.3: Common edges of all the learned networks

TABLE 2
The results of scores of all learned networks for each algorithm

	Aic	Bic	Bde	Loglik	K2
HC	**-20568.34**	**-21521.33**	**-21852.35**	-20200.34	**-20893.12**
GS	-21336.91	-24527.37	-23366.60	-20104.91	-21565.67
IAMB	-22943.70	-31106.29	-24796.8	**-19791.70**	-22091.64
Fast-IAMB	-20961.85	-22287.75	-22337.56	-20449.85	-21307.40
Inter-IAMB	-22943.70	-31106.29	-24796.8	**-19791.70**	-22091.64
MMHC	-20758.08	-21711.08	-21989.83	-20390.08	-21079.28
RSMAX 2	-20883.56	-21795.12	-22048.56	-20531.56	-21188.50

However, the thin lines that are shown in the network are edges that represent the supplementary edges. Based on the Fig.5, we displayed the stronger relationship and the highest value of arc strength in the final result of the learned network in Table 3.

TABLE 3
The stronger relationship between the nodes and the arc strength in the final result learned network

Edges	Arc strength
Q2 to Q12	198.92559
Q4 to Q6	186.66152
Q11 to Q12	113.60172
Q5 to Q6	102.7143

Table 3 is from the HC algorithm which gives the best scores among the seven learned networks except the log-likelihood scores. IAMB and Inter- IAMB both obtained the same highest score compared with the others. Therefore, the result from HC algorithm (from Fig.4(a) and in Fig.5) is the learned network from which we select the final result of this study. In Fig.5, the arc from node 2 to node 12 represents the strongest relationship among the nodes. Based on the questionnaire, due to students' abilities in solving the mathematics questions, they have difficulties with the complicated mathematical symbols and this causes students to have no confidence in
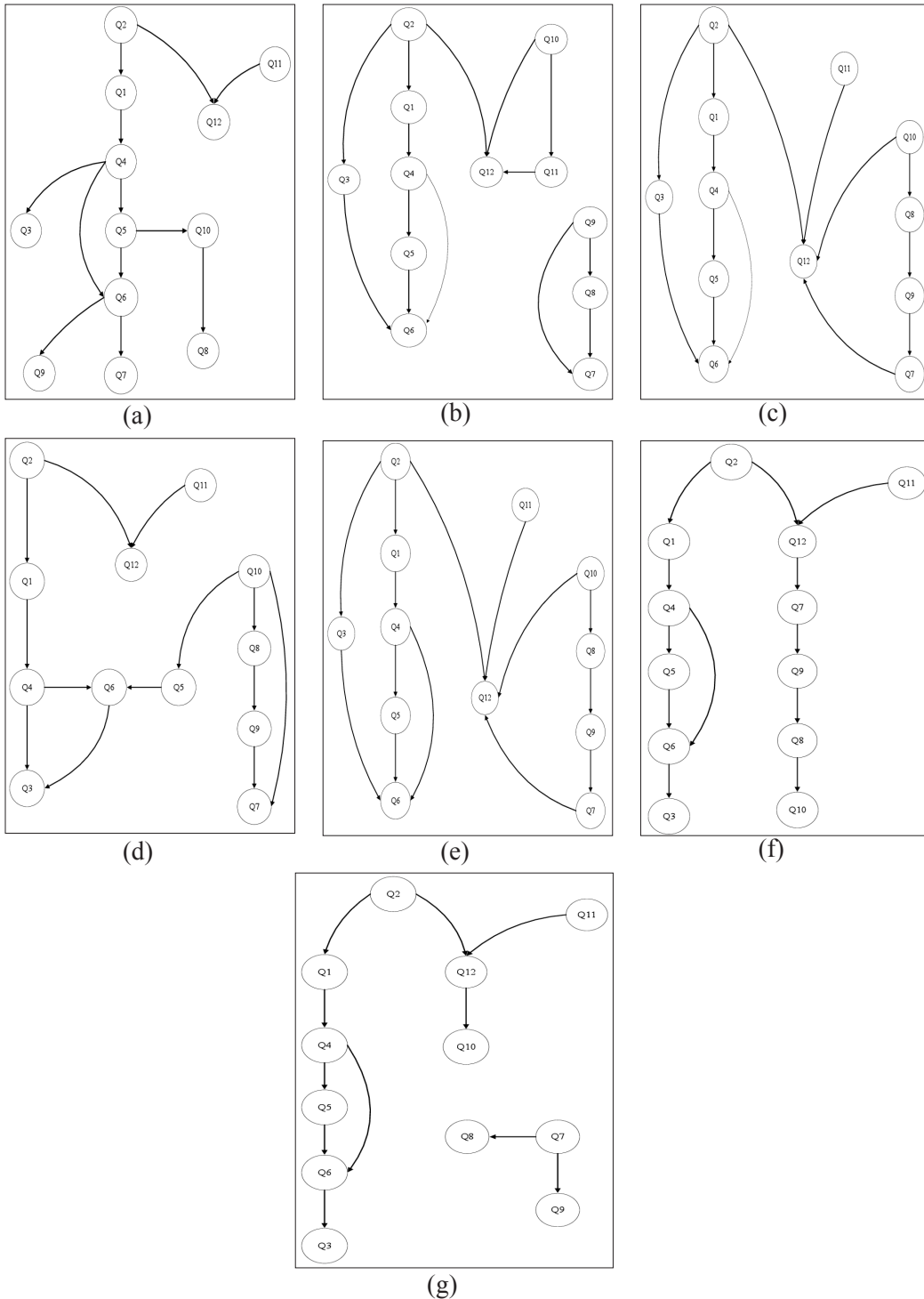
Fig.4: Network structures learned by selected algorithms after white list. (a) Hill – Climbing; (b) Grow – Shrink; (c) Incremental Association Markov Blanket; (d) Fast Incremental Association Markov Blanket; (e) Interleaved Incremental Association Markov Blanket; (f) Max – Min Hill Climbing; (g) Restricted Maximization
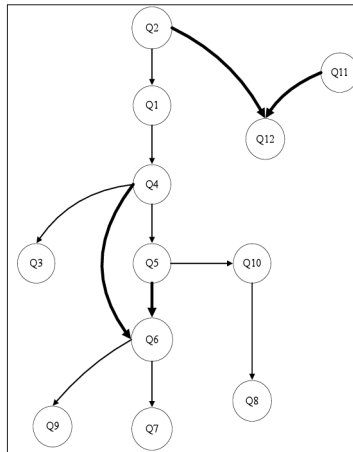
Fig.5: The final result of the score learned network using the Hill – Climbing algorithm.

coming out with a neat and complete solution in solving the mathematics question. The final result of learned network shows that this is a major factor that causes students to be poor in solving mathematics problems. Similarly in Kinzel (1999), students have difficulties in understanding and interpreting the symbolic notation used in algebra. Capraro and Joffrion (2006) claimed that middle-school students often demonstrated much stronger skills in solving formal and informal problems that require algebraic reasoning than in symbolizing equations. They also indicate those students' abilities to solve simple word problems with arithmetic and should be connected to the formal algebraic symbolic notation.

Furthermore, the arc from node 4 to node 6 shows the second major problem faced by students in this study. We found that students who lack understanding of the mathematics question requirement, failed to transform the question needed into mathematical symbols which causes

them to be not sure of which method to use if they are faced with a long mathematics question. Also in Ilany and Margolin (2010), language of symbols, concepts, definition and theorems are considered mathematical language. They also mentioned that the mathematical language needs to be learned and it cannot be developed naturally like a child's natural language. The arc from Node 11 to node 12 gives the third highest score for the strength in Table 3. Students always make careless mistakes in the process of calculation during their attempt to solve the mathematics questions. The mistakes that they make will lead them to be weak and poor in coming out with a complete solution in solving mathematics problem. Students are unable to write the appropriate solution for the mathematics question given because they do not plan well and organize in solving mathematics problem. From Montague (1988), some students with learning disabilities may have learned and organized correct strategies and conceptual

knowledge to solve problems, but then fail to carry out them as is required.

CONCLUSION

The major problem solving in mathematics that are faced by students in Penang Matriculation College is due to their understanding of mathematical symbols that influence their abilities in solving mathematics problems. From the Bayesian Network, this score is the highest in the final result of learned network. Owing to the complicated and difficult mathematical symbols, the students are unable to perform their solution well or in other words; they cannot solve the mathematics question with a neat and complete solution. Furthermore, our study also revealed that students in Penang Matriculation College are confused with the method to be used when they are faced with long mathematics questions. We can also conclude that the students are afraid of the complicated mathematics symbols and do not really understand the questions needed when they try to solve the questions. This study also revealed that students are quite weak in transforming the information from mathematics questions into the mathematics language.

Bayesian Network is a powerful tool to trace problems in many areas such as in the industry and data mining. In our study, we use Bayesian network algorithms in the mathematics learning situation to identify the problems which arise. The results obtained show that the students in Penang Matriculation College have difficulty in understanding complicated

mathematics symbol which causes them to be not confident in coming out with a neat and complete mathematical solution. Having identified mathematics symbols as the root cause of the problem in mathematical problem solving, future and subsequent work can be carried to help students based on their understanding of the various types of mathematics symbols.

ACKNOWLEDGEMENTS

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APPENDIX 1

The Questionnaire for Mathematics Problems Faced By Matriculation Students

This questionnaire is designed to collect data regarding mathematics problems faced by matriculation students.

You are required to answer all the questions sincerely. There is no right or wrong answers. Please circle your preference.

Guideline: 1 = Strongly Disagree
                  2 = Disagree
                  3 = Neutral
                  4 = Agree
                  5 = Strongly Agree

1. I am lacking in ability to solve the question given because I do not understand the words/ phrases in mathematics.   1 – 2 – 3 – 4 – 5

2. Complicated mathematics symbols in solving mathematics question reduces my ability.   1 – 2 – 3 – 4 – 5

3. Long and complicated / tough questions hinder me from solving the mathematics question.   1 – 2 – 3 – 4 – 5

4. I do not understand the question requirement and fail to transform to mathematics symbol.   1 – 2 – 3 – 4 – 5

5. I do not know/ am not sure what information is needed at tackling mathematics question.   1 – 2 – 3 – 4 – 5

6. I am not sure of which method to be used when faced with long mathematics question.   1 – 2 – 3 – 4 – 5

7. I cannot change to an alternative method when I am stuck half way with the method used to solve question.   1 – 2 – 3 – 4 – 5

8. I always make mistakes when solving mathematics question because I am not familiar with the basic operation of mathematics $(+, -, x, \div)$.   1 – 2 – 3 – 4 – 5

9. I am nervous when faced with long mathematics question because I am unable to connect/ to link the theory that I have learned.   1 – 2 – 3 – 4 – 5

10. I am always forget the symbol to be used to solve mathematics question.   1 – 2 – 3 – 4 – 5

11. I am always careless in the process of calculation when solving mathematics questions.   1 – 2 – 3 – 4 – 5

12. I have no confidence in coming out with a neat and complete mathematics solution.   1 – 2 – 3 – 4 – 5

Socioeconomic Status, Physical Activity, Physical Fitness and Sedentary Activity in 7-to 11-year-old Iranian Children

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ABSTRACT

This study aimed at Evaluating the socioeconomic status (SES), physical activity (PA), physical fitness and sedentary activity in Iranian children aged 7-11 years. We analysed the following cross-section data from a selected sample of children (N=766) aged 7 to 11 years: age, anthropometric characteristics, SES, PA, ten physical fitness tests and sedentary activities. 29.4% and 31.3% of the children reported TV watching and video playing daily time (TVVPT) higher than 3 and 4 hours/day, respectively. Fat mass (FM) was significantly related to PA (r=-0.165; P<0.01), cardiorespiratory fitness (CRF) (r=-0.793; P<0.01), and TVVPT (r=0.200; P<0.01), after controlling for age and SES. Although, the children by high-SES represented higher height, weight, body mass index, waist circumference, FM and fat free mass than the children by mid-SES and low-SES, but the differences were not significant among them. Although, PA was not different among the children by SES, however, the children by high-SES represented significant higher TVVPT than the children by mid-SES and low-SES (p<0.05); and had significant lower CRF than the children by mid-SES (p<0.05). The results of this study indicated higher sedentary activities and lower CRF in the children by high-SES in comparison to the children by mid-SES and low-SES. Furthermore, regarding the relationship between FM with PA, CRF and sedentary activity, increased PA and decreased sedentary behavior in children as much as possible should be considered.

Keywords: Fat mass, body mass index, TV watching, cardiorespiratory fitness

INTRODUCTION

Regular physical activity (PA) is associated with improved physical and psychosocial well-being in children (Boreham and Riddoch, 2001), while frequent television viewing appears detrimental (Bar-on, 2000).

The family is a potentially important source of influence on children's PA and television viewing (Ritchie *et al*., 2005). There is inconsistent evidence for an association between socioeconomic status (SES), the most commonly investigated aspect of family circumstance, and the physical activity of preadolescent children. A 1999 review (Sallis *et al*., 2000) of studies considering SES and PA associations in 4–12 year olds found positive, negative and no associations were reported. On the balance of evidence the review concluded there was no association. Even recent studies, using objective assessments of PA (e.g., accelerometer, pedometer) still report equivocal results (Kelly *et al*., 2006; Eisenmann and Wickel, 2009).

On the other hand, speed-agility, muscular fitness, and cardiorespiratory fitness (CRF) are considered important health related markers already in youth (Pavon *et al*. 2010; Ortega *et al*., 2008b). Genetics greatly determines physical fitness (Bray *et al*., 2009), but there is little doubt that environmental factors also play an important role. Socioeconomic status is associated with several health outcomes (e.g., birth weight, obesity, diet, etc.) as mentioned by Ramsay *et al*., (2008), and with mortality rate (Berkman, 2005). To better understand the specific role of different indicators of socioeconomic status on health-related fitness markers will enable a more efficient physical fitness promotion. In this regard, the association between socioeconomic status and fitness was investigated in different areas (Freitas

et al., 2007; Pavon *et al*., 2010 21; Mutunga *et al*., 2006) with contradictory results. These studies concluded that studies from a widespread vision and including populations from different countries (by different Social and cultural contexts) are required to facilitate a better understanding.

Moreover, the prevalence of child obesity is rapidly increasing worldwide (World Health Organisation, 1998). The specific causes of overweight and obesity are varied and complex but, at a population level, are consistent with sustained positive energy balance. Sedentary behavior and low levels of PA may, in part, explain the rising prevalence of childhood overweight and obesity (Wang and Lobstein, 2006).

A simultaneous assessment of weight status, anthropometric variables, PA, physical fitness and sedentary behavior among children by different SES especially in Iran is scanty. Therefore, the primary aim of this study is to assess comparison of anthropometric characteristics, physical fitness tests, PA and sedentary behavior of the sample of 7-11 year old boys in Ardabil, Iran by different SES. Furthermore, the secondary aim is to evaluate possible relationship between adiposity with PA, CRF and sedentary behavior in the selected sample of children.

METHODOLOGY

Participants

The present analyses included data from 766 school boys, aged 7 - 11 years (mean 9.2 ± 3.4 years), attending the 1th- 5th grade classes of primary schools which were selected

with stratified sampling in urban areas of Ardabil's capital, North West of the Iran. Ardabil's capital stands about 70 km from the Caspian Sea with an area of 18011 km², and 537920 inhabitants. The nature and purpose of the study were explained to parents before consent was obtained, and participation was on a voluntary basis. The measurements and the tests that the children underwent were carried out during regularly scheduled physical education classes. The age of the subject was determined from their date of birth in their school register. The age was rounded off to the nearest whole number. This study was approved by the Ethical Committee of the Ardabil Department of Education, Iran (?).

Anthropometric variables

Weight was measured in underwear and without shoes with an electronic scale (Type SECA 861) to the nearest 0.1 kg, and height was measured barefoot in the Frankfort horizontal plane with a telescopic height measuring instrument (Type SECA 225) to the nearest 0.1 cm. Body mass index (BMI) was calculated as body weight in kilograms divided by the square of height in meters. Cut-off points for BMI defining, underweight, normal weight, overweight and obesity were identified by using the International Obesity Task Force (IOTF) BMI cut-off points (Cole *et al.*, 2005; Cole *et al.*, 2000). Waist (at the level of the umbilicus and the superior iliac crest) was measured to the nearest centimeter using flexible tape rule, while the subject was standing erect. In order to fat% evaluation,

Tricipital skin folds (TSF) and subscapular skin folds (SESF) were measured three times on the right side of the body using an adipometer (Lange, Beta Technology Incorporated, Cambridge, USA) and the mean of all three measurements was used for analysis. Body adiposity was then estimated using the equation and sex-specific reference values proposed by (Lohman, 1986; Lohman, 1987), based on summing the two skin-fold measurements. Body Fat percentage and then Fat mass calculated according to the following equations:

Prepubescent white males:
$\%BF = 1.21(SS^*) - .008(SS)^2 - 1.7$
$^*SS$ = Sum of triceps and subscapular skinfolds

For a sum of triceps and subscapular > 35mm
All males: $\%BF = 0.783(SS) + 1.6$

Fat mass (FM) = weight * fat percentage/100

TV watching and video playing daily time (TVVPT)

Children and their parent(s) were given a written questionnaire, which was filled out by the parent(s) only if the child was aged less than 8 years, and both parent and child together if the child was between the ages of 8 and 11. If completed by parent and child together, they were instructed to agree on and record a single estimate of average daily time spent watching TV (time spent watching TV, videotapes, or DVDs) and playing video game (time spent on a home

computer or video game). Parent estimates of child viewing and playing time have been shown to be reliable predictors of child screen time (Anderson *et al*., 1985). In order to further ensure the validity of TVVPT estimates, we verbally reviewed and confirmed the time estimate obtained from the questionnaire during the clinical interview with the parent(s) and, if aged over 8 years, the child.

Physical activity (PA)

Physical activity for children was measured using the PA Questionnaire - Children (PAQ-C) (Kowalski *et al*., 1997). The PAQ-C is used to assess the PA behaviors of the participants at different times and places (i.e., during school, after school, recess, weekend, etc.) during the previous seven days. Scoring is based on a 5-point Likert type scale, with an overall PA score derived from the mean of each scored item. Greater levels of PA are indicated by higher scores and vice versa. The PAQ-C has been tested and re-tested and results have shown that the instrument is reliable and valid measure of PA for children during the school year. Kowalski *et al*. (1997) reported moderately high validity coefficients for the PAQ-C when compared to a variety of criterion measures, including activity ratings, recall questionnaires, and activity monitors (r = .39 to .63,). The test retest reliability for the PAQ-C ranged from r = 0.75 to 0.82 and internal consistency reliability values (coefficient alpha) ranged from 0.81 to 0.86 (Crocker *et al*., 1997). This instrument is widely used in research in order to assess PA of large and small populations at low cost (Kowalski *et al*., 2007).

Physical fitness measurements

Physical fitness was determined using ten physical fitness tests which were completed during regularly scheduled physical education classes. At the beginning of taking each test, the examiner explained the testing procedures to the participants in details.

1. **Cardiorespiratory fitness (CRF):** The 1-mile run test was used to assess VO_{2max} (Welk and Meredith, 2008). The objective of the mile run was to cover a mile in the shortest time possible. Students were encouraged to run throughout the test and to take walking breaks only as needed. Physical education instructor also reminded children to avoid starting too fast to avoid premature fatigue. This test has shown to be valid and reliable for the prediction of the VO_{2max} in children (Welk and Meredith, 2008). The CRF is then calculated according to the following formula (Welk and Meredith, 2008):

   VO2max = (0.21 * age * gender) – (0.84 * BMI) – (8.41 * time) + (0.34 * time * time) + 108.94
   Gender = 1 for males and 0 for females; Time is in minutes

2. **Sit ups:** Maximum number of sit ups achieved in 60 seconds. This test measures the endurance of the abdominal muscles (Welk and Meredith, 2008).

3. **Modified pull ups:** To measure upper arm and shoulder girdle strength and muscular endurance (Welk and Meredith, 2008).

4. **Pushups:** This test measures upper arm and shoulder girdle strength/endurance (Welk and Meredith, 2008).

5. **Sit and reach:** Reaching as far as possible from a sitting position. This test measures the flexibility of the hamstrings, buttocks, and lower back (EUROFIT, 1988).

6. **Standing long jump**: Jumping for distance from a standing start. This test measures explosive strength (EUROFIT, 1988).

7. **Hand grip**: Squeezing a calibrated hand dynamometer as forcefully as possible with the dominant hand. Static strength is assessed (EUROFIT, 1988).

8. **Vertical jump:** The vertical difference in centimeters (cm) between the original trace (extension, standing on the toes), before jumping, and the trace after the jump. This test measures explosive strength (EUROFIT, 1988).

9. **4×10m shuttle run test**: Speed of movement, agility and coordination assessment (Ortega *et al*., 2008a).

10. **30-meter sprint (from standing position):** This test measures speed.

Socioeconomic status

The socioeconomic status (SES) of the families was estimated by using the Hollingshead 4-Factor Index of Social Status (Hollingshead, 1975; Cirino *et al*., 2002). SES was calculated on the basis of education and occupation levels. SES index values (range: 8–66) were categorized as high (values of 48–66), moderate (values of 28–47), or low (values of 8 –27) (Hassan *et al*., 2006).

Data Analysis

Data were screened for problems of skew, kurtosis, and outliers. Descriptive statistics were run on all variables. The primary independent variable was socioeconomic status defined as high-SES (values of 48–66), mid-SES (values of 28–47), and low-SES (values of 8 –27) which was estimated by using the Hollingshead 4-Factor Index of Social Status (Hollingshead, 1975; Cirino *et al*., 2002, Hassan *et al*., 2006). The dependent variables were physical fitness tests, PA, anthropometric variables, and TVVPT. Chi-square analyses were used to detect differences of underweight, normal weight, overweight and obesity rates among the children by SES. One-way analyses of variances (ANOVA) were carried out to assess differences in the anthropometric variables, TVVPT, physical fitness tests, and PA scores among the children by low-SES, mid-SES, and high-SES of this study. The Scheffe correction was used for multiple comparisons. Pearson correlation coefficient was used to assess the relationship between fat mass and selected variables. For further evaluation, Partial correlation coefficient was used to assess relationship between fat mass, VO_{2max}, PA, and sedentary behavior by controlling for age and SES. All calculations

were performed using SPSS v.18.0 software for Windows. The significance level was set at p< 0.05.

FINDINGS AND DISCUSSION

All variables approximated a normal distribution (skew: <3, kurtosis: <10). The Hollingshead Index indicated that 9.7% families were of high-SES, 66.4% of mid-SES, and 23.9% of low-SES (see Table 1). Table 1 shows the prevalence of underweight, normal weight, overweight and obesity according to SES. The results of this table show that the prevalence of underweight, normal weight, overweight and obesity is 10.7%, 71%, 14.1% and 4.2%, respectively. Chi-square analyses indicated significant difference for the prevalence of underweight, overweight and obesity among the children by SES (P<0.05).

The primary aim of this study was to evaluate anthropometric characteristics, PA, physical fitness and sedentary activity in a sample of 7-11 year boys by different SES. Although the results (Table 2) showed that the children by high-SES had higher weight, FM, BMI and WC than the other counterparts, however, ANOVA analyses indicated that there was no significant difference for the anthropometric variables (height, weight, BMI, WC, FM and FFM) (p>0.05). Nonetheless, the results showed significant difference for the overweight/ obesity and underweight prevalence among the children by SES (see Table 1). By referring to Table 1 of this study it was showed that the rate of underweight in the children by low-SES and high-SES was 9% and 1.9%, respectively; and in contrast the rate of obesity in the children by low-SES and high-SES was 0% and 9.7%, respectively. Tharkar and Viswanathan (2009) found that high-SES children had higher height, weight and waist circumference than low-SES group. Furthermore, they reported that Prevalence of overweight and obesity was significantly higher among the high-SES children. In contrast, McMurray *et al*. (2000) and Poskitt *et al*. (1993) found low-SES adolescents were more likely to be overweight and obese than their high-SES counterparts. Wang (2002) reported that children by higher SES were more likely to be obese in China and Russia, but in the US low-SES children were at a higher risk. He concluded that prevalence of obesity varied remarkably across countries with different socioeconomic development levels.

TABLE 1
Prevalence of underweight, normal weight, overweight and obesity among the children by SES

	Low-SES (n=183)	Mid-SES (n=509)	High-SES (n=74)
Underweight (n=82)	9% (n=16.5)	14% (n=71.3)	1.9% (n=1.4)
Normal weight (544)	70% (n=128.1)	67.4% (n=343.1)	69.2% (n=51.2)
Overweight (n=108)	21% (n=38.4)	14.5% (n=73.8)	19.2% (n=14.2)
Obese (n=32)	0% (n=0)	4.1% (n=20.8)	9.7% (n=7.2)

TABLE 2
Comparison of various anthropometric variables among the children by different SES

	Low-SES (1) † (n=183)	Mid-SES (2) (n=509)	High-SES (3) (n=74)	F	P
Height(cm)	131.5±8.8	132.8±8.8	132.1±6.3	1.06	NS
Weight(kg)	29.8±8.5	30.3±8	31.3±5.1	0.62	NS
BMI(kg/m$^{2)}$)	16.9±2.7	17±2.9	17.9±2.6	2.8	NS
Fat Mass(kg)	7.8±4.9	7.7±4.9	8.4±3.8	0.5	NS
FFM(kg)	22.1±4.1	22.7±3.9	22.9±3	1.3	NS
Waist circumference (cm)	59.6±8.6	59.5±8.1	61.7±6.7	1.65	NS

Significance of differences was evaluated by ANOVA for all variables. *Significant at <0.05; **Significant at <0.01.
† Numbers show groups: Low-SES (Group 1), Mid-SES (Group 2), High-SES (Group 3)

The present study results showed that except VO_{2max} and sit ups all the other physical fitness variables were not different among the children by different SES (see Table 3 and 4). The children by high-SES did significantly better sit ups than the children by low-SES (p<0.05); however, had lower VO_{2max} than the children by mid-SES (p<0.05). Contradictory results between SES and physical fitness have been reported (Freitas *et al*., 2007; Pavon *et al*., 2010, p. 21; Mutunga *et al*., 2006). Freitas *et al*. (2007) reported adverse relationship between socioeconomic status and CRF (12 min walk-run) and muscular strength (standing long jump and bent arm hang); and positive association between socioeconomic status and speed-agility performance (5 x 10 m shuttle run test) in boys. They also reported a higher upper-body muscular strength (handgrip) in those boys with medium socioeconomic status compared to those with lower socioeconomic status (Freitas *et al*., 2007). Pavon *et al*. (2010) found positive associations between socioeconomic status and CRF (20 m shuttle

run test), lower-body muscular strength (standing long jump, squat jump, counter movement jump, Abalakov jump) and one upper-body muscular strength test (bent arm hang), while no associations for speed-agility (4 x 10 m shuttle run test) and other upper-body muscular strength (handgrip) were found (Pavon *et al*., 2010). Mutunga *et al*. (2006) reported higher CRF (20 m shuttle run test) in boys and girls with higher socioeconomic status compared to those with lower socioeconomic status. Therefore, discrepancies among the studies might be due to the specific social and cultural contexts of each country, together with the different methodologies used to assess socioeconomic status and physical fitness. Furthermore, it should be stated that the means of CRF among the children by SES are close to each other, and the significant difference of CRF between the children by mid-SES and high-SES might be because of high sample size.

The results of this study found no difference for PA among the children by SES (see Table 4). However the previous

TABLE 3
Comparison of physical fitness variables among the children by SES

	Low-SES (1) † (n=183)	Mid-SES (2) (n=509)	High-SES (3) (n=74)	F	P
One-mile(s)	664.8±116	646.9±111	667.3±113	1.2	NS
Sit and reach(cm)	29.5±6.1	28.2±5.9	27.2±6.7	3	NS
Vertical jump(cm)	21.2±4.6	22±4.2	20.5±4.6	2.7	NS
Standing long jump(cm)	114.2±21.6	119.2±23.2	115.6±29.4	1.9	NS
Hand grip(kg)	19±6	19.2±6.2	18.1±4.5	0.8	NS
Time in run speed (s)	6.8±0.7	6.7±0.8	6.7±0.6	1.7	NS
Time in 4×10m shuttle run (s)	13.8±1	13.9±1.2	13.8±1.2	0.2	NS
Pull ups(n)	10±6	9.4±6.9	8.5±6.4	0.8	NS
Pushups(n)	13.1±10.1	13.2±10.2	9.5±6.9	2.95	NS
Sit ups(n)	17.3±9.3	19.2±10.7	21.8±11.5	3.2	1≠3*

Significance of differences was evaluated by ANOVA for all variables. *Significant at <0.05; **Significant at <0.01.
† Numbers show groups: Low-SES (Group 1), Mid-SES (Group 2), High-SES (Group 3).

literatures have reported equivocal findings concerning the relationship between SES and PA levels in children and adolescents (Inchley *et al*., 2005; Kelly *et al*., 2006). Even recent studies, by using objective assessments of PA (e.g., accelerometer, pedometer) reported equivocal results (Eisenmann and Wickel, 2009). There are several possible reasons for differences in habitual PA to exist across socio-economic backgrounds, including behavioral, socio-cultural, and/or biological factors. For example, socio-environmental influences may include accessibility to sports/exercise facilities as well as safety (Lovasi *et al*., 2009). However, some studies have argued that SES does not influence overall PA levels in children and adolescence despite a higher participation in formal sports in children and adolescents with a higher SES (Macintyre and Mutrie, 2004). For example, Macintyre and Mutrie (2004) indicated that

total energy expenditure was not higher in higher SES youth, due to lower participation in unstructured activities. Besides the often cited socio-environmental reasons, biological aspects have also been shown to influence habitual PA (Lightfoot, 2008).

The results of this study (see Table 4) showed that TVVPT of the high-SES subjects was significantly higher than both low-SES and mid-SES subjects (p<0.05). Furthermore, in our study, Ardabilian schoolboys reported higher TVVPT (29.4% >3 h/day; and 31.3% >4 h/day) than adolescents from some developed countries, where a 24.7% of US (Eisenmann *et al*., 2002) and 22–24% Finnish (Tammelin *et al*., 2007); or less than some other countries such as 36–38% of Welsh (Vereecken *et al*., 2006) which reported watching TV >4 h/day. In contrast to this study some studies reported that children from a low SES show a trend of lower PA levels and spend more

TABLE 4
Comparison of TVVPT, physical activity and VO2max among the children by SES

	Low-SES (1) † (n=183)	Mid-SES (2) (n=509)	High-SES (3) (n=74)	F	P
TVVPT (min)	180.7±88	180.6±86.7	218.1±70.1	4.45	1≠3*, 2≠3*
Physical activity (score)	3.2±1.6	3.1±1.75	3.25±1.55	0.3	NS
VO$_2$max (ml/kg/min)	46.3±3.2	46.5±3	45.1±3.6	3.7	2≠3*

Significance of differences was evaluated by ANOVA for all variables. *Significant at <0.05; **Significant at <0.01.
† Numbers show groups: Low-SES (Group 1), Mid-SES (Group 2), High-SES (Group 3)

TABLE 5
Pearson correlation and Partial correlation (controlling for age and SES) between fat mass and selected variables

	Pearson correlation Fat mass	Partial correlation (controlling for age) Fat mass	Partial correlation (controlling for age and SES) Fat mass
Age (year)	0.397**	*********	*********
Physical activity (score)	-0.120**	-0.130*	-0.165**
VO$_2$max (ml/kg/min)	-0.700**	-0.792**	-0.793**
TVVPT (min)	0.162**	0.169**	0.200**

*Significant at <0.05; **Significant at <0.01.

time in sedentary behavior (TV viewing) than high SES children (Drenowatz *et al*., 2010). Not also TV watching time, but also, video playing daily time was taken in this study. So, it is probable that higher accessibility for having video playing instruments in the high-SES group might be the cause of having higher cumulative TVVPT than their mid-SES and low-SES counterparts. Moreover, specific social and cultural contexts of each country should be considered. However, the results of this study showed significant direct relationship between fat mass with TVVPT, and adversely significant negative relationship with PA and CRF, even after controlling for age and SES (see Table 5). Physical activity (PA) is a health enhancing behavior:

when practiced regularly, PA reduces the risk for a range of chronic disease. It helps building strong bones, healthy joints, a strong heart, a good mental health and prevents today's major public health concern – obesity (Ferreira *et al*., 2007; Strong *et al*., 2005). It has been reported that Physical inactivity is a strong contributor to overweight. Sedentary activities such as excessive television viewing, computer use, video games, and telephone conversations should be discouraged. Reducing sedentary behaviors to <2 hours per day is important to increasing PA and to health (Strong *et al*., 2005).

Nonetheless, the main limitation of this study is its cross-sectional nature. Moreover, this study couldn't take subjects of both

sexes, and, couldn't have a direct measure of body composition. Future similar studies should consider using such a measure to provide a more complete assessment.

CONCLUSION

In summary, this study showed that although anthropometric characteristics of 7-11 year Old Iranian boys were not significantly different among the children by SES, but higher sedentary behavior and lower CRF was observed in the children by high-SES. Furthermore, by considering the sedentary behavior, PA and VO_{2max}'s significant relationship to adiposity, it should be stated that increasing PA and decreasing sedentary behavior in children as much as possible should be considered. In addition to home and parents important role, school can be a good place and its managers and teachers can be good advisors for reminding and encouraging the children to have higher PA and adversely lower sedentary behaviors. However, because social and cultural contexts are often country-specific; therefore, studies from a widespread vision and including populations from different countries are required to facilitate a better understanding about the relationship between socioeconomic status with anthropometric characteristics, PA, physical fitness and sedentary activity.

ACKNOWLEDGEMENTS

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4. The authors decide whether and how to address the reviewers' comments and criticisms and the editor's concerns. The authors submit a revised version of the paper to the executive editor along with specific information describing how they have answered' the concerns of the reviewers and the editor.

5. The executive editor sends the revised paper out for review. Typically, at least one of the original reviewers will be asked to examine the article.

6. When the reviewers have completed their work, the executive editor in consultation with the editorial board and the editor-in-chief examine their comments and decide whether the paper is ready to be published, needs another round of revisions, or should be rejected.

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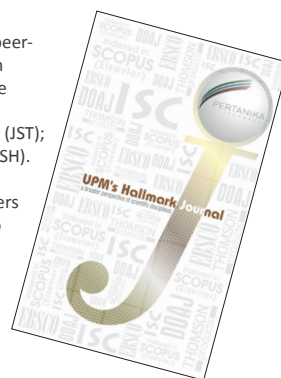
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