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& HUMANITIES

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A special issue devoted to
Integrating Values with Science, Engineering and Technology

Guest Editor
Abdur-Rahman Mohamed Amin



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Journal of Social Sciences & Humanities

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Pertanika is an international peer-reviewed journal devoted to the publication of original papers, and it serves as a forum for practical approaches to improving quality in issues pertaining to tropical agriculture and its related fields. Pertanika began publication in 1978 as the Journal of Tropical Agricultural Science. In 1992, a decision was made to streamline Pertanika into three journals to meet the need for specialised journals in areas of study aligned with the interdisciplinary strengths of the university.

The revamped Journal of Social Sciences & Humanities (JSSH) aims to develop as a pioneer journal for the Social Sciences with a focus on emerging issues pertaining to the social and behavioural sciences as well as the humanities, particularly in the Asia Pacific region. Other Pertanika series include Pertanika Journal of Tropical Agricultural Science (JTAS); and Pertanika Journal of Science and Technology (JST).

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Pertanika is the official journal of Universiti Putra Malaysia. The abbreviation for Pertanika Journal of Social Sciences & Humanities is *Pertanika J. Soc. Sci. Hum.*

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A special issue devoted to
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Guest Editor
Abdur-Rahman Mohamed Amin

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Preface

This special issue of the *Pertanika Journal of Sciences and Humanities (JSSH)* consists of 10 manuscripts that were originally presented at the International Conference of Management, Social Sciences and Humanities (ICMeSH 2012). The conference was organised by the Department of Management and Humanities, in conjunction with the World Engineering, Science and Technology Congress 2012 (ESTCON2012) hosted by Universiti Teknologi PETRONAS at the Kuala Lumpur Convention Centre from 12 to 14 June 2012. ESTCON2012 saw eight conferences running concurrently.

ICMeSH2012 attracted local and international researchers who shared their knowledge, experience and perspectives that were qualitative and quantitative in nature on issues that covered a broad spectrum of fields.

Echoing the theme of the Conference, namely, *Integrating Values with Science, Engineering and Technology*, this special issue compiles interdisciplinary research papers. These papers have undergone a rigorous review and editorial process. The 10 papers provide insights into the areas of behaviour, education, economics, religion and technology. These areas form a significant link between the social sciences and humanities with engineering and technology.

The timely publication of these selected papers in this special issue would not have been possible without the full commitment of members of the editorial board, guest editors, contributors and the ICMeSH2012 team. Also a special thanks to the Head of Department for Management and Humanities, Universiti Teknologi PETRONAS, Associate Professor Dr Shahrina Md Nordin for her support in the publication of this Special Issue.

Our gratitude also extends to Dr Nayan Kanwal, Chief Executive Editor of **Pertanika** Journals, and Journal Officer, Ms Erica Kwan Lee Yin, and to the Journal Division, UPM Press, for their strong support.

Guest Editorial Board

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Communicative Competence in Technical Oral Presentation: Perspective of ESL Educators and Professional Engineers

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ABSTRACT

Communicative competence is one of the most highly sought after skills of prospective graduates among employers. In spite of its importance, the notion of communicative competence has been deemed fuzzy in Communication and Engineering studies. This fuzziness has undoubtedly led to tensions among stakeholders like educators and professional engineers across disciplinary tenures in interpreting the said notion. The study seeks to investigate the perceptions and understanding of educators and professional engineers of the notion in terms of two main elements of communicative competence: linguistic and rhetorical competence. The educators are language lecturers who conduct a speaking course for final-year Engineering-project students while the professional engineers are engineers from various Oil Producing Units (OPU) of the national oil company, PETRONAS, who have been selected as examiners to assess the said students' technical oral presentation. The professional engineers have been chosen by the university selection committee based on their years of working experience and professional expertise in engineering. Both language lecturers and the professional engineers were interviewed to gauge their perceptions on linguistic and rhetorical features deemed necessary to enhance communicative competence for the workplace. Both groups articulated awareness of the similarities and differences between the sub-sets of communicative competence, namely, technical, disciplinary, rhetorical style, interactive and interpersonal competence. Sublime differences in the way educators and professionals from different disciplines perceive communicative competence indicate possible reference to learning theory. Despite such disparity, pedagogical efforts are required to enhance communicative competence on such opportune platforms prior to the graduates' entry to the workplace.

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INTRODUCTION

For effective workplace participation to occur, employers accord grave importance to communication skills as being one of the most important workplace competency requirements expected of engineering students (Venkatesan & Ravenell, 2011). The ability to possess and utilise such skills competently is deemed an asset to any professional workplace organisation as such skills enhance workplace productivity in the global engineering workplace of the 21st century (Davis, 2010). The concept of effective communication skills is synonymous with the notion of communicative competence. Communicative competence is associated with one's adaptation of a communication situation by demonstrating the use of skills in appropriate knowledge relevant to the communication situation and context (Lailawati Mohd. Salleh, 2008). This means that communicative competence is linked with the demonstration of one's communicative skills, knowledge and ability particular to a communicative context. Thus, to be considered competent, a set of competency skills must be displayed.

LITERATURE REVIEW

The need to develop communicatively competent individuals is accentuated in the Engineering curriculum context following a pedagogical emphasis on learner outcomes

stipulated in the Outcome Based Education (OBE). OBE emphasises the need for students to exhibit learner outcomes at the end of an intended course. In fact, one of the learner outcomes specified in the Engineering curriculum indicates the need for engineers to “communicate effectively” (Hovde, 2005). This shift in pedagogical emphasis toward communicative competence has resulted in tensions among English as a Second Language (ESL) educators and professional engineers at the workplace. The cardinal utility of communicative competency requirement is not yet clearly identified (Cunningham, 2008). In addition, the literature resonates with the apparent divide between the stakeholders (i.e. ESL educators and professional engineers) over the communication skills requirement necessary for workplace technical and scientific oral communication needs (Hafizoah Kassim & Fatimah Ali, 2010; Morton, 2012).

As such, ESL educators and professional engineers are in a dilemma over the best mix of subsets of communicative competence needed to create that magic for engineering students in technical oral presentations. What then constitutes the best mix of communicative competence sub-sets necessary for effective technical oral presentations? Such tensions between ESL educators and professional engineers on prospective students' learner outcomes are indicated in communicative competency studies which reveal varying competency requirements among engineering students. Among the sub-sets of communicative

competence that prospective engineers should possess are i) technical, ii) linguistic oral immediacy, iii) meta-cognitive and iv) rhetorical explanatory competence (Bhattacharyya, 2012a).

Technical competence refers to content mastery, application of technical knowledge through use of specific technical language and jargon in discussion points of a presentation (Robinson *et al.*, 2005). Linguistic oral immediacy suggests use of interactive language, visual language, analogies and humorous experiences to create that sense of connectedness with the audience (Dannels, 2009). Meta-cognitive competence is associated to “one’s knowledge concerning one’s own cognitive processes and products or anything related to them” (Kalaimani & Kaliamoorthy, 2007). Rhetorical explanatory competence, on the other hand, refers to the presenters’ ability to justify, interpret, apply and rationalise decision-making judgments based on personal motivation (Dannels, 2009). The study implies a combination of selected linguistic and rhetorical competence to be used in technical oral presentations.

Another study mentions the importance of technical and oral immediacy competence as essential communicative competence features necessary for students’ performance in technical oral presentations (Bhattacharyya & Sargunan, 2009). In other words, discrepancy exists among ESL educators on the cardinal features required in the sub-sets of communicative competence. The studies indicate that varying perceptions on communicative competence dwell among ESL educators.

Similar concerns are also expressed over competency requirements from the engineers’ perspective. A study expressed the importance of interactive competence (Bhattacharyya & Zullina Hussain Shaari, 2012). Other studies argue about the need for critical thinking, decision-making competence and communication skills as essential qualities required of prospective graduates (Venkatesan & Ravenell, 2011). Others emphasise non-technical skills like communication skills as an essential requirement in engineering education studies (Bhattacharyya, 2012b; Zareva, 2013). Thus, this study is undertaken to ascertain communicative competency requirements as perceived by the stakeholders involved in technical oral presentations. Such knowledge enables stakeholders (i.e. ESL educators and professional engineers) to attain their own goals within the said community of practice as stipulated in the learning theory (Lave & Wenger, 1991).

In addition, concerns are also expressed regarding the English Language for Specific Purpose (ESP) curriculum design of engineering students involved in oral presentations. Studies indicate the need to relook at specific language and communication genre aimed at meeting the needs and communicative practices of particular learners or professional groups (Hyland, 2007). Hyland’s 2007 study stressed the need for educators to relook at tailoring language and communication courses to equip learners with essential ESP genre and discourse used in specific disciplines.

Contradictory to generic language courses, ESP is intended to cater for specificity with specific linguistic features and genre used in specific disciplines (Hyland, 2002). However, in reality, application of such specificity is increasingly threatened by the move towards generic skills transferable to other multidisciplinary fields. Such a move further curtails already limited ESP language materials used in terms of grammar, lexis, register, study skills, discourse and genre.

Thus, in the context of this study, the findings seek to ascertain queries on communicative competence in technical oral presentation by the following research questions:

1. What is the communicative competence requirement perceived by ESL educators and professional engineers in technical oral presentations?
2. What are the similarities and differences between ESL educators and professional engineers' perceptions of linguistic and rhetorical competence in technical oral presentations?

METHODOLOGY

For the purpose of this study, 6 ESL educators and 12 professional engineers were selected by the snowball technique sampling from a larger pool of respondents. The ESL educators were selected from an existing pool of 11 ESL educators. Out of the total number of 11 ESL educators, only 9 ESL educators fulfilled the researcher criteria as they taught the said cohort of students.

However, out of the 11, two were unable to fulfil the criteria as they had just returned from their staff development programme. As such the two (by default) were eliminated as viable research participants because of no teaching contact with the said cohort of final-year engineering project students. They taught elective courses offered in the second year of the Engineering programme.

Having identified the pool of selected ESL educators, the researcher sent an email to the 9 ESL educators on the purpose of the study. Six ESL educators expressed interest in sharing their views. The 6 ESL educators were selected as they provided presentation input in the foundation years to the existing cohort of students.

Similarly, an email invitation was sent to a pool of 66 professional engineers who were directly involved in the evaluation of the students' technical oral project presentation. The names of these professional engineers were provided by the coordinator of the final-year project selection committee of the university. The researcher received a response from 12 professional engineers who expressed their interest and willingness to be part of the study. The participants were selected based on the convenience sampling strategy based on the willingness and availability of the participants to be studied (Creswell, 2008).

The ESL educators were language lecturers who have been selected as part of the study as they conducted a speaking course and provided language input during the foundation years of the students' Engineering programme. The professional

engineers were engineers serving the various Oil Producing Units (OPU) of the national oil company, PETRONAS, who are involved in the assessment of engineering students' technical oral presentations. Professional engineers selected possessed a minimum of five years' working experience as such workplace exposure provides related workplace expertise in the said area of discipline. Henceforth, professional engineers will be referred to as engineers.

Both the language lecturers and engineers were familiar with the engineering students. These students had received language input from the language lecturers and the same cohorts of students were assessed by the engineers during the final-year oral presentation session. The final-year project presentation sessions will henceforth be referred to as technical oral presentations.

Technical oral presentations refer to technical and scientific project presentations conducted by final-year engineering students in the second semester of the final-year engineering programme. All engineering students are required to complete the said project as part of the Engineering curriculum requirement prior to graduation. The conceptualisation and literature review and methodology of the project is finalised during the first semester of the students' final-year programme. Students are required to deliver the project findings in the second semester of the final year. It is during the oral presentation that engineers (who are part of the panel of examiners) evaluate the students' presentation. The panel of examiners is determined by the university's selection committee.

The qualitative phase was conducted to gain an "emic perspective" and record "words of participants" in order to avoid researcher biasness (Patton, 2002). Semi-structured interviews were chosen as this form of interviewing provided the flexibility to rephrase questions to ensure correct interpretation of the questions.

Prior ethical sanction was obtained to conduct the said study from the participants of the university. All participants were notified that interview sessions would last for 40 minutes to an hour. Prior to the interview sessions, the participants signed a consent form to acknowledge the purpose of the said investigation. The participants were not coerced into providing any feedback and had the liberty to opt out of the study if they so wished.

The interview method was selected as a research tool as it enables researchers to explore the "range of opinions, the different representations of an issue, and is not centred on counting opinions of people" (Bauer & Gaskell, 2000). Interviews provide the opportunity for researchers to "listen carefully to what people say or do in their life setting" and "position themselves" in the research to "acknowledge how their interpretation flows from their own personal, cultural, and historical experiences" (Creswell, 2007). In cases where clarification was required, loosely semi-structured interviews were conducted with participants to ascertain the ambiguities and provide further clarification. See Appendix 1 for Interview questions.

During the interview, participants were required to comment on communicative

competence with specific focus on linguistic and rhetorical competence necessary for engineering students involved in technical oral presentations. Of course, generalisations cannot be assumed in such a research design but the findings provide an indication of linguistic and rhetorical competence constructed from the participants' perspective.

Interview feedback was transcribed and thematically analysed using the theoretical framework to analyse the qualitative data (Creswell, 2003). Creswell's framework includes six main steps as "organizing and preparing the data; reading through all data; coding; narrating descriptions and themes; and interpreting data".

Besides thematic analysis, the Computer Assisted Qualitative Data Analysis Software (CAQDAS) NVivo version 8 was also used to statistically analyse the interview responses. The text was divided into small units followed by "labelling the exact words of the participants by hand or electronically by software data analysis program" (Creswell & Clark, 2007). Percentages were tabulated to indicate the level of agreement and tensions among the educators and engineers on the linguistic and rhetorical competency requirement in technical oral presentations. Evidence of verbal responses is provided to signify the participants' response to a particular sub-set of communicative competence.

FINDINGS AND DISCUSSION

The content of the interview was analysed qualitatively. The analysis revealed four sub-sets of communicative competence: technical, disciplinary, rhetorical style and interactive and interpersonal competence. These were perceived as the most important among engineering graduates. The findings suggest added linguistic and rhetorical features are necessary to enhance communicative competence in technical oral presentations.

As mentioned, technical competence indicates mastery of technical content and application of such knowledge in a communicative context (Robinson *et al.*, 2005). Disciplinary competence infers ability to include use of conceptual and simplified terminology, technical definition, new academic findings within parameters of study, economic value, real world application and problem solution order (Sharma, 2007).

Rhetorical style captures the use of personalised language patterns, analogy and social motivation in a project presentation. Rhetorical style reflects the presenter's awareness of how language can be used to "show" and "tell" to evoke emotions and convey descriptive meaning to the audience (Zarefsky, 2005). Interactive and interpersonal competence denotes the use of turn-taking, clarification, repetition and use of affirmative and negative statements which lessen the disparity between the presenter and audience (Dannels, 2001). Interactive language also provides presenters the viability to express their social and ethical

commitment toward a particular cause (Arnó Macià, 2009).

In other words, linguistic and rhetorical competence infers technical competency, mastery in use of discipline specific genre and findings, contextualisation of “functional and phenomenological aspects of findings” and the linguistic verbal application of the interactive element as essential features to create that magic in technical oral presentations. Thus, successful presentations require a mix of technical mastery, contextualised genre and a personal oral narrative style to interact with the audience.

As illustrated in Table 1, the results indicate that both groups (i.e. language lecturers and engineers) placed a differing level of emphasis on the four sub-sets of communicative competence, namely, technical, disciplinary, rhetorical style and interactive and interpersonal features.

Theme 1: Technical competence

With reference to Table 1, engineers (92 %) accorded a higher level of importance to technical mastery than language lecturers (83.3 %). In this study, the concept of technical competence implies the use of technical jargon and non-technical

terminology, technical and scientific evidence, methodological explanation of a technical problem and functional and contextual application of a problem statement.

In the context of this study, language lecturers associated technical competence with mastery of technical and non-technical jargon. For language lecturer A, a presenter is deemed technically competent when able to have the subject matter of that particular area; they must also use technical terms or registers relating to that particular field. If it is a presentation by Chemical Engineering students, they would use technical terms familiar to chemical registers.

Language lecturers associate technical competence with students’ familiarity of technical genre used in the said discipline. Engineers, on the other hand, determine technical competence by a presenter’s ability to contextualise the technical knowledge to the context and field of specialisation. Engineer A views technical mastery as the following:

I want them [students] to be fluent, when they are being asked, they are being questioned, they know what they are talking about, they

TABLE 1
The Sub-Sets of Communicative Competence

No	Competence	Language lecturers’ perceptions (%)	Engineers’ perceptions (%)
1	Technical	83.3	92
2	Disciplinary	0	33
3	Rhetorical style	50	33
4	Interactive and interpersonal	83.3	67

[students] know what to respond. Basically it is about the knowledge, the technical knowledge.

The above statement provided by Engineer A clearly reflects the importance placed on technical knowledge for engineering students to be deemed communicatively competent presenters. Engineers are of the opinion that presenters must possess in-depth technical knowledge of the subject matter to be able to deliver a presentation successfully. Knowledge of technical content provides the required input which in turn enables a presenter to use technical language similar to professionals in the professional environment. Technical knowledge provides the necessary genre specific to a particular discipline and allows a student to eventually “speak like an engineer” (Dannels, 2002).

The findings reveal that engineers perceive technical competence in a more holistic and contextualised concept while language lecturers’ perception is more genre specific. This finding also supports the notion that language practitioners such as language lecturers are inclined to use academic language due to the social situation and setting of the said community of practice (Gaynor *et al.*, 2011).

Although minimal differences exist in what constitutes technical competence (i.e. its function in an academic or professional context), what is apparent is that language lecturers and engineers indicate an awareness of the importance of technical competence as a sub-set of communicative competence.

However, it is the engineers who indicate greater emphasis on the said competency requirement in technical oral presentations.

Theme 2: Disciplinary competence

In terms of the next sub-set of communicative competence i.e. disciplinary competence, the language lecturers were of the consensus that this feature remained the prerogative of the professionals in the area of discipline. As seen in Table 1, language lecturers accorded 0 % emphasis as the disciplinary and content matter was deemed to be in the hands of professionals in the said discipline. Engineers, on the other hand, registered 33 % level of importance for the said feature. This finding is reflective of the situated theory of learning where participants’ legitimate peripheral participation is reflective of the community’s workplace environment (Lave & Wenger, 1991).

In this context, engineers associate disciplinary competence with one’s ability to substantiate purported claims with contextualised scientific justification. Disciplinary competence is associated with the presenters’ ability to grasp and comprehend the data outcome. This sentiment was expressed in the following statement by Engineer B:

The learners had to show that their papers are based on certain technical postulations which had to be technically proven either by experimentations, simulations etc. At the same time, they had to show their ability to grasp the subject matter.

This statement concurred with studies that cited the need for critical information to be obvious in technical oral presentations (Dixon, 2008). Disciplinary competence can be likened to the accurate contextualisation and description of technical and scientific data in the said field of discipline.

On the other hand, as indicated in Table 1, language lecturers do not place any emphasis on disciplinary competence as this aspect is considered the prerogative of educators in the discipline. Language lecturers are of the perception that disciplinary competence is the onus of disciplinary experts in the field. This finding confirms similar feedback on an earlier paper which discussed communicative competency requirement between two other focal groups, i.e. ESL educators and content experts or engineering lecturers (Bhattacharyya & Zullina Hussain Shaari, 2012). Bhattacharyya and Zullina also indicated reliance on content experts instead of ESL educators in terms of disciplinary competence.

This apparent lack of emphasis by ESL educators on ESP and discipline-specific content matter may possibly be attributed to the lack of exposure and expertise in designing ESP and genre-specific materials as current trend is focussed on generic skills (Hyland, 2002). This matter of the lack of ESP materials had inadvertently resulted in the ESL educators' limited exposure to and knowledge of genre-specific and ESP teaching and learning materials. The lack of ESP materials could have inhibited the engineering students' learning of target

situations and exposure to ESP genre-specific terms necessary for effective workplace participation.

Theme 3: Rhetorical style competence

As indicated in Table 1, rhetorical style competence is also considered essential in technical oral presentations. The language lecturers accorded 50 % level of emphasis while the engineers indicated a lower level of emphasis (33 %). This finding clearly signifies language lecturers' higher level of emphasis on the said construct.

In the context of the study, rhetorical style is defined through self-mention markers such as "I" or "We" (Zareva, 2013). Phrases such as "I think...", "I wish to point out..." or "I decided..." indicates personal engagement of the presenter in the project. Rhetorical style is also expressed by personal motivation, analogy or inference to societal motivation in a presentation.

In this context, the language lecturers expressed the need for the presenters to personalise and indicate personal ownership of the project findings. The language lecturers were of the opinion that use of such rhetorical features such as use of "I", "We" of phrases like "In my analysis" enhances audience engagement with the presenter and data findings (Durden & Jack, 2009). Inevitably, the use of such markers demonstrates a sense of ownership of the presenter towards the project. Hyland (2005) echoes this belief and reiterates the use of self-mention and engagement markers to create a sense of "community" between the speaker/writer/text and audience. The

said sentiment was expressed by language lecturer B in the following response:

They do not make it like it was personally written, not written... but personally delivered for a particular audience; they do not use words like, "I" or "I want to show you" ...or... "it is what we feel" ..., these pronouns that show what you are talking about has got to do with everybody...I think that is missing..."

What can possibly be inferred is that in comparison to engineers, language lecturers stress on the rhetoric of a presentation. To linguists, the logos (logic) is not the sole consideration, but other canons of rhetoric dimension such as the pathos (emotions) and ethos (credibility) are equally important (Gurak, 2000). The use of such markers accentuates engagement and interaction between the audience and the presenter to an otherwise overtly technical presentation (Fraile *et al.*, 2010).

As for the engineers, the findings in Table 1 indicate that rhetorical style is less emphasised (33 %) than it is by the language lecturers. The possible explanation to this occurrence may be attributed to the learning theory which accentuates the influence of a working environment toward one's perception and behaviour (Lave & Wenger, 1991). In this context, the engineers would equate rhetorical style to personal motivation. This sentiment was indeed expressed in the following excerpt by Engineer C:

These are your words, these are your findings, and this is what that needs to be stressed out

For the engineers, it was essential that the presenters be personally motivated in sharing the findings and outcome of the study. The presenters were encouraged to personalise their findings as such markers reflect a presenters' enthusiasm in sharing the outcome of a project. Engineers equate rhetorical style to the presenters' ability to infer societal motivation in a presentation. Once again, engineers stress on contextualisation of findings to meet the needs of society and the environment. In other words, communicative competence from an engineer's perspective is realised when societal needs are addressed. This viewpoint is stressed by the following remark by Engineer D:

Any presentation shall portray its own authentication [style mark] that is, the real emphasis shall be put to meet to the intent or purpose of the presentation itself, the target audience, the scenarios, the environment

Undoubtedly, both the language lecturers and engineers indicated that awareness of the need to personalise a presentation as being important. For the language lecturers, rhetorical style competence was accentuated by use of self-mention while the engineers included evidence of societal motivation as an indicator of the competency requirement.

Despite some variety in the categorical concept, this study demonstrates a higher emphasis by the language lecturers on the said construct. The language lecturers considered such competence an essential feature in achieving communicative competence in technical oral presentation.

Theme 4: Interactive and interpersonal competence

As for interactive and interpersonal competence, Table 1 shows that the language lecturers accorded 83.3 % to the said feature while the engineers indicated 67 % emphasis on the said feature. It is evident that the language lecturers gave a higher level of importance to this competency requirement.

With reference to the study, interactive and interpersonal competence embodies the use of interactive language markers (turn taking, clarification, affirmative and negative statements) to create a social and ethical commitment towards a particular cause (Arnó Macià, 2009). Studies indicate that the use of such interactive markers help “reduce tension and build bridges with an audience” (Eunson, 2008, p. 493). In other words, engagement is enhanced between the presenter and audience.

In the context of this study, the language lecturers equated interactive and interpersonal competence to the ability to interact actively with the audience. The presenters were expected to create that two-way exchange of information with the audience. This sentiment was evidenced by language lecturer C who exclaimed:

The interaction skill, that one for me rates rather high...the ability to engage with the audience, the ability to interact...because I feel only certain number of students can do that

The above response by language lecturer C visibly shows a high emphasis and importance accorded to the interactive element in a presentation. To this language lecturer, such skill was highly exceptional and only attainable by a few. In other words, presenters need to be trained to interact and engage an audience in their presentation. Presentations should display a two-way exchange as stipulated in the framework of speaking (Hymes, 1972). Studies also indicate that the importance of features such as audience rapport and attention is enhanced in a presentation (Koch, 2010). To the language lecturers in this study, interactive and interpersonal competence demonstrated the presenters’ ability to communicate competently.

In relation to the engineers, findings from Table 1 indicate that the engineers accorded a lower level of emphasis (67 %) to this criterion in comparison to language lecturers. Once again, the possible explanation to such occurrence could probably be linked to the learning theory which amplifies the legitimate peripheral participation of communities of practice in professional setting (Lave & Wenger, 1991). In this study, the engineers associated interactive and interpersonal competence to the presenters’ ability to defend questions

posed by the audience. In other words, interactive and interpersonal is denoted by the presenters' ability to respond with appropriate answer(s) to questions by the audience. This viewpoint is highlighted in the following response provided by Engineer E who said:

how fast they can answer on the spot; ...the moment that you ask, he got to start thinking how does it fit in into your work and try to relate to the question and try to give the appropriate answer

The feedback provided above emphasises the need for presenters to be able to clarify and justify their responses when queried. It is important that the presenters can provide immediate response to questions posed during such sessions. The immediacy of response produced creates that engagement and two-way exchange between the presenter and the audience. The engineers were keen on presenters who tried to substantiate their project findings when queried. This feature is deemed an essential trait required in the future workplace. As mentioned in the literature, employers (like the OPU) require competent presenters to be able to work in global teams and gain a competitive edge over global competitors (Mohammad Ali Moslehifar & Noor Aireen Ibrahim, 2012).

The findings and discussion provided indicate that both ESL educators and engineers possess some understanding and awareness of the importance of communicative competence in technical

oral presentations. Although different communities of practice may associate certain definitional criteria as part of the construct of a competency feature, ESL educators and professional engineers agreed that linguistic and rhetorical competencies are essential features of communicative competence. In fact, these sub-sets of communicative competence add to the dimension of communicative competencies perceived important by engineering graduates and engineers (Bhattacharyya, 2012a).

In addition, despite the slight differences in the level of emphasis by ESL educators and engineers towards each sub-set of communicative competence, there was awareness and receptivity expressed by the said communities of practice on the linguistic and rhetorical dimension of the construct. The engineers were aware of the need for the presenters to be equipped with the rhetoric of presentation. Increased practice and exposure to public speaking activities should be encouraged to familiarise presenters with the art of public speaking. Presenters require time to acquire the rhetoric dimension in oral presentations (Gurak, 2000). Clearly, both ESL educators and engineers need to synergise and be acquainted with the communicative competency requirement of technical oral presentations.

CONCLUSION AND FUTURE DIRECTION

It is evident that ESL educators and engineers are aware of the importance of the sub-sets of communicative competence. However,

there is also a suggestion that there are gaps on certain sub-sets of communicative competency requirement i.e. disciplinary competence. ESL educators clearly indicated that it remained the prerogative of experts in the discipline to dictate the genre and language use. However, such discrepancy if left unchecked will continue to escalate the differences in communicative competency requirement between ESL educators and engineers. The victims of this will be the presenters who lack the required ESP training and material.

It is for this reason that ESL educators need to create opportunities to enhance their knowledge and perspective on disciplinary competence. With such receptivity, ESL educators can then work towards enhancing ESP language and communication materials necessary for presenters to function in the target workplace. As engineers expect presenters to possess such communicative skills, ESL educators need to be familiar with genre and technical language used in the engineering discipline.

No doubt, theoretically, both communities of practice differ distinctively in their own professional context; however, collaboration between ESL educators and engineers will eventually equip prospective presenters to acquire the specific genre and craft of public speaking necessary for a professional environment. Eventually, with time, input, practice and collaboration between ESL educators and engineers, communicative competence will be enhanced for presenters to confidently walk the talk of engineers so required at the workplace.

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APPENDIX 1

INTERVIEW QUESTIONS WITH ESL EDUCATOR / PROFESSIONAL ENGINEER

1. What are the educators/engineers' expectations of Engineering graduates' oral communication proficiency?
2. Are prospective engineers engaged in a lot of oral communication activities?
3. How would you define a technical oral presentation? What are some essential criteria of a technical oral presentation?
4. What are some essential skills expected in a presentation? Please explain.
5. What skills and attribute should a presenter possess to ensure the success of his or her presentation? Why is this so?
6. What is the educator/engineers' focus when listening to a presentation, and why?
7. Do you have any comments on the aspect of audience knowledge? Please explain.
8. Do you have any comments on language use in the technical oral presentation? Please explain.
9. During the critique session, a panel of examiners both from the academic community and the industry will be present to evaluate the student presentation. Do you notice any similarities or differences in the angle of questioning posed by the panel of examiners?
10. In relation to the technical oral presentation evaluation criteria, are there areas for possible suggestions for improvement? Do you think other criteria should be listed besides introduction, methodology, question and answer, findings and non-verbal cues?
11. In evaluating the presentation, what is your comment on the possible challenges that contribute to students' possible lack of the essential skills and attributes required to be an effective presenter? How do we overcome such challenges?
12. In your opinion, what are some crucial communicative skills and competences that you expect engineers of tomorrow to possess?
13. Do you have any other suggestions on how such competencies can be enhanced among the presenters?

Integrating Soft Skills in the Teaching of Hard Sciences at a Private University: A Preliminary Study

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ABSTRACT

This paper presents a study conducted in a private university in Malaysia specialising in Engineering and Technology studies. The purpose of this paper is to discuss the preliminary findings of a study which examined to what extent the soft skills are being integrated in the teaching of Engineering courses by addressing the teaching approaches and examining the soft skills that are being emphasised by lecturers. This study employed a mixed-method approach in data gathering, using questionnaire survey, group interviews and review of documents. The results show that the lecturers emphasised the following skills the most: communication skills, critical thinking and problem-solving skills and lifelong learning ability. The results also reveal that the teaching approaches most employed are cooperative learning, followed by problem-based learning and the teacher-centered approach. This paper concludes with recommendations on enhancing the effectiveness of teaching delivery in integrating soft skills in the teaching of Engineering courses.

Keywords: Soft skills, hard sciences, engineering, technical skills

INTRODUCTION

It is the aspiration of the Malaysian government to produce graduates who are well-rounded and well equipped with

both technical and nontechnical skills. The government has been very concerned with the problem of unemployed graduates, an issue which has been widely discussed in recent times. One of the major causes of this situation has been identified as being the lack of non-technical knowledge or soft skills among graduates; this, in fact, appears to be a global issue (Kamsah, 2004). Soft skills are among the most crucial skills of the

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21st century that students need to acquire in order to meet the challenges of the modern age. These skills are a set of personal elements consisting of communication skills, problem solving, team working, critical thinking, leadership, management skills, lifelong learning ability and interpersonal skills. Thus, there is growing demand for graduates to be equipped with more than just technical skills.

In Malaysia, Engineering is one of the subjects under the hard sciences that is popular among students who excel in their studies and who are seen as potential leaders of the nation in the future. Several studies indicate that Engineering graduates do not lack technical competency but rather lack competency in soft skills that would enable them to use their technical skills most effectively (Aziz *et al.*, 2005; Kamsah, 2004).

Many studies have been carried out in Malaysian public universities on how to enhance soft skills among students and the teaching approaches employed in teaching specific courses (Abdullah & Aini, 2007; Ahmad Hadi, 2007; Thamer *et al.*, 2007). However, there has been no in-depth study conducted on how soft skills are implemented in a private higher institution in Malaysia. Hence, this study seeks to examine to what extent soft skills are being integrated in the teaching of technical courses by addressing the teaching approaches and examining skills that are being emphasised most by lecturers teaching technical courses in a private university in Malaysia. In addition, the study addresses

the issue of whether there is congruence in the lecturers' and students' perception of the integration of soft skills in the teaching and learning of technical courses. The purpose of this paper is, therefore, to discuss the preliminary findings of the study.

BACKGROUND

The main purposes of education are the holistic development of character and capabilities, the acquisition of specific skills, the realisation of intellectual, physical and spiritual potential and the training of human capital. Therefore, the Malaysian Ministry of Higher Education (MOHE) has produced a profile of the desired human capital based on three principles: knowledge, personal and interpersonal elements (Hazadiah *et al.*, 2008). Not all graduates will be able to demonstrate excellence across all elements upon graduation. Nevertheless, higher education institutions must ensure that their teaching resources are in place and must revamp programmes and systems and re-engineer learning processes to develop these elements in all students. These initiatives signify the importance of teaching and learning in the transformation of the Malaysian education system.

Malaysia's economy must remain robust and sustainable in order to face the challenges of being part of a global economy. Thus, according to the World Bank, there is a need for an innovative, knowledge-based economy which integrates science, technology and engineering into the production process (Hazadiah *et al.*, 2008). Consequently, one of the fields of studies

that is important for the development of the country is engineering. In Malaysia, the study of Engineering is usually taken up by students who excel in academic studies. Most of the time, these are the students who rank among the *crème de la crème* of the country, and they are seen as the future leaders of the nation. Therefore, the role of Malaysian engineers in the development of industries and infrastructures and ensuring the general well-being of the country cannot be underestimated. According to Aziz *et al.* (2005), many industry practitioners perceive that locally trained engineering graduates are strong in their technical skills but lack in nontechnical or soft skills that are necessary for top management or leadership position. Megat Johari *et al.*, (2002) further states that this lack in nontechnical skills has been one of the factors contributing to the dilemma that engineers have been left out of top leadership positions in the development of the country. As such, it is vital to integrate soft skills in the teaching and learning of engineering courses. This could further enhance the students' ability in nontechnical skills so that Malaysia may produce well-rounded engineering graduates who can help realize the government's aspiration to produce human capital with first-class mentality.

Soft skills are also known as the personal attributes that enhance an individual's interactions, job performance and career prospects (Paajanen, 1992). They are broadly applicable and sometimes divided into two categories i.e. personal attributes and interpersonal abilities. Personal

attributes consist of optimism, common sense, responsibility, a sense of humour, integrity, time-management and motivation. Interpersonal abilities consist of abilities like empathy, leadership, communication, good manners, sociability and the ability to teach. One basic underlying theory of soft skills comes from the theory of multiple intelligences developed by Gardner (1983). He suggested that individuals have different kinds of intelligences, and proposed that there are eight intelligences, namely, musical, interpersonal, intrapersonal, logical-mathematical, bodily-kinesthetic, spatial-visual, naturalistic and linguistic intelligences. Musical intelligence is the ability to use rhythm and sounds to illustrate and communicate creative thinking, while bodily-kinesthetic intelligence helps people to use the body to express ideas and feelings which allows for nonverbal implications. Spatial intelligence deals with the ability to form mental images of concepts and personal experience and transform these images into personal meaning and applications, while naturalistic intelligence deals with the ability to make distinctions between the natural and artificial dimensions of things in the world. Interpersonal, intrapersonal and linguistic intelligences deal with the ability to communicate effectively. These intelligences support soft skills elements like communication ability, leadership, creative thinking as well as analytical and critical thinking.

Soft skills are complementary to the hard, technical skills and are an advantage to any Engineering graduate seeking

employment. Ziegler (2007) finds that as current and future Engineering students become socially responsible and are able to fit into a changing environment, new skills are required due to even more changes such as, for instance, technological development. Hence, a new issue confronting Engineering educators today is how to best ensure that graduates will continue to bring value to the marketplace. In educating and training engineers in a rapidly changing technology-driven, borderless century, educators must develop approaches for students to be proactive, versatile and global in outlook (Mohammed & Zulkipli, 2005). In addition, Engineering students of the new millennium must be able to comprehend and solve problems from different dimensions and perspectives. Shuman (2005) emphasises that the mastery of soft skills combined with the ability to innovate will add sufficient values to Engineering graduates. For continuing skill development through lifelong learning that prevents technical obsolescence in the global context, mastery of soft skills is critical. Hence, globalisation, which now includes the engineering profession, is forcing educators to reconsider firstly, the role of Engineering graduates in the global marketplace and secondly, the curriculum required to meet that role.

A management development trainer and consultant suggests that every university in Malaysia should employ an integrated approach in developing soft skills in graduates so that their employability may be enhanced (Yaqin, 2009). This, he continues,

is due to the fact that most Malaysian tertiary institutions are lacking in this approach. He further recommends that this can be done by using a holistic approach by embedding soft skills in the curriculum. The director of the Industry Relations Division, MOHE, concurs with this suggestion in saying that more cohesive approach will yield better results. This idea supports the point made by Hazadiah *et al.* (2008) when they emphasise the need for Malaysia to reengineer the teaching and learning in Malaysian higher education for the development of human capital through a holistic approach.

METHODOLOGY

This preliminary study was conducted in a private university in Malaysia which emphasises engineering and technology. In other words, the university offers programmes in Engineering and Technology only. Students are required to fulfil 9 credit hours of the courses under the National requirement such as Islamic or Moral Studies and Malaysian Studies, 14 credit hours of the University requirement that include English courses, social sciences and humanities courses, 23-31 credit hours of common Engineering courses like Health Safety and Environment, Calculus and Engineers in Society, 79-84 credit hours of their major courses and 9 hours of major electives courses. Hence, Engineering students are required to take technical as well as nontechnical courses.

To find out how the integration of soft skills is being implemented in the teaching of technical courses in this private

university, the following research questions are addressed: (RQ1) Which attributes of soft skills are being emphasised most by the majority of the lecturers? (RQ2) What teaching approaches are being employed by the majority of the lecturers? (RQ3) Is there congruence in lecturers' and students' perception of the integration of soft skills in the teaching and learning of technical courses? This is to see whether the lecturers' and students' views on the integration of the soft skills elements are shared. This study's multi-method approach in data gathering includes the use of questionnaire survey, group interviews and review of documents. The documents used for this study are the course syllabus of technical courses in Electrical and Electronic Engineering (EE), Civil Engineering (CV), Chemical Engineering (CE) and Mechanical Engineering (ME) to further look into the learning outcomes (LO).

The survey questionnaire method is used as the main method for data collection. Two sets of questionnaire have been developed, adapted from studies conducted by Kamsah (2004), Ziegler (2007) and Mohd Yusoff (2008). The first set is for the lecturers, while the second set is for the students. Both sets are divided into 3 sections; Section A is on the respondents' background information. For the set of questionnaire given to the lecturers, seven demographic items are constructed to provide understanding of the background information of the respondents participating in this study. They are 1) courses taught 2) teaching experience 3) highest educational

achievement 4) engineering programme 5) gender 6) ethnicity and 7) whether the students have experience of working in the industry. The set of questionnaire for the students contained four demographic items which are 1) year of study 2) programme 3) gender and 4) ethnicity. Section B is on the importance of soft skills to the respondents and the approaches employed in teaching. The set of questionnaire for the lecturers focused on teaching approaches that the respondents employ in their teaching of technical courses. The items were generated based on the literature review carried out on the approaches taken to integrate soft skills in the teaching of technical courses in order to enhance students' ability in soft skills. This section also inquires into the understanding of the lecturers and students of the importance of soft skills by stating statements regarding the benefits of soft skills to technical students, the common perception pertaining to soft skills and the ability of students in soft skills. In addition, this section also delved into the soft skills elements that are being emphasised by the lecturers in teaching in order to ascertain which soft skills elements are being focused on as the most important and the least important to them. The set of questionnaire for the students focused on the students' perception of the importance of soft skills for them as future engineers. There is also a question which seeks their opinion on the effectiveness of soft skills being incorporated in some learning methods. The last section, Section C, is on the tasks emphasised by the lecturers to enhance

students' soft skills. This section is subdivided into 6 parts with each part detailing the tasks to enhance each of the soft skills elements, namely, communication skills, critical thinking and problem solving skills, information management and lifelong learning ability skills, leadership skills, ethics and professional moral skills, as well as entrepreneurship and management skills. In the set of questionnaire meant for the lecturers, the questions require the respondents to answer how often they incorporate tasks or instructional activities that can enhance their students' ability in the detailed skills under the category of the 6 elements of soft skills that are under investigation in this study. On the other hand, the set of questionnaire for the students require them to indicate their perception on how frequently their lecturers incorporate in their teaching certain tasks or instructional activities to enhance students' soft skills ability.

In this study, group interviews are conducted with selected lecturers and students. According to Cohen, Manion and Morrison (2000), interviews enable the researcher to probe the learner's mind and ascertain what has been discovered from the analysis of the questionnaire. As such, the authors embarked upon interview sessions with the participants to further explore the students' views on the integration of soft skill in the teaching of technical courses. The interviews are based on participants' responses to the items in the questionnaire.

The 13 subjects that make up the sample of lecturers are teach engineering

courses in the university. They are from the four engineering programmes offered in this university, namely, Mechanical Engineering (ME), Chemical Engineering (CE), Civil Engineering (CV) and Electrical and Electronics Engineering (EE). The lecturers are chosen because the study looks into the integration of soft skills in the teaching of technical courses focusing on Engineering courses and students. The lecturers taken as respondents of this study are those who are currently teaching and not on study or sabbatical leave. This is because the researcher is looking to collect data that are up to date. The summary of the demographic information of lecturers is provided in Table 1.

TABLE 1
Demographic Information of Lecturers

Demographic items	No
<u>Gender</u>	
Male	10
Female	3
<u>Educational achievement</u>	
PhD	8
Master	5
<u>Engineering programme</u>	
EE	4
ME	3
CE	3
CV	3

The subjects in the sample of student responses are 20 final-year Engineering undergraduates from the same 4 Engineering programmes. It is assumed that as final-year students who are at the end of their study, the respondents would have developed adequate soft skills ability. Final-year students are presently required to enrol in at least one

course for a degree credit in the fourth year of study. Table 2 presents the summary of demographic information on the students.

TABLE 2
Demographic Information of Students

Demographic items	No.
<u>Gender</u>	
Male	13
Female	7
<u>Year of study</u>	
Year 4, Semester 1	10
Year 4, Semester 2	10
<u>Engineering programme</u>	
EE	6
ME	5
CE	5
CV	4

Wiersma (2000) suggests that a pilot study “is done with a limited number of individuals, usually five to ten, but seldom more than twenty.” (p.165). As such, the number of lecturer and student respondents obtained in this preliminary study is considered sufficient in order to conduct a preliminary study. For this preliminary study, 5 lecturers and 6 students were selected for the group interview with at least one representative from each Engineering programme. The lecturers formed one group and the students another group.

DATA ANALYSIS

To answer the first (RQ1) and second (RQ2) research questions, responses to the items in the questionnaire are calculated using frequency distributions and percentages. For the third question (RQ3), to gauge whether there is congruence between the perception of the lecturers and that of the students, the

statistical test chosen to analyse the data is the chi-square test because the level of measurement of the questionnaire is at most, ordinal. The responses on the questionnaire, which are classified as ‘always’ (A), ‘often’ (O), ‘sometimes’ (S), ‘rarely’ (R) and ‘never’ (N) might be thought to fall on a continuum reflecting frequency of soft skills integration. Unlike the distances between the points 1, 2, 3, 4 and 5 marked on a measuring tool, which are equal distances of one unit each, the distance from A to O might be more than, less than or equal to the distance from O to S. In other words, the distance between the response categories are unknown and cannot be assumed as equal. The chi-square test is based on fewer assumptions about the data and thus, has broader generalisability. Due to this, the chi-square for test of independence is chosen.

The null hypotheses tested in answering the third research question (RQ3) using the chi-square test are as follows:

1. H_0 : There is no significant difference in the perception of lecturers and that of students of the integration of communication skills in the teaching and learning of technical courses.
2. H_0 : There is no significant difference in the perception of lecturers and that of students of the integration of critical thinking and problem solving skills in the teaching and learning of technical courses.
3. H_0 : There is no significant difference in the perception of lecturers and that of students of the integration of leadership

skills in the teaching and learning of technical courses.

4. H_0 : There is no significant difference in the perception of lecturers and that of students of the integration of ethics and professional moral skills in the teaching and learning of technical courses.
5. H_0 : There is no significant difference in the perception of lecturers and that of students of the integration of information management skills and lifelong learning ability skills in the teaching and learning of technical courses.
6. H_0 : There is no significant difference in the perception of lecturers and that of students of the integration of entrepreneurship and management skills in the teaching and learning of technical courses.

The interview is transcribed and the responses of the interview are deliberated in the discussion section so as to explain the findings. The information gathered from the document review is also used to explain the results.

Reliability of the scale

Cronbach’s alpha was used to measure the reliability coefficient that assessed the consistency of each part of the scale, which is divided into the 6 soft skills elements: communication skills, critical thinking and problem solving skills, information management and lifelong learning ability skills, leadership skills, ethics and professional moral skills and entrepreneurship

and management skills. The reliability test is conducted on the 6 sections, and the results of Cronbach’s alpha are shown in Table 3.

TABLE 3
Alpha Level of Soft Skills

Soft skills elements	Alpha
Communication skills	.88
Critical thinking & problem solving skills	.90
Leadership skills	.89
Ethics and professional moral	.89
Information management and lifelong learning ability	.80
Entrepreneurship and management skills	.95

RESULTS

In answering research question (RQ) 1 i.e. which attributes of soft skills are emphasised by the majority of the lecturers, the results showed that 100 % of the lecturers emphasised critical thinking and problem solving skills and 84.7 % emphasised communication skills as well as information management and lifelong learning ability. These results are summarised in Table 4.

RQ2 focuses on the teaching approaches employed by the majority of the lecturers in integrating soft skills in their teaching of technical courses. The results reveal that the teaching approaches employed most are cooperative learning (about 77 % of the lecturers employed this method), problem-based learning (69.3 %) and teacher-centered approach (61.5 %). The summary of the results is shown in Table 5.

TABLE 4
Soft Skills Regularly Emphasised by Lecturers in Teaching

Soft skills	%	Mean score
Critical thinking & problem solving skills	100.0	4.846
Communication skills	84.7	4.307
Information management and lifelong learning ability skills	84.7	3.923
Ethics and professional moral skills	61.6	3.692
Leadership skills	38.5	3.000
Entrepreneurship and management skills	15.4	2.307

TABLE 5
Teaching Approaches Regularly Employed by Lecturers

Teaching approach	%	Mean score
Cooperative learning	77.0	3.923
Problem-based learning	69.3	4.000
Teacher-centered approach	61.5	4.077
Project-based learning	46.2	3.307
Project-oriented and problem-based approach	30.8	3.000

Perception of lecturers versus that of the students

The third research question (RQ3) aims to find out whether there is congruence in the perception of lecturers and that of students towards the integration of soft skills elements in the teaching and learning of soft skills. The results of the tests of the hypotheses are presented as follows:

1. Communication skills

H_0 : There is no significant difference in the perception of lecturers and that of students of the integration of communication skills

in the teaching and learning of technical courses.

The p value is approximated to be .232. Since $p > .05$, the Null hypothesis is not rejected. Therefore, there is no evidence to conclude that lecturers and students have different perception towards the integration of communication skills in the teaching of technical courses. In other words, the lecturers' responses indicate that they do integrate communication skills in their teaching and the students concur with this.

2. Critical thinking and problem solving skills

H_0 : There is no significant difference in the perception of lecturers and that of students of the integration of critical thinking and problem solving skills in the teaching and learning of technical courses.

The p value is approximated to be .026. Since $p < .05$, the Null hypothesis is rejected. The data thus conclude that lecturers and students differ in their perception towards the integration of critical thinking and problem solving skills in the teaching of technical courses. The data reveal that lecturers claim they do integrate critical thinking and problem solving skills in their teaching, with one lecturer even stating that he/she always integrates the skills. On the other hand, the students' responses show that the majority of the lecturers only integrate these skills sometimes or rarely.

3. *Leadership skills*

H₀: There is no significant difference in the perception of lecturers and that of students of the integration of leadership skills in the teaching and learning of technical courses.

The p value was approximated to .044. Since $p < .05$, the Null hypothesis is rejected. The data thus conclude that there is a significant difference between the lecturers' and students' perception of the integration of leadership skills in the teaching of technical courses. The data show that the lecturers claim that they do integrate leadership skills in their teaching. However, the students perceive that the majority of the lecturers integrated the skills only sometimes and some, rarely.

4. *Ethics and professional moral skills*

H₀: There is no significant difference in the perception of lecturers and that of students of the integration of professional moral and ethical skills in the teaching and learning of technical courses.

The p value is approximated to be .074. Since $p > .05$, the Null hypothesis is not rejected. Therefore, there is no evidence to conclude that lecturers and students have different perception of the integration of ethics and professional moral skills in the teaching of technical courses. Thus, the data revealed that the majority of the lecturers claim that they do integrate self-awareness and ethical skills in their teaching but rarely do it, and the students have the same view.

5. *Information management and lifelong learning ability*

H₀: There is no significant difference in the perception of lecturers and that of students of the integration of information management and lifelong learning ability in the teaching and learning of technical courses.

The p value is approximated to .120. Since $p > .05$, the Null hypothesis is not rejected. Therefore, there was no evidence to conclude that lecturers and students have different perceptions towards the integration of information management and lifelong learning ability in the teaching of technical courses. The data showed that the lecturers stated that they sometimes and often integrate this particular skill in their teaching and the students seemed to concur.

6. *Entrepreneurship and management skills*

H₀: There is no significant difference in the perception of lecturers and that of students of the integration of entrepreneurship and management skills in the teaching and learning of technical courses.

The p value is approximated to .033. Since $p < .05$, the Null hypothesis is rejected. The data thus conclude that there is a significant difference between the lecturers' and students' perception towards the integration of entrepreneurship and management skills in the teaching of technical courses. The data show that the majority of the lecturers rarely integrate the skills in their teaching, in fact, some state that they never do it. On the other hand, the responses from the students point

out that the lecturers sometimes do integrate the skills in their teaching. Table 6 presents the summary of the results.

DISCUSSION

In analysing the results we found that the soft skills emphasised most in the teaching by the lecturers is related to the teaching methods that they employed. One of the teaching approaches is cooperative learning. Cooperative learning is a teaching method that involves students working in teams to accomplish the learning objectives. It is constructed around a kind of group-orientated classroom based on the belief in the potential of all students to succeed. Cooperative learning, compared with the traditional teacher-centred method, has many advantages to Engineering students such as positive interdependence, high retention, high critical levels, enhancement of teamwork skills, enhancement of the ability to solve problems and better interaction (Felder *et al.*, 2000). Several studies have found that cooperative learning can help improve Engineering students' soft skills and overall performance (Felder *et al.*, 2000; Khairiyah *et al.*, 2004; Vijayaratnam, 2009).

One of the lecturers who was interviewed in this study mentioned that she used this approach to make her class more interactive, to encourage the students to interact and to have shared responsibility on the outcome of their discussion. The following is her remark:

Actually the lecturers must create the environment. It depends so much on the lecturers who have to be interactive with the students. I usually give lecture for 30 minutes, then, I give them a problem on the board, then pair up and ask the students to solve the problem in pairs. I teach them not to be afraid if make mistake because it is a collaborative work, not only one person's work. Then I call them up to the front at random to show how they solve the problem, I don't ask for volunteers. I don't have problem to make them come to the front.

Problem-based learning is another teaching approach employed most by the lecturers. In problem-based learning, the

TABLE 6
Summary of Results

Soft skill	df	Chi-square	p-value	Null Hypothesis
Communication	16	19.737	.232	Not rejected
Critical thinking & problem solving	15	27.415	.026	Rejected
Leadership	17	28.113	.044	Rejected
Ethics & professional moral	11	18.340	.074	Not rejected
Information management & lifelong learning	11	16.959	.120	Not rejected
Entrepreneurship & management	15	26.508	.033	Rejected

learners define the problem, explore and decide on means of solving the problem and then evaluate and present the solution. The problem is presented prior to learning while learning occurs during the problem-solving process. The learners take responsibility of their own learning when they define the problem and sub-problems, propose, implement and evaluate the solution and strategy, identify resources, manage time, manage themselves and others. They learn through experience and interaction with their peers and other role players. Thus, this teaching method requires students to think critically, enhance their lifelong learning ability when they relate the activities to real life, employ time management, learn to identify resources and enhance communication skills when they interact with others and present their solutions. As such, by employing problem-based learning, the lecturer emphasises most on communication skill, critical thinking and problem solving skills and lifelong learning ability. Below are some of the comments given by the students during the interview on the skills that are emphasised by their lecturers in their teaching:

Student A

Most of the lecturers in my programme (ME), they give the project together with the presentation whereby the students must answer the questions given by lecturers through the projects. This is one of the most (important) sources (ways) of the students to gain soft skills, like communication

skills and at the same time their critical thinking skills.

Student B

There are many types of projects like problem solving, build something or examine something and at the end of the project (work) we are required to express what we have done, what we want to show (outcome of project) to the class. That's how project presentations help us (enhance communication skills)...

Student C

...in working on the assignment given by the lecturers sometimes we have to search for the information ourselves which are not in the textbook. We have to search in the internet, or go to the library or sometimes we have to speak to other people who know more about it (the topic).

The students' comments indicate that some types of tasks given by the lecturers do help them to enhance some soft skills like communication skills, critical thinking skills and problem solving skills as well as information management and lifelong learning ability skills. The review of selected OBE documents also shows that communication skills, problem solving skills and critical thinking skills and lifelong learning ability skills are integrated through the assignments like project work that carry between 10 to 20% of the assessment marks. Other than the evaluated activities, the

students also do group discussions in class to discuss certain issues in some given topics or to solve problems. One of the lecturers mentioned this mode:

Sometimes I will make the students discuss in groups on certain topics. I don't do this for every topic though. After the discussion the students have to present to the class the outcome of their discussion.

The teacher-centered approach is employed by the lecturers who are teaching large classes in which the contents of the course are delivered through lectures. There are concerns that teaching approaches other than the lecture take up a lot of time, and there will not be enough time to cover the syllabus. As the lecture method has been efficient in covering the syllabus all this while, some are of the opinion that it is pointless to turn to another method especially since it would be difficult to integrate soft skills when they are required to cover the content of the whole semester's syllabus. They, therefore, seem to support the teacher-centred approach more.

...course syllabus sometimes is too lengthy where the lecturers have insufficient time to integrate the soft skills in technical knowledge delivery.

Some of the technical courses especially engineering core subjects are 'highly technical' in nature. These are required and necessities

to become professional engineers. Most of them are involved with 'technical mind challenge'. So it's not easy to blend all soft skills needed.

According to Khairiyah *et al.* (2004), lecturers need to understand that there is a need to change because the world today is far from what it was even a decade ago. This researcher believes that in order to impart knowledge or skills to students, lecturers must set a good example. In order to enhance students' lifelong learning ability, lecturers must possess the ability too, and one of it is to be able to learn from and to accept changes. Thus, the lecturers should want to change their teaching approach for the benefit of their students as well as themselves.

The views of lecturers and students in the integration of critical thinking and problem solving skills, leadership skills and entrepreneurship and management skills differ. This may be because the lecturers do not communicate to the students their intention of integrating those skills in their teaching. Thus, students might not see or be aware that these skills are integrated in the teaching. Woods *et al.* (2000) highlighted that there are eight basic activities that could be carried out in any classroom for soft skills development and one of it is that the instructors must communicate the importance of the skills they wish the students to develop. Lecturers must not assume that they students should know and be aware of the skills especially in

undergraduate classes. We reckon this is what may have happened in the case of this result.

IMPLICATION OF STUDY

This study contributes to the pedagogical implication on the teaching of soft skills in technical courses. The findings suggest that students sometimes are not aware of the intention of the lecturers to integrate soft skills in their teaching. Often times, students overlook learning objectives in the syllabus, while it is assumed that students have read through them. Therefore, the learning outcomes of each course should incorporate the development of soft skills and this must also be articulated through stating each clearly in the Learning Outcome (LO) of the course to give a sense of purpose to the students. This is also to ensure that proper alignment is set in terms of understanding what soft skills really are. It must be made known to the students that soft skills can also be acquired while learning technical skills. Mitchell (2011) suggests providing a syllabus quiz and a brainstorming session with the students at the beginning of the semester to help students understand the objectives. The methods of delivery should also emphasise student-centred approaches rather than the teacher-centred approach. Nevertheless, as stated by Felder *et al.* (2000), a combination of both approaches would be better.

CONCLUSION

In summary, the study finds that the soft skills elements being emphasised most in

their teaching by lecturers of Engineering programmes in a Malaysian university specialising in Engineering and Technology are communication skills, critical thinking skills and problem solving skills as well as lifelong learning ability skills and information management skills. This finding is relevant to the teaching approaches employed by the majority of the respondents which are cooperative learning and problem-based learning as these approaches focus on the skills mentioned earlier. In testing the hypotheses to find out whether there are any differences in the lecturers' and students' views on the integration of the soft skills elements, this study finds that the two groups differ in their views on the integration of critical thinking and problem solving skills, information management and leadership skills as well as entrepreneurship and management skills. Since soft skills are very important for graduates to acquire to secure employment, it is imperative that the skills be integrated in teaching especially in technical courses so that the graduates are well equipped with technical skills (hard skills) as well as soft skills.

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Ethical Values and Commitment Towards Achieving Excellence: A Study on Public Boarding School Students In Malaysia

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ABSTRACT

The boarding school is perceived to be a springboard for success. Public boarding school students in Malaysia are mostly selected based on outstanding academic performance and co-curricular achievements. They will eventually join higher learning institutions and be groomed as future leaders and employees. In today's competitive global arena, it is critical for leaders and employees to internalise good moral values and display commitment towards excellence to achieve organisational effectiveness and sustainability. Substantial studies on ethical values and employee commitment have been conducted from organisational behaviour perspectives. However, there are limited studies that link the importance of ethics with commitment towards excellence in a school environment, pertinent for leadership development. To address the gap, this study was conducted to assess the ethical level of students at three established public boarding schools in Malaysia. A structured questionnaire was developed to measure three universally accepted moral values: integrity, self-control and courage. The study also examined students' commitment towards striving for excellence. Correlation tests were conducted to investigate whether there was a significant relationship between ethical values and commitment to excellence. Overall, the results show that the boarding school students studied in this research possessed high self-control, moderately high courage and moderately high integrity. The students' overall commitment to excellence was high. The study also found a consistent and significant correlation between ethical values and students' level of commitment to strive for excellence. Higher levels of integrity, self-control and courage will lead to higher commitment to excellence.

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INTRODUCTION

Public boarding school students in Malaysia are frequently identified based on their academic excellence and co-curricular involvement as future leaders, be it in the public or private sector. In Malaysia, the boarding school is perceived to be a good breeding ground for leaders of tomorrow. It is the springboard to success.

Islamic worldview recognises humans as special creations of God (Syed Othman Alhabshi & Aidit Hj. Ghazali, 1994). Humans differ from non-humans in that they are made in a balance and are directly informed of their role – to be leader of the universe. “Behold, thy Lord said to the angels: ‘I will create a vicegerent (i.e. *khalifah* or leader) on earth’ (*Al Quran, Al Baqarah*, 2:30). Human beings are therefore in a unique position to be guardian, according to Islamic teaching. They are endowed with the highest degree of self-conscience, intelligence and freewill to think sensibly and evaluate if their acts are morally right or wrong while fulfilling their desires and self-interests. They are good by choice and given inner control and are made to be accountable for all their actions. “We have indeed created man in the best of moulds” (*Al Quran, At Tin*, 95:4).

Aptly, humans have three main responsibilities: to make himself/herself good; to help others be good and to make the physical world good. One cannot preach goodness if he or she does not personally embody goodness. This is where the study of ethics becomes relevant as a field of knowledge to be studied and internalised

by rational, responsible and civilised human beings. Boarding school students are certainly potential university students who will, upon graduation, join the labour market as employees or employers, responsible for a nation’s economic growth, prosperity and well-being.

However, there have been diverse concerns on the decadence of moral values among the younger generations, especially Generation Y, those born between the year 1982 and 2000. The ethical problems of Generation Y are often highlighted, be it at home or the workplace. Much as parents have a primary role to ensure good ethics are taught to their children, those who have duly released their children to join boarding schools may have a limited role in the shaping process because of the physical separation. A child sent to a boarding school will be moulded by the school environment and the communication process of the school directly or indirectly. In line with this, research has in fact found that family communication and institutional communication (including the school) have a positive relationship with the emotional spiritual quotient (Nuredayu Omar *et al.*, 2007).

Bearing this in mind, the question is, how has the public boarding school environment developed students’ ethical values and level of commitment towards excellence, pertinent for effective leadership, since these schools are expected to shape future leaders? This issue has inspired researchers to conduct an exploratory study in three established fully residential public boarding

schools in Malaysia; two all-boys' schools and one all-girls' school. They are all under the supervision and directive of the Ministry of Education, Malaysia. They are also fully funded by the Government of Malaysia.

This paper reports part of the study findings with two main objectives:

1. To assess the students' ethical values from three dimensions: Self-control, Courage and Integrity
2. To investigate the relationship between these ethical values and students' commitment towards excellence

The following is a literature review on the differentiation between ethics and morality in human behaviour, the ethical values of Generation Y and the role of religion in the global environment followed by discussions on what constitutes one's commitment to excellence.

LITERATURE REVIEW

Ethics versus Morality in Human Behaviour

Ethics can be described as a set of principles that contains behavioural codes to determine what is right or wrong (Khalidah *et al.*, 2012b). It also outlines the moral duties and obligations that any human being should practise. Abdullah and Mohamad Zainol Abidin (2011) view that ethics concerns itself with what is good or right in human interaction. It revolves around three central concepts: "self", "good" and "other." Ethics is also defined as a critical analysis of human acts to determine their rightness or wrongness in terms of two major criteria:

truth and justice (Mauro *et al.*, 1999). In conceptualising ethics as a field of study one rationalises what actions are right or wrong and assesses whether they are just or fair from different perspectives -- individual, organisational or societal levels.

Moral philosophers in their study of ethics differentiate between the concepts of ethics and morality, although a layman may see these two terms as being synonymous (Abdullah & Mohamad Zainol Abidin, 2011). The objective behind this distinction is to clarify certain arguments. Morality is concerned with the norms, values and beliefs embedded in social processes which define right or wrong for an individual or a community (Shaw, 2008). Ethics, in contrast, is the study of moral standards whose explicit purpose is to determine, as far as possible, whether a given moral standard or judgment based on that standard is more or less correct (Velaquez, 2006). This, therefore, demands analytical thought and application of reason to determine specific rules, principles or ethical theories that determine right or wrong for a given situation (Crane & Matten, 2007). These principles also include religious principles since all religions focus strongly on conduct, part of which involves moral instructions, values and commitments (Shaw, 2011; Khalidah *et al.*, 2012a). In addition, these rules and principles must give an account of the individual rights or one's entitlements and what is just or fair (Boatright, 2007). Certainly, the rights of others, be it humans or non-humans must be considered, much as an individual is equally interested to exercise

his or her own individual rights and self-interests as a natural inclination.

Ethics, Generation Y and the Role of Religion in Today's Global Environment

One of the challenges of the 21st Century is the character building of Generation Y. While tremendous advancement has been made in information and communication technology, aptly, there has been serious concerns on the decadence of moral values among the younger generation, especially Generation Y, born between the years 1982 and 2000 (Farnsworth & Kliener, 2003; Freestone & Mitchell, 2004; Daily Express, 2004; Rusnah, 2005; VietnamNet Bridge, 2008; Srivasta, 2010; SnapComms, 2010; Khalidah *et al.*, 2010). Most students, be it at primary, secondary or tertiary level, today belong to the Generation Y group (Munusamy *et al.*, 2010). As numerous works have highlighted the deteriorating values of Generation Y, several factors have no doubt influenced the shaping of one's morality and ethical values. They include upbringing, the socialisation process (i.e. the behaviour of surrounding people), experience and critical reflections on those experiences and the explicit and implicit standards of culture (Shaw, 2011). These factors may generally be referred to as socio-cultural factors.

Although socio-cultural factors may have significant influence on the shaping of one's ethical values, they are also developed and internalised from religious principles and beliefs (Rusnah, 2005; Khalidah *et al.*, 2012b). For believers, religious knowledge,

rules and principles are the foundation of their ethical values. Some people do not believe that morality boils down to religion but rather, to a function of what a particular society happens to believe (Shaw, 2011). Some may even view that it is misleading and inappropriate to link morality with spirituality and religious beliefs since it may violate individual or human rights which promote freedom of choice of religion and the individual's privacy. After all, one's choice of religion is a negative right (i.e. free from other's interference) and is clearly stated in the 1948 United Nations Universal Declaration of Human Rights (Boatright, 2009). In addition to these rational arguments, Shaw (2011) has convincingly argued that morality need not solely rest on religion although it is justified that religion involves not only a formal system of worship but also prescriptions of social relationships.

While we fully respect and partially agree to these "westernised", liberal, pluralistic and universalistic views on the role of religion in shaping one's ethical values, the point remains: a belief in religion and internalisation of the principles and teachings will shape one's character and values. Most religions have an ethical component. The Golden Rule of Life, "Do to others what you want others to do to you", is found in all religions. "Unfortunately, the international community has yet to recognise and appreciate the significance of this rule" (Chandra Muzaffar, 2005, p.2). According to Simon Blackburn in his book, *Ethics: A Very Short Introduction*, "For

many people, ethics is not only tied up with religion, but is completely settled by it. Such people do not think too much about ethics, because there is an authoritative code of instructions, a handbook of how to live.” (Blackburn, 2001, p.9).

Following these contentions and reiterating our last point, religion certainly plays a role in shaping one’s ethical values irrespective of religious differences and beliefs. However, Khalidah *et al.* (2009) finds that there is no significant difference in ethical values among students of different religious background and concludes that religion need not necessarily determine one’s good moral/ethical values. What matters most is the application and internalisation of religious knowledge in one’s life. Obviously, the extent of religious/ethical knowledge that one acquires as well as his or her interests to apply and internalise this knowledge in life remains a personal decision. The more the religious/ethical knowledge that one acquires and the higher the interest shown to apply and internalise this knowledge in life, the more likely this religious/ethical knowledge will shape an individual’s moral/ethical values. Ethical behaviour therefore rests upon one’s self-conscience, commitment and sincerity to do good deeds as a social responsibility under all circumstances; as a *khalifah* on Mother Earth (Khalidah *et al.*, 2012b).

As for the Malaysian community, the first principle of *Rukun Negara* (i.e. Belief in God) clearly reflects the importance of religion despite its multi-racial society and cultural diversity. The Malaysian education

system has continuously emphasised religious/ethics education in its curriculum. Islamic Studies and Moral Studies are compulsory subjects to be taken by all students, be it at primary, secondary or tertiary levels (Khalidah *et al.*, 2009). However, the issue remains whether religion is part and parcel of one’s way of life in this competitive and materialistic global environment, where it is increasingly seen in the light of a private matter by the West and even by some in the East nowadays.

Commitment to Excellence

Commitment is a noble moral value which reflects one’s attitude to persevering and achieving the best in life. Commitment may simply be defined as an attitude of people for deploying their total resources towards the achievement of certain goals. From this definition, we can learn some of the elements which lead to one’s commitment – commitment as an attitude; use of own resources to achieve goals assigned to an individual and goal orientation. A committed person not only works hard but is also smart enough to know his or her expected ultimate results. Without this knowledge, failure and mediocrity in the conduct of life are only to be expected.

From an Islamic perspective, commitment is *istiqamah* i.e. being straight and steadfast, continuously striving to accomplish duties and responsibilities including doing good deeds and avoiding evil acts (*Amar Makruf Nahi Mungkar*) as a *khalifah*. In several places, the Holy Quran lists fulfilment of one’s commitments

among the most important characteristics of a believer (<http://www.islamicperspectives.com/FinancialDealings.htm>). Believers are those who are faithful to their trusts and to their commitment; they are, to quote from the *Al Quran* by A. Yusuf Ali (1983), “*Those who faithfully observe their trusts and their covenant*” (*Al Quran, Al Mu’minun*, 23:8). One’s covenant will create obligations or commitments. Quoting another verse, “*Come not nigh (near) to the orphan’s property except to improve it, until he attains the age of full strength; and fulfil (every) engagement, for (every engagement will be enquired into) (on the day of reckoning)*” (*Al Quran, Al Isra’*, 17:34). These verses clearly remind a believer that fulfilling a commitment is important as an accountability for every commitment will be asked for on the Day of Judgment. In Islam, commitment thus covers all contexts and aspects of life, be it business or non-business, personal or collective situations, not to mention commitment towards excellence in whatever we do. Commitment i.e. *istiqamah* has also been listed as one of the values and ethical components in Islamic Management (Noorazah Kamri & Khairiah Salwa, 2004).

Much as commitment is referred to in Islamic ethics from various perspectives, conceptually, it is also widely deliberated in the study of management, which closely links it with employees’ motivation to strive for the best. It has also been discussed at length in the context of leadership development and organisational effectiveness (Covey, 2004). Certainly, commitment is a sub-character trait of a person of integrity and a

noble value of effective leaders (Stanwick & Stanwick, 2009; Noorazah Kamri & Khairiah Salwa, 2004). Committed people will mobilise their total resources beyond their normal dedication for achieving goals and responsibilities assigned to them. According to MacCarthy (1997), most employees give 60% of their time and attention to their jobs. This is sufficient to do what must be done in most cases but in order to be excellent, employees need to give 100% commitment. However, commitment to excellence may be due to rewards or achievements which are extrinsic and intrinsic. Commitment will lead to one’s sense of loyalty and perseverance to seeing the achievements of his or her dreams, ultimate goals and success in endeavour.

While Islam holistically looks at commitment as a virtue or rather an order of the Almighty to be followed by believers, contemporary studies on management in fact often link commitment and motivation with one’s needs and/or sense of purpose in life. Abraham Maslow’s Hierarchy of Needs Theory outlines five categories of needs that people seek to satisfy i.e. physiological, safety, belongingness, esteem and self-actualisation needs (Wang, 2001; Khalidah *et al.*, 2012b). Understanding what the different motivations are (toward the same end) is directly relevant to developing purpose as reflected by Maslow’s Hierarchy of Needs.

To relate hierarchy of needs with motivation in an academic scenario, Liddell (2009) and Astin (2004) in fact highlighted that inculcating a sense of purpose and

meaning in life need to be embedded in college students so that they will not be individualistic (i.e. concentrating on fulfilling their self-interests) but be socially responsible to the community. When people have a sense of purpose in life and are motivated to fulfil certain needs, they will be more committed to achieving them.

METHODOLOGY

Research instrument

A questionnaire was developed with two major sections: Section A with respondents' demographic details and Section B with Ethical Values and Students' Commitment to Excellence scales and items. Under Ethical Values, 26 ethics statements represented the three universally accepted moral values to be measured: Integrity, Self-control and Courage. The researchers adopted and adapted items from earlier studies by Khalidah *et al.* (2009, 2010, & 2012a) as well as studies by Gbadamosi (2004) and Yeung *et al.* (2006). New items related to the boarding school environment were developed based on the researchers' observation and experience as former boarding school students themselves. For the Commitment to Excellence scale, items were developed based on the factors influencing one's ethical values as stated by William Shaw (2011) with cross references made to relevant verses of the *Al Quran*. A 5-point Likert scale was used accordingly to gauge the respondents' level of agreement with the items on the questionnaire.

Research Dimension 1: Ethical Values

Similar to other earlier studies by Khalidah *et al.*, this study too referred to Aristotle's Virtue Ethics Theory which recognises the need for one to emulate virtues such as honesty (a sub-trait of integrity), courage, self-control and respect for humans and non-humans to lead a rewarding life (Khalidah *et al.*, 2010). Virtue is a good moral value or character trait that manifests itself in habitual action (Boatright, 2007). For example, honesty cannot consist of telling the truth once; it is, rather, a trait of a person who consistently tells the truth as a general practice.

Based on Aristotle's Virtue Ethics Theory mentioned above, the ethical dimension is further classified into three sub-scales: Self-control, Integrity and Courage. These are universally accepted moral values to be internalised by humans irrespective of religious and cultural differences (Nickels, 2008; Khalidah *et al.*, 2012a).

Self-control

Self-control refers to one's ability to control desires through the exertion of strong will power. A person of high self-control will always display patience and calmness and will strive to control his/her temper as anger is a bad moral value. He or she will consistently display emotional strength and stability when faced with uncertainties/tests in life. Self-control also refers to one's ability to avoid wrong doings and promote rightness of actions. In Islam, the foundation to self-control and good behaviour is *solat*

i.e. the obligation to pray five times a day. *Solat* in itself promotes one's commitment towards *amar makruf nahi mungkar* (i.e. doing good deeds and forbidding evil/avoiding bad behaviour).

Integrity

Integrity is being upright and honest (Khalidah *et al.*, 2010). A person of integrity will always uphold good values and principles in life. A renowned Malaysian motivator, Dr. Danial Zainal Abidin has defined Integrity as *Taqwa* or piety, a quranic terminology for "God consciousness or fear to God". Apart from that, Donald Zauderer listed 13 specific behaviours that can help identify the level of integrity in individual actions (Stanwick & Stanwick, 2009). According to him, people of high integrity "possess humility, maintain the ability to be concerned about the greater good, be truthful, fulfil commitments, strive for fairness, take responsibility, have respect for individuals, celebrate the good fortune of others, develop others, reproach unjust acts, be forgiving, extend self to others and how people develop ethical behaviour -- they develop a sense of ethics everywhere they are in any situation" (Clement, 2005).

Courage

Courage is the virtue of responding to fear with a reasonable amount of daring (Khalidah *et al.*, 2010). Courage is always associated with bravery and doing the right things despite the cost (Khalidah *et al.*, 2010). A person of courage normally has

commendable drive and will positively face the challenges of life with hope for a better future. He/she will take calculated risks and act with prudence. A courageous person will also not hesitate to uphold justice and fairness in all dealings, be it in private or public.

Research Dimension 2: Commitment to Excellence

In developing the Commitment to Excellence scale, references were made on the factors influencing one's ethical values as stated by William Shaw (2011) as well as relevant verses of the *Al Quran*. For example, according to *Surah Al Mukminun (Al Quran, 23:1-10)*, commitment to excellence should not only be measured by the diligence with which one fulfils his/her personal needs but also by contribution to society at large. Therefore, taking from both conventional and Islamic perspectives, Commitment to Excellence items were developed for this study.

The Respondents of the Study

This research was conducted in three long-established public boarding schools in Malaysia; two were all-boys' schools (later referred to as "Boys' School A" and "Boys' School B") and one was an all-girls' school. The respondents were Form 1 and Form 5 students. The two cohorts were chosen to assess whether there would be differences in responses considering the time factor/ students' duration of stay at the boarding schools.

Pilot Study

Following the development of the research instrument/questionnaire, a pilot study to assess its reliability was conducted at Boys' School A with the support of the school management. The questionnaire was distributed to 60 students; 30 Form 1 students and 30 Form 5 students. Based on the pilot study feedback, the questionnaire was translated into Bahasa Malaysia to assist the Form 1 students, who might find difficulties in completing it and to ensure the respondents had a proper understanding and correct interpretation of the stated items/statements.

Responses were sought from Form 1 and Form 5 students of the three schools in the research setting. The researchers chose these cohorts to cross-examine and make comparisons among these students to see whether there were differences in their responses. This is in view of the fact that the Form 1 students were newly exposed to the boarding school environment whereas the Form 5 students were in the final year of their five years in the school.

Reliability and Data Analysis

A reliability test was next conducted on the developed instrument. Cronbach's Alpha reliability tests were run for each scale (i.e. Students' Commitment to Excellence and Students' Ethical Values) and sub-scale (i.e. Integrity, Self-control and Courage). Within the scales, some of the statements were reverse coded to ensure that all the scales pointed in the same direction (i.e. a higher score always means a higher scale value). For the "Ethical Values" scale, the items were further grouped to represent three universally accepted moral values: Integrity, Self-control and Courage. Based on these analyses, 8 out of 26 ethics statements were excluded from further analysis to ensure reliability of the scales used. As indicated in Table 1, with alpha values of between 0.6 and 0.63, all the scales and sub-scales were reliable and could therefore be used as composite scales (Nunnally, 1978).

The researchers then proceeded with the full research study. Data collection was conducted from late January till March, 2011. Data were then coded and entered accordingly into SPSS Version 17. Descriptive statistics such as frequency distribution, mean score and standard

TABLE 1
Reliability of the Scales Used in the Study

Dimension	Scale	No. of items	Alpha
1	Students' Ethical Values		
	(i) Self-control	9	0.61
	(ii) Courage	3	0.63
	(iii) Integrity	6	0.61
2	Students' Commitment to Excellence	4	0.60

deviation were utilised to analyse the collected data. To test internal consistency of the scales used, Cronbach’s Alpha reliability tests were computed for each scale and sub-scale. Pearson’s correlation tests were utilised to investigate whether there was a significant relationship between Ethical Values (i.e. from three universally accepted moral values: Self-control, Integrity and Courage) and Commitment to Excellence.

Demographic Details of the Respondents

Referring to Table 2, out of 657 respondents, 33.6% were from Boys’ School A, 36.5% from Boys’ School B and 29.8% were from the Girls’ School. In other words, 70% of the respondents were males and 30% were females. Therefore, the smallest proportion

of respondents came from the Girls’ school. This is because two of the selected schools were all-boys’ schools.

As mentioned earlier, since this research had only included the Form 1 and Form 5 students at each boarding school, 47.7% of the respondents were 13 years of age (Form 1) while 52.5% of the respondents were 17 years of age (Form 5). All the three schools enrol only Bumiputera (indigenous group) students based on the policies set by the Ministry of Education, Malaysia. All (100%) the respondents were Muslim and they belonged to the Malay ethnic group. They therefore embraced Islam as their religion. Of the respondents, 49.8% were brought up in the city whilst 30% and 19.6% were from small towns and rural areas respectively.

TABLE 2
Demographic Characteristics

Number of respondents	657 (Boys’ School A: 221; Boys’ School B; 240; Girls’ School : 196)
Gender	Male – 70% Female –30%
Age	13 years (Form 1) :47.5% 17 years (Form 5) :52.5 %
Ethnicity	Malay – 100%
Religion	Muslim -100%
Place of upbringing	Rural: 19.6% Small town: 30% City: 49.8%
Raised by	Parents: 94.5% Father only: 0.3% Mother only: 3.8% Guardian: 0.9%
Income of parents	Below RM1500: 21.9% More than RM1500 but less than RM3000: 14.2% More than RM3000 but less than RM5000: 20.4% Above RM5000: 42.5%

*Note that some data above are not reported as 100% because a few respondents did not fully complete the demographic section of the questionnaire.

In terms of upbringing, 94.5% of the respondents were raised by both parents, 0.3% by fathers only, 3.8% by mothers only and 0.9% by guardians. This finding seems to imply “family stability” for the majority of respondents. Next, from analysing the socio-economic status/background, it was found that 42.5% of the respondents came from above average income families (i.e. where the parents’ joint income was RM5000 and above) and 20.4% came from average income families (i.e. parents with joint income of more than RM3000 but less than RM5000). Another 14.2% had parents whose joint income was more than RM1500 but less than RM3000 and 21.9% with parents whose joint income was below RM1500.

To summarise, almost two thirds of the respondents came from middle and upper income families and a third of them came from low income/poor and hardcore poor families. (Note: The definition of

urban poverty is a household with an income of RM3000 and below). While these students are competing among themselves academically, the boarding schools are in fact supporting the government’s efforts to reduce income disparity between the rich and the poor to achieve national socio-economic balance.

RESULTS AND DISCUSSION

Students’ Ethical Values: Self-control

Table 3 suggests that in general, the students’ Self-control is high (Mean=4.05; SD=0.47). Most of the students always performed *solat* (obligation to pray five times every day), consistently read and internalised the teachings of the *Al Quran* and accepted failure as a challenge. This was a positive indication that these students did practise Islamic principles as part of their boarding school life and possessed the emotional strength to face the tests of life in all

TABLE 3
Self-control (n=639)

NO	ITEM/STATEMENT	Mean	SD
1	I cheat under certain circumstances. •	3.23	1.20
2	I commit sins when I am alone. •	3.63	1.18
3	I turn to God when I am in trouble.	4.43	0.88
4	I always perform my daily prayers.	4.49	0.76
5	I always read and internalise the teachings of the Al-Quran.	4.09	0.84
6	Understanding the contents of the Al-Quran is the foundation of good ethics.	4.38	0.77
7	Sometimes, I pray less than five times a day. •	3.61	1.27
8	I accept failure as a challenge.	4.33	0.83
9	I remain calm and under control even when I am under stress.	3.47	1.08
SCALE MEAN SCORE		4.05	0.47

Note: Scale 1-5, ranging from (1) strongly disagree to (5) strongly agree
The higher the score, the higher the ethical value level in terms of self- control.
Reverse coded items are marked with •

situations. However, the moderate mean score for item 1 (i.e. “I cheat under certain circumstances) raises a moral concern. With a mean score of 3.23, students’ honesty and truthfulness certainly has room for improvement. Since cheating is a bad moral value, indicating lack of self-control, the students have to be duly reminded that cheating as a behaviour is morally wrong while being truthful in action is virtuous. Item 9, “I remain calm and under control even when I am under stress” (Mean: 3.47; SD=1.08) was also moderately rated; this is an indication that students’ self-control may be enhanced in the nurturing process.

Students’ Ethical Values: Courage

The overall finding in Table 4 seems to suggest that the students have moderately high *Courage* (Mean=3.82; SD=0.70) to speak the truth, act when they see injustice as well as follow college rules and regulations at their own initiative rather than being “imposed” or coerced to follow them. This is positive development of character. Courage is always associated with bravery and doing the right thing despite the cost (Khalidah *et al.*, 2010). A courageous person

will also not hesitate to uphold justice and fairness in his/her dealings in all situations. The students seem to display a high sense of confidence and bravery. This suggests that the schools have commendably succeeded in shaping courage in students.

Students’ Ethical Values: Integrity

The overall result in Table 5 seems to suggest that the students have moderately high Integrity (Mean=3.76; SD=0.62). They seem to appreciate the importance of honesty as indicated by the high mean score for item 3 (i.e. “It bothers me when I have to tell a lie”). They also strongly agree that the *Rukun Negara* principles which emphasise among others, belief in God, respect for humans and compliance with rules and regulations (i.e. the pertinent components of the Integrity value) must be understood and internalised. These are positive findings.

However, the lowest mean score of 3.09 (SD=0.86) for item 1, i.e. “I speak the truth at all times”, though moderately rated, raises a concern as being truthful is a virtue and character trait of people with high integrity as advocated by Donald Zauderer (Stanwick & Stanwick, 2009).

TABLE 4
Courage (n=653)

NO	ITEM/STATEMENT	Mean	SD
1	I am confident to speak the truth.	3.88	0.90
2	I will take action if I see injustice.	3.77	0.85
3	I follow the college rules and regulations because I believe they are good for my character development and discipline.	3.82	1.03
SCALE MEAN SCORE		3.82	0.70

Note: Scale 1-5, ranging from (1) strongly disagree to (5) strongly agree
The higher the score, the higher the ethical value level in terms of courage.

Being truthful in speech is also widely propagated by Islamic teachings as well as by all religions (Chandra Muzaffar, 2009). In fact, lying i.e. not telling the truth is a universally accepted bad moral value and one of the character traits of a *munafiq* (i.e. hypocrite).

Students' Commitment to Excellence

Table 6 shows that overall student commitment to excellence is high (Mean=4.49; SD=0.51), the highest score being item 3, "I perform my best to fulfil the expectations of my parents and family members". This seems to suggest that

the students' commitment to striving for excellence greatly depends on the moral support of parents and family members. Interestingly, item 2, "I strive to perform my best for my own satisfaction" seems to be rated lowest (Mean=4.26; SD=0.94). This also suggests that the students are committed to performing their best not solely for their own self-interests but for the interests of their family, the school and the nation at large. This finding seems to be consistent with the role of humans as *khalifah* (refer *Al Quran, Surah Al Mukminun, 23:1-10 & Surah Al Hujurat, 49:10*). We earlier noted that commitment

TABLE 5
Integrity (n=644)

NO	ITEM/STATEMENT	Mean	SD
1	I speak the truth at all times.	3.09	0.86
2	The Rukun Negara must be understood and internalised by all Malaysian citizens.	4.41	0.79
3	It bothers me when I have to tell a lie.	4.08	1.09
4	There have been occasions when I took others' belongings without permission.	3.47	1.19
5	I believe that plagiarism (copying) is acceptable. •	3.63	1.21
6	I bully under certain circumstances. •	3.87	1.15
SCALE MEAN SCORE		3.76	0.62

Note: Scale 1-5, ranging from (1) strongly disagree to (5) strongly agree
The higher the score, the higher the ethical value level in terms of integrity.
Reverse coded items are marked with •

TABLE 6
Commitment to Excellence (n=654)

NO	ITEM/STATEMENT	Mean	SD
1	I am committed to perform my best for the good name of the college/school.	4.49	0.72
2	I strive to perform my best for my own satisfaction.	4.26	0.94
3	I perform my best to fulfil the expectations of my parents and family members.	4.68	0.57
4	I am committed to performing my best for the nation.	4.41	0.76
SCALE MEAN SCORE		4.46	0.51

Note: Scale 1-5, ranging from (1) strongly disagree to (5) strongly agree
The higher the score, the higher is the commitment for achieving excellence.

to excellence should not only be measured by fulfilment of personal needs and interests but also by one's contribution to society at large. These findings also imply that the students seem to have a high sense of purpose and meaning in life as advocated by Liddell (2009) and Astin (2004). This is a favourable observation and a commendable achievement for the schools. Boarding schools have successfully nurtured a strong sense of social responsibility and purpose in life among students as they strive for excellence in academia.

Relationship between Ethical Values and Commitment to Excellence

Based on Table 7, the values of Courage, Self-control and Integrity are significantly and consistently related to Commitment to Excellence. Therefore, a deduction could be made that higher courage, self-control and integrity will lead to students' higher commitment to excellence.

These findings are certainly consistent with the role of humans as *khalifah* on Mother Earth. In fact, they further support the fundamental Islamic concepts of *taqwa* (a Quranic term for piety), *iman* (a Quranic term for faith; a highly regarded religious ideal) and *ihsan* (benevolence; being kind and helpful) that should be possessed by all Muslims irrespective of biodiversity and cultural differences (Khalidah *et al.*, 2012c; Nor 'Azzah, & Khairiah Salwa, 2004). Considering that all the students are Muslims, the boarding schools in the research setting must therefore continue to nurture the ethical values of Courage, Self-control and Integrity as professed to Muslims to sustain their established reputable image in the education arena while they play their role in shaping future leaders for the global environment. Certainly, this requires a concerted effort from the school management and teachers, who must balance their academic roles with paternalism in the nurturing process.

TABLE 7
Correlation Between Ethical Values and Commitment to Excellence

ETHICAL VALUE	CORRELATIONS	COMMITMENT TO EXCELLENCE
COURAGE	Correlation	0.29**
	Sig. (2-tailed)	0.00
	N	650
SELF-CONTROL	Correlation	0.33**
	Sig. (2-tailed)	0.00
	N	643
INTEGRITY	Correlation	0.21**
	Sig. (2-tailed)	0.00
	N	642

Note: ** - Correlation is significant at the 0.01 level (2-tailed).

CONCLUSION

This study has found that boarding school students possess high Self-control, moderately high Courage and moderately high Integrity based on overall findings. These quantitative findings seem to support that the boarding schools in the research setting have played a commendable role in shaping students' ethical values in general. Interestingly, the study has also brought to surface some moral issues such as truthfulness that need to be duly addressed in the nurturing process.

The findings on the students' cheating behaviour under Self-control, and the act of not telling the truth (i.e. lying) under Integrity, seem to highlight that these two immoral acts (i.e. not telling the truth or lying and cheating) are complementary character traits. As the acts of cheating and lying are habitual character traits and not reflective of people with high integrity, it is doubly justified that the boarding schools must place special attention to enhance the students' Self-control and Integrity as these values are critical for leadership development. This can be done through spirituality programmes and initiatives embedded in the shaping process. This is also pertinent considering the students' physical separation from their parents' guidance and supervision while they are in boarding schools. The students must consciously realise that such behaviour is morally wrong and unethical. Certainly, it would be worrisome if these acts became part of the challenge posed by boarding school culture even though they may be seen

as acts of "desperation" in the "survival of the fittest."

The study has also found that there is consistent and significant correlation between students' ethical values and commitment to excellence. This suggests that Courage, Self-control and Integrity will lead to boarding school students' Commitment to Excellence. The higher the level of the students' Courage, Self-control and Integrity, the higher will be their Commitment to Excellence. Considering the direct relationship between ethical values and students' commitment to excellence, we strongly propose for the schools to double their efforts to enhance students' internalisation of virtues/Islamic ethics through spirituality programmes and initiatives, much as emphasis is duly given to students' academic achievements and co-curricular activities.

Although this study has limitations with its focus on public boarding schools, it has opened to more potential future research in different settings, such as normal daily schools and also other contributing demographic factors such as gender, family background etc. Future studies may investigate whether students' socio-economic background/differences has an influence on their ethical values and commitment to excellence.

This study may be useful as a reference to enhance the Malaysian boarding school system in particular, as boarding schools play a significant role in developing future leaders. This study also supports the concept of sustainable development from a social perspective (Crane & Matten, 2007). In

order to ensure continuous survival and success in this competitive global era, organisations, be they public or private, require ethical and committed leaders who are not only academically qualified but who possess good ethical values, respect human rights and promote social justice. For Malaysia, with its unique multicultural environment, this is critical as the nation adopts the 1Malaysia Concept to realise Vision 2020- to be a developed and civilised nation with the stewardship of ethical leaders.

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Stepping Up in Harmony: Achieving Cluster School Excellence (CSE) Status for Non-CSE Malaysian Secondary Schools

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ABSTRACT

This paper proposes how aspiring non-CSE secondary schools can be on a par with CSE secondary schools through implementing school-based management (SBM). Though Malaysia aims to provide quality education for all children and produce quality human capital for the nation as envisioned in its Education Development Master Plan (EDMP) 2006-2010 through the CSE merit system, of date, only 1 % of Malaysian schools have been identified as holding CSE status (Ismail & Abdullah, 2011; Malaklolunthu & Shamsudin, 2011). The percentage of CSE schools can be increased if more non-CSE secondary schools are groomed to meet the CSE requirements. For the purpose of this study, the researchers reviewed journal articles on SBM, and provide some insights on the challenges of implementing SBM. The research identified that non-CSE secondary schools have to overcome three challenges of SBM, namely, programme, participation and support to achieve CSE status.

Keywords: School-based management, cluster school of excellence, secondary school, Malaysia

INTRODUCTION

Since 2006, 'cluster schools of excellence' (CSE) is the brand given to schools in Malaysia that have been identified as being excellent within their clusters in

management and student excellence. Management excellence incorporates the leadership and administrative capability of the Principal and staff of the school while student excellence embraces the outstanding merit of students both in academic and co-curricular activities. Of date, only 1 % of Malaysian schools have been identified as holding CSE status (Ismail & Abdullah, 2011; Malaklolunthu & Shamsudin, 2011). As of 2013, 263 schools have been accredited as cluster schools

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of excellence. Over and above these 263 schools, 60 schools have attained High Achiever or High Performing School status (Hamzah, 2013). The Education Ministry targets to create 300 such schools by 2015 (Bernama, 2011).

CSE is a merit system that grants high achieving educational institutions autonomy in administration and extra allocation for advancement of specific fields like academic, co-curricular and sports achievements. The merit system offers benefits which are similar to school-based management (SBM). Essentially, SBM is an organisational decision-making model that seeks to decentralise decision-making to the school site (Murphy, 1997). To Yin and Ching (2007), SBM is often specified as the “important approach in improving school practices to meet the diverse expectations of stakeholders in a changing environment through autonomy and decentralization” (p.518). The SBM system permits school personnel to make decisions for learning improvement, the school community to have their say and be accountable for making major decisions and to plan realistic budgets for schools, resources to be redirected to support the goals of particular schools, programmes to be designed with creativity, morale of teachers to be boosted and new leadership to be nurtured (Wohsletter, 1993; Malaklolunthu & Shamsudin, 2011). Meanwhile, another research study (De Grauwe, 2004) highlighted five most repetitive benefits with the implementation of SBM. Among them is that SBM-run schools have more democratic, relevant and

responsible decision-making exercises and greater resource (i.e. funds) mobilisation than non-SBM run schools.

Where the Malaysian Education Development Master Plan (EDMP) 2006-2010 aims to provide quality education for all children and produce quality human capital for the nation (Ministry of Education, 2006), it actually promotes the implementing of SBM. One of the core strategies of achieving the objective of EDMP is to foster a culture of excellence in educational institutions through the formation of CSE. CSE status is achieved through excellence in school niche areas such as student achievement in academic or co-curricular activities or personality traits such as confidence and leadership (Ismail & Abdullah, 2011). The niche areas often help cluster schools distinguish themselves from each other and eventually accelerate the speed of achieving excellence in the specific fields. In order to attain CSE status, cluster schools decide to choose the external experts as coaches, collaborate with external institutions to gain insight and input, provide training for teachers’ professional development and monitor the progress of CSE programmes and activities (Ismail & Abdullah, 2011). Another study mentioned that CSE implementation requires a three-pronged approach: learning and mental reorientation of school community, empowerment of decision-making to school authorities and development of leadership skills among school principals (Malaklolunthu & Shamsudin, 2011). The above findings indicate that efforts in attaining CSE status

should start with the school community's readiness in implementing SBM.

At the moment, for a school to be awarded CSE status, it has to meet a series of criteria that include i) Academic Evaluation of school standard which must be classified as at least Excellent based on the Malaysian Education Quality Standard, and ii) Curriculum excellence (secondary school) where average grades for public examinations are evaluated over 3 consecutive years. The Education Ministry indicates curriculum excellence as reflected when 80 % and more of students of a school have passed all subjects in public examinations or indicate increase in academic performance in public examinations in the said schools (Ministry of Education, Malaysia, 2012). The CSE requirements have been made transparent for aspiring schools in order that they may plan their route for achieving them. This paper proposes how aspiring non-CSE secondary schools can be on par with CSE secondary schools by implementing school-based management (SBM). This paper also highlights the challenges of SBM and suggests ways to incorporate SBM in non-CSE secondary schools.

CHALLENGES OF SBM

In spite of efforts to attain greater autonomy in SBM, it must be pointed out that SBM is not without its challenges (De Grauwe, 2004). A series of issues preoccupy the introduction and implementation of SBM in developing countries (De Grauwe, 2004). SBM may in fact, on the contrary, lead to

a slow and frustrating decision-making process (Wohsletter, 1993). In developing countries, for example, a participatory decision-making process is not commonly practised. In many cases, the implementation of any policy is a top-down approach that may be subject to resistance and non-support from the masses. Besides, lack of a support system may also jeopardise the effectiveness of SBM implementation. Any setbacks that slow down the process and impede the successful implementation of SBM may be caused by weak governments, a limited communication network, lack of well-trained principals, overloaded administrative and managerial responsibilities for principals, gender-related leadership preferences, imprecise power division and accountability between school board or councils and school authority, conflicting interests among school key stakeholders and the danger of treating education as achieving private good instead of public good (Ismail & Abdullah, 2011).

SBM is also subject to a debate on its impact on quality. A global report reminds SBM enthusiasts that "SBM has seldom been introduced in order to improve quality of teaching and learning" (De Grauwe, 2004, p.7). Teachers in Israeli schools were found to have improved their motivation and sense of commitment when they were given greater autonomy (Gaziel, 1998). Innovative programmes and practices were churned when UK and New Zealand school principals were empowered to make decisions (Williams & Portin, 1997). In addition, studies conducted in Nicaragua indicate positive correlation

between student academic performance and staff selection and staff monitoring, made possible through SBM initiative with relative autonomy to schools (King & Ozler, 1998). Jimenez and Sawada (1999) provided a well-cited example of El Salvador's community-managed schools or *Education con Participacion de la Comunidad* (EDUCO) schools where improvement in student performance and motivation was accredited to amplified community and parental participation. Sawada and Ragatz (2003) extended Jimenez and Sawada's (1999) study a step further and found that staff selection is a crucial determinant in student performance. The findings of these studies suggest that student performance is correlated to the participation of critical school stakeholders. In other words, high involvement of key stakeholders facilitates the schools in making decisions in implementing SBM effectively and ensuring positive impact of SBM on school performance.

Despite the issues preoccupying the introduction, implementation and impact of SBM, the concept is still widely adopted by policy makers around the world. The implementation often materialises in various forms such as school-based governance, school self-management and school site-management. In Malaysia, SBM has been introduced through CSE, which gives recognition of excellence for 5 main categories of educational institutions, namely, primary schools, secondary schools, special education and vocational schools, international and private schools and

matriculation colleges and teacher training institutes (Ministry of Education, 2006). The high achieving institutions in each category are branded as cluster schools. The establishment of cluster schools in Malaysia was aimed to promote a culture of excellence in educational institutions relevant to students' needs and aspirations, and was adapted from the British concept of school diversity (Ismail & Abdullah, 2011).

INCORPORATING SBM AT NON-CLUSTER SECONDARY SCHOOLS IN MALAYSIA

Drawing on the findings of previous studies, the implementation and evaluation of SBM are subject to some prerequisites: the identification of niche areas, the orientation of the school key stakeholders and the identification of external supports. In essence, non-cluster secondary schools have to prepare themselves by implementing programmes and activities that match their current strengths, to educate and train the school key stakeholders (i.e. Headmasters; Head teachers and Teachers) with necessary skills and to identify the external supports they will require.

PROGRAMMES FOR NICHE AREAS

According to Lingard *et al.* (2002), SBM was introduced to Queensland schools in Australia in the 1980s in order to improve student outcomes. However, Lingard *et al.* (2002) mentioned that there is limited evidence to indicate the success of the decentralisation system. Thus, in 2000, efforts were pooled to revisit professional

concerns and school-based management on teaching and learning. As it was a longitudinal study, the Queensland School Reform Longitudinal Study (QSRLS) was developed to study the relationship between school-based management and improved student outcomes (if any). The QSRLS worked on improving authentic pedagogy and school reform and their mediation by teachers' professional learning communities (Lingard *et al.*, 2002, p. 8). Lingard *et al.* (2002)'s study indicated that for SBM to be successfully implemented, government efforts are required at all levels i.e. policy and funding strategies and social democratic discourse are essential at all stages of discussion from decision-making policies to active implementation (Lingard *et al.*, 2002). Such efforts, if not synergised, may result in an uphill task and continued struggle in the implementation of the programme.

In comparison to the study by Lingard *et al.* (2002), an earlier study by Gamage *et al.* (1996), however, mentioned that the success of SBM implementation in Victoria, Australia was dependent on the involvement of school councils for changes to occur in the general education policy of the school (p. 26). The study reinstated the crucial involvement and participation of school councils in implementing greater autonomy towards school and members of the school staff and community.

In addition, the success of SBM implementation is evidenced in a recent study conducted by Bandur in Indonesia (2011). To Bandur, the implementation of SBM can lead to improvement in

teaching-learning environments and student achievement (Bandur, 2011, p. 845). Bandur made mention how the decentralisation of autonomy to schools could create partnership in participatory school decision-making in terms of goal, mission, vision, budget, textbook allocation, school curriculum, school buildings and even students' discipline policies (p. 845).

In order to strive for successful SBM implementation, there is a need to achieve excellence in both academic and co-curricular programmes. Typical programmes comprise objectives, activities and assessment. The programmes have to represent the schools' niche areas (i.e. academic and co-curricular achievements). Before programmes can be planned, non-CSE secondary schools need to identify the niche areas that they would like to excel in. Specifically, they have to audit the schools' current strengths. The audit will indicate whether the schools should focus on academic performance, co-curricular activities or character development, such as confidence and leadership.

In terms of academic performance, non-CSE schools have to identify students' outstanding academic performance at all levels in both examination and non-examination classes. Academic excellence is measured by students' outstanding and excellent academic performance to be among the best students of the school (Malaklolunthu & Shamsudin, 2011). Students in CSE schools are driven by the school's culture of excellence to continuously perform their best academically. This culture of excellence

is marked by the students' need to excel and compete among themselves to emerge top student and contribute towards the schools' high academic performance yearly. CSE schools have slogans like "*Aim high and reach the stars*" and "*Be the best and beat the rest*" to create motivation among students (Malaklolunthu & Shamsudin, 2011, p.1489). Academic performance remains one of the most important niche areas in attaining CSE status.

At the same time, student performance in co-curricular activities is also enlisted as one of the criterion in achieving the status of cluster school. School management is required to provide space and opportunity for students to plan, manage and control events and activities either at the school, national or international levels (Ismail & Abdullah, 2011). Students participate, compete and excel in various types of co-curricular activities at both national and international levels. Student participation in various activities such as choral speaking and brass band competitions at national and international level are a few examples to showcase their co-curricular performance.

Student niche areas can also be showcased by mastery of languages such as fluency in a foreign language like Arabic (Malaklolunthu & Shamsudin, 2011). Ismail and Abdullah (2011), on the other hand, cite participation in rugby as one of the niche areas in co-curricular performance. Niche areas must be carefully selected to befit the profile of students' co-curricular abilities and potential. In addition, different schools may have potential in different

areas. For some it may be sport, while for others it may involve participation in various societies, clubs or uniform bodies. School management must ensure that niche areas are based on the students' abilities and potential drawn from the schools' outstanding achievement i.e. record of student performance in competitions at national and international levels.

At the same time, CSE schools are factored by students' development and excellence in leadership and management activities. Leadership and management activities include independent participation and management of school-based activities by students. In other words, students are given the task of "plan[ning], manag[ing] and control[ling] the events and activities either at school, national and international level" (Ismail & Abdullah, 2011, p. 6). Ismail and Abdullah cite the example of students' independent management and organisation of a school summit with international participation. In other words, teachers need only provide guidance to students while the students organise the entire event. Such activities enable the students to develop, nurture and grow in confidence and leadership capacity. School management should indicate niche areas in leadership and management areas and provide students the viable opportunity to participate and develop such character-building skills.

However, it is important to note that successful implementation can only occur if there are clear SBM guidelines among the school, staff and community

(Pomuti, 2008). Pomuti mentioned that although governmental support was evident among several Namibian primary schools, reluctance in sharing resources and greater autonomy to schools was met with resilience. As such, school authorities faced difficulties in implementing the policy among the selected primary schools. The study concluded that teaching supervision in isolation could not be linked to CSE. However, efforts are required to provide clearer CSE guidelines on teaching and learning among students, teachers and community in the said schools (p. iii).

Thus, it is paramount that once programmes and activities that meet the criteria have been identified, the state Education Department and the Ministry of Education have to specify how they are going to monitor the progress and impact of the said activities in the schools. It is pertinent that school authorities deliberate the niche areas and provide the space and opportunity to develop such areas of excellence. School authorities have to ensure that programmes are developed and participation is sustained with the commitment of the school stakeholders (i.e. Headmaster, Head Teacher and teachers). Efforts need to be set in place by school authorities and shared with the stakeholders of the school such as staff, students, community and other relevant parties involved in the performance of the school. In other words, school authorities must ensure that there is transparency among stakeholders in niche areas targeted for the school.

ORIENTATION OF KEY STAKEHOLDERS

One of the key stakeholders of SBM is the body of school staff. Collectively, school staff such as Principals or Head Teachers, Subject Head Teachers, teachers and non-teachers are responsible for the success or failure of SBM implementation. Successful implementation often requires optimum participation of school staff. Schools adopting SBM should emulate business entities in the way they are managed. Schools should embrace the four management functions namely, planning, organising, leading and coordinating (POLC). Depending on the managerial level, managerial staff focus on POLC with varying frequency (Mahoney *et al.*, 1965).

In Malaysian school contexts, school Principals and Subject Head Teachers are the managerial employees, while teachers and non-teachers are the non-managerial employees. The school principals represent the top managers of the school while the Subject Head Teachers are the first-line managers. Mahoney *et al.*'s (1965) findings suggest that top managers (i.e. the principals) perform the planning and organising functions more often than the lower-level managers (i.e. the Subject Head Teachers). The findings also indicate that the low-level managers are employing leading functions more frequently than the high-level managers. In contrast, the controlling function is less frequently employed by the low-level managers than the high-level managers.

The simple organisational structure suggests that school Principals or Head Teachers, and Subject Head Teachers should possess some basic managerial skills, namely conceptual (i.e. ability to analyse and diagnose complex situations), interpersonal (i.e. ability to work well with others at individual and group levels), technical (i.e. knowledge and techniques to perform relevant tasks) and political (i.e. ability to build a power base and establish the right connections) skills (Robbins *et al.*, 2011). In the school context, as educators, managerial staff are experts in teaching and learning, and as teachers, they are managers of their colleagues. In other words, they possess the necessary technical skills to perform teaching-and-learning related tasks and some of the essential interpersonal skills such as active listening and effective feedback while dealing with others. However, being at the managerial level, they are also expected to possess a complete set of interpersonal skills, namely, empowerment skills, and the other two managerial skills (i.e. conceptual and political skills) to be effective.

For educators, two of the managerial skills (i.e. interpersonal and political skills) may have been acquired through experience on a trial and error basis, but they may not be effective to facilitate the implementation of SBM. For example, most educators have good interpersonal skills for dealing with learners, but not necessarily with adults. They may not be aware that their communication affects the effectiveness of their feedback and the outcome of their

empowerment to teachers and non-teachers. Similarly, communication also influences the process of developing a power base and right connections with others. In essence, communication skills influence other related skills such as effective feedback, empowerment and networking skills. These skills are often associated with leadership skills.

Leadership is defined as the “ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organisation” (Ireland & Hitt, 2005, p. 63). In SBM context, school Principals and Subject Head Teachers have to develop leadership skills through which they “influence a group of individuals to achieve a common goal” (Northouse, 2010, p. 3). Among the desirable characteristics of leaders are being honest, forward thinking, inspiring and competent (Daft, 2005). Besides, managerial staff at schools needs to be transformational leaders practising four elements, namely, individualised consideration, intellectual stimulation, inspirational motivation and idealised influence (or charisma) on their subordinates (Avolio *et al.*, 1991). The four elements would help them to maintain flexibility and synergy with others at the school in their effort to achieve excellence. These elements often help them to be effective mentors to other school staff, to stimulate school staff’s thinking and be stimulated by them, to generate excitement and confidence, and to develop personal power and influence over school staff. In other words, managerial

staff can introduce and implement SBM initiatives effectively if they can successfully lead and mobilise others to do so.

Incorporating SBM represents managing change in a school from a bureaucratic administration to a democratic structure (Gamage *et al.*, 1996). Such change often involves either Lewin's (1951) three-step change process involving unfreezing the status quo or changing to a new state and freezing the new change to make it permanent (Robbins *et al.*, 2011). However, any change invites some resistance from sections of the followers. In the SBM context, resistance is likely to come from teachers and non-teachers. Management scholars suggest several techniques to minimise resistance such as education and communication, participation, facilitation and support, negotiation, manipulation and co-optation and coercion (Robbins *et al.*, 2011). The first three techniques are often used with non-powerful groups, while the last three techniques are recommended when resistance seems to be coming from powerful groups. In the SBM context, Principals or Head Teachers need to implement one of the recommended techniques to gain support from teachers and non-teachers. However, to gain support, Principals or Head Teachers need to implement the concept gradually, and empower staff to make relevant decisions (Wohsletter, 1993). Teachers and non-teachers may not be aware of the value of SBM in achieving CSE status. Thus, school Principals or Head Teachers have to introduce the SBM on a gradual basis to create awareness among teachers before

implementing it. Such awareness helps to prepare teachers to understand the value of any new initiative. Once such awareness has been created, leaders usually find it easier to get followers (i.e. teachers and non-teachers) to be cooperative, dependable and honest. This eventually encourages teachers and non-teachers to be honest in providing and exchanging feedback pertinent to realising the goal of their schools, that is, achieving CSE status.

SUPPORT

Besides minimising resistance, incorporating SBM also requires support from other key stakeholders such as the governing bodies. Once the programmes have been selected and the orientation of the school staff to SBM has been conducted, schools need to ensure that they have the relevant resources, namely, manpower, time and money. These resources are often not readily accessible for most schools. Relevant and sufficient manpower, that is, experts, need to be acquired or custodians need to be trained to conduct the relevant programmes. Being competent is another desirable characteristic of group members (Daft, 2005). Ensuring staff are competent is often subject to time and money. For example, the most effective implementation of SBM have the teachers available outside of school hours, and the number of staff is adequate to sustain programmes (Giordano, 2008). Working outside of school hours usually requires teachers to allocate their time with expected monetary or non-monetary rewards. Meanwhile, ensuring adequate

number of staff may not be timely since the feeder of manpower is often the state education department. Without timely and sufficient manpower, the school may not be able to achieve CSE status in time. In fact, similar findings were revealed by Pomuti's (2008) study, that is, autonomy of school management and scarcity of resources impede the implementation of SBM in schools. Najjumba *et al.* (2013) makes similar mention of the need to strengthen school management practices and support to ensure the successful implementation of the said programme in Ugandan primary schools.

The main source of funds for schools often comes from the state and governing bodies such as Ministry of Education or local state authorities. Should schools intend to get other sources of funding, schools must provide staff administrative training and time to adjust to new roles and gain the necessary financial support (Wohsletter, 1993). Training in preparing proposals

ranging from identifying problems and benefits of funding the school programmes to justifying the required funds is vital. Without such training, schools will not be able to elicit funds from other public or private agencies.

One way of maximising resources is to ensure that school management select niche areas relevant to student potential and ability based on student performance in competitions at national and international levels. Essentially, the success of SBM is a consolidation of many factors ranging from school management, allocation of resources, experienced and adequate manpower trained in specialised fields to oversee and manage co-curricular programmes and activities and most importantly, student potential and ability that fit the bill. In order to achieve CSE status, the researchers propose the conceptual framework shown in Fig.1. All the three aspects i.e. programmes for niche-areas, orientation of key stakeholders and support need to be identified.

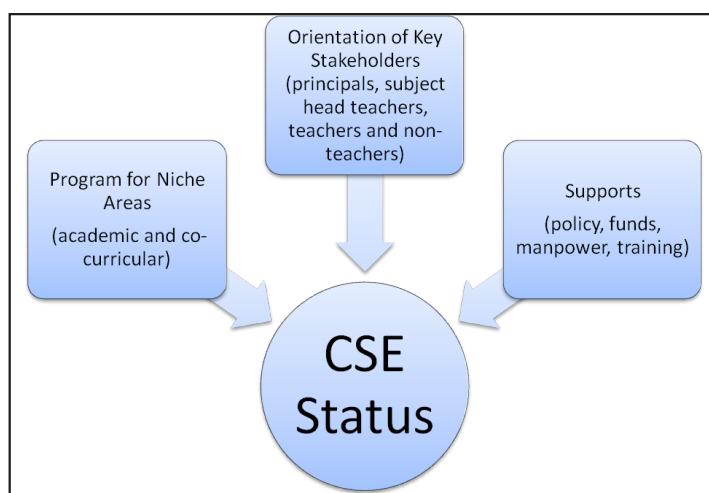


Fig.1: Conceptual Framework of SBM Implementation for CSE Status

CONCLUSION

In general, achieving CSE status through SBM requires prioritisation of many factors including an effective teaching-learning environment, school support and student receptivity to learning excellence (Yin & Ching, 2007). What can be summarised from the studies on SBM is the right combination of push and pull factors and the realistic mechanism to implement such a decision-making model. Different countries approach the said merit and decentralisation system with different emphases on niche areas depending on the resources and funding available in the said country. In this context, this paper elaborates the factors that encompass areas such as student achievement in academic or co-curricular activities or personality in character development. For CSE to be achieved, collaborative efforts are required between policy makers and a supportive technical mechanism to ensure the sustained implementation of the said merit system (Adediran *et al.*, 2012). Giordano (2008) makes mention that using school clusters mainly as administrator units does not allow schools to achieve their main objective nor does it improve education quality. Successful implementation of SBM and consequently CSE requires a number of committed stakeholders at different levels. Real change can be accomplished through grant programmes that allow cluster management committees to define their plans for education improvement.

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The Perception of *al-‘Adl* in Critical Thinking: A Comparative Study of Muslim Engineering Undergraduates in Malaysian Universities

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ABSTRACT

The element of justice or *al-‘adl* in the context of Islamic critical thinking deals with the concept of justice as informing the thought process that critically rationalises the truth in a fair and objective manner with no irrelevant interference that can jeopardise a sound judgment. This Islamic axiological element is vital in technological decision-making as it addresses the issues of religious values and ethics that are primarily set to fulfill the purpose of human life on earth. The main objective of this study is to reveal the distinguished element of *al-‘adl* in Islamic critical thinking and determine the significance of the perception to Muslim engineering students from different Malaysian universities. This comparative study looks into the factors that lead to a better comprehension among the undergraduates of the concept of *al-‘adl* in critical thinking. The study employed the survey method and Analysis of Variance (ANOVA) technique involving 549 Muslim engineering undergraduates from six Malaysian universities. The results generally indicate that undergraduates who have been exposed to the Islamic perspective of critical thinking possess a significantly clearer idea of the concept of *al-‘adl*. The study also suggests that faculties of engineering in Malaysian universities should reconsider the current concept of critical thinking and embed in it elements of Islamic critical thinking.

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INTRODUCTION

The concept of *al-‘adl* (justice or fairness) varies in essence and scope of knowledge among different disciplines and from one

school of thought to another, but within the context of Islamic critical thinking, it is manifested in religious values and ethics. *Al-'adl* is derived from the verb *'adala* which literally means first, to make something straight or to sit straight, to amend or to alter; second, to draw away, depart or deflect from one path to another; third, to be equal or equivalent, or to equalise; and fourth, to balance or counter balance (Ibn Manzur, 1990; al-Fayyumi, 1987).

These expressions correspond to the terminological definition of *al-'adl* as “the thing that is established in the mind and soul as being righteous or upright”, also known as “*mustaqim*” (Ibn Manzur, 1990, v. 11, p. 430), as opposed to “injustice” or “unfairness”. However, it is important to note that the notion of justice in Islam is also widely perceived as placing things in their rightful place, for instance, as a response against tyranny or *zulm* (al-Ghazzali, 2002). *Zulm* is also etymologically related to the notion of darkness and gloom that denies one’s basic right to. As such, *zulm* is often interpreted as oppression although in reality it encompasses a broader and deeper meaning (Mahmoud Ayoub, 1996).

These definitions rouse a broader perception of the concept that ranges beyond the Western value of absolute equality. Islamic justice does not emphasise only the notion of equality, but rather the idea of fair equilibrium as equality is sometimes relative, and in Islam there are cases where justice is achieved through inequality such as the distribution of Islamic inheritance according to al-Quran in chapter 4, verse

176. Nevertheless, this perception of justice is still, in general, embedded in the concept of righteous or *mustaqim* just as tyranny or *zulm* is also an element of unfairness and injustice.

Al-Quran repeatedly warns people to be just in making judgments and not to be influenced by personal interests, prejudices and other biases. Allah says in al-Quran in chapter 5, verse 8:

“O You who believe! Stand out firmly for Allah and be just witnesses and let not the enmity and Hatred of others make you avoid justice. Be just: that is nearer to piety, and fear Allah. Verily, Allah is Well Acquainted with what you do.”

In another verse, chapter 4 verse 135, Allah says:

“... so follow not the lusts (of your hearts), lest you may avoid justice, and if you distort your witness (justice) or refuse to give it, Verily, Allah is ever Well Acquainted with what you do.”

These Quranic injunctions clearly indicate the importance of just and objective reasoning in making sound judgments and decisions that are free from evil desires, which are largely represented through irrelevant emotional interference and personal preferences or antagonism. Thus, to be critical in making a sound and just decision is obviously a religious obligation which can only occur if a person is willing

to adhere to piety and abandon his desire that could distract him from looking at reality and truth (*al-haqq*).

In fact al-Quran indicates a very strong relationship between *al-‘adl* and *al-haqq* to the extent that it often uses the term *al-haqq* to describe the meaning of *al-‘adl* as in verse 26 of chapter 38:

“O Dawud! Verily! We have placed you as a successor on earth, so judge you between men in truth (and justice) and follow not your desire for it will mislead you from the path of Allah”

Although the meaning of *al-haqq* has been conveyed in the larger perspective of the Qur’anic worldview as compared to *al-‘adl*, the connection between them is apparent especially in matters of justice (Jamal al-Banna, 1995). The Quranic term of *al-haqq* is comprehended as the ideal and absolute truth of Islam, while *al-‘adl*, on the other hand, is perceived to be more relevant to the practical aspect of justice. Hence *al-‘adl*, in a way, can be considered as a form of *al-haqq*, which specifically relies on its application aspect to support the firm and generic concept of Islamic truth or *al-haqq* (Jamal al-Banna, 1995).

This two-layered notion of *al-‘adl* is discussed in an abstract way by renowned Muslim philosopher, al-Kindi, in his search for the truth (*al-haqq*) both as theory and practice. In his attempt at providing a solution for the harmony of revelation and reason, al-Kindi distinguishes *al-haqq*

at two levels: the ultimate truth and the practical truth. While acknowledging the agreement between revelation and reason in the grounding of the final ultimate truth, he insisted on the necessity of knowing truth in practice, which is the primary concern of the philosopher. In taking this position, al-Kindi deals with the concept of justice on two levels: divine justice, in which reason and revelation are in agreement, and rational justice, which is the product of reason (al-Kindi, 1978).

Al-Kindi’s theory of rational justice expresses justice as a quality inherent in man that stimulates him to do the right thing, guided and determined by reason. Rational injustice, on the other hand, according to al-Kindi, is accidental and an evil act produced by desire through wrath or other intemperate impulses that restrain the mind to operate in reason. Justice, however, is not merely a counterpart of evil, but also a virtue that is to be nurtured and improved by man in the light of his comprehension of the truth (Majid Khadduri, 1984). Hence, man, according to al-Kindi’s philosophical theory of justice, must not only know and comprehend justice but also act in accordance with justice, which can only be reached through sound and critical reasoning. Al-Kindi’s discussion on rational justice is observed to be vastly relevant to Islamic critical thinking as it elevates the religious virtue of justice as an important element in the thinking process.

The Islamic element of *al-‘adl* in critical thinking is perceived to have a great impact on Muslim engineering education. This Islamic axiological element is vital

in technological decision-making as it addresses the issues, values and ethics that primarily fulfil the purpose of human life on earth. The very nature of engineering deals with ways to exploit human and material resources for the well-being of mankind, exposing engineers to dilemmas and arguments that acquire critical evaluation in making right decisions. It is common for today's engineer to be confronted with several conflicting demands particularly with regards to social and environmental issues. Being trained in Islamic thinking would, therefore, help an engineer in his work.

Engineering education must not purely be observed from the rational and secular context which often fails to provide enlightened answers to human problems. Islam views that all curriculum components of engineering education, whether purely technical or inter-disciplinary, must not be molded on an anti-religious perspective but rather, be integrated with Islamic cosmological doctrines, ethics and values (Syed Naquib al-Attas, 1993). At the same time, the humanities component of the curriculum, in which some of them are taught from the Islamic perspective, must also not be dealt with in isolation from the realm of science and technology, particularly so for philosophy and critical thinking.

Similarly, with regard to the teaching of critical thinking among Muslim engineering undergraduates, the context of the thinking should never stray far beyond the Islamic concept of. It is naive to believe the possibility of a framework

of critical thinking that is not rooted within a worldview (Muhammad Mumtaz Ali, 2008). Thinking is, in fact, closely related to the notion of belief and faith, and the embedding of a Western-orientated thinking theory in the mind of Muslim students requires a decisive investigation of its impact particularly when in the case of Muslim engineering students, most have never been exposed to the concept of Islamic thought. Thus, it is worthwhile to explore and apprehend the students' perception on thinking in order to observe the impact of current features of critical thinking skills and concepts being taught or which are embedded in the Malaysian engineering curriculum.

A study on Islamic critical thinking among Muslim engineering students was conducted at Universiti Teknologi PETRONAS. The study by a group of researchers led by Abdur-Rahman (2012) used questionnaires as an instrument to analyse the students' perception of Islamic critical thinking. It involved 100 undergraduate Muslim engineering students and discovered that the engineering students had a positive perception towards Islamic critical thinking even though they had never learnt about Islamic critical thinking as a stand-alone subject. In another study on Islamic critical thinking, the perception of Muslim engineering students in six Malaysian institutions of higher education of the concept of *al-'adl* was analysed (Mohd Nuri Al-Amin Endut *et.al*, 2012). The study engaged mixed methods consisting of both quantitative and qualitative

approaches involving undergraduate Muslim engineering students. The study generally indicated that Muslim engineering undergraduates in the higher institutions had rather a good comprehension and awareness of *al-‘adl* with a lesser awareness of the importance of objective thinking. However, the study did indicate that there were several areas of the subject, particularly rational justice in Islam, of which the students were relatively poorly informed.

However, the result of the previous studies did not reveal the significant difference between the perceptions of the undergraduates towards the element of *al-‘adl*. In addition, it did not indicate in which university the undergraduates had a better perception of the concept. Such a comparison is important as it reveals the basis, such as curriculum and teaching model, that might have led the undergraduates to having a better comprehension of Islamic critical thinking. It also raises valid concerns that might need to be addressed in order to improve the understanding and awareness of Muslim undergraduates with regard to the concept of *al-‘adl* in Islamic critical thinking. Therefore, the main objective of this study is to compare and analyse the significance of the perception among Muslim engineering students from different Malaysian universities of the element of *al-‘adl* in Islamic critical thinking.

METHODOLOGY

The study involved 549 respondents, of whom 27.3% were from Universiti Teknologi Malaysia (UTM), 19.6% from the

International Islamic University Malaysia (IIUM), 16.7% from Universiti Sains Malaysia (USM), 9.1% from University of Malaya (UM), 16.2% from Universiti Teknologi PETRONAS (UTP) and 11.1% from Universiti Tenaga Nasional (UNITEN). These universities were selected because they are among the top-ranking universities in Malaysia for a degree in engineering. Two private universities, namely UTP and UNITEN, were included to compare the results between public and private higher learning institution.

The respondents' profile exhibits a gender representation of 54.6% male and 45.4% female, which is fairly proportionate for this study. In terms of the year of study, the largest number came from the final or fourth year of study, representing 46.2% of the sampling, followed by the second year (27.7%), third year (22.3%) and finally, the first year of study (3.8%). On the whole, the largest portion (68.5%) of the respondents was from the third and fourth year of study; these students portray a better representation of the results as they would have gained more exposure to the engineering concepts and profession.

To administer the survey, a self-developed research questionnaire comprising two sections was constructed; the first section (Section A) covered demographic data of the respondents and the second section (Section B) consisted of 19 items designed to gauge the undergraduates' perception of *al-‘adl* through its five constitutional components of Religious Values (4 items), Relevance Factor (4 items), Objective

Reasoning (4 items), Truth Orientated (4 items) and Religious Stimulation (3 items). Section B of the questionnaire employed the selected-response items format that dictated the responses on a five-point Likert scale ranging from 1 for “Strongly disagree” to 5 for “Strongly agree”.

An expert panel of 10 individuals from the areas of Islamic Thought and Engineering were engaged to seek their viewpoints and to validate the instruments used in the study; seven of the experts looked into the area of Islamic Thought and Education while the other three dealt with content from the engineering perspective. After discussions with the expert panel and amendment of the survey items, the survey questionnaire was administered for a pilot study involving 59 Muslim undergraduate engineering students to test its reliability. The reliability test of the survey instrument revealed a Cronbach’s alpha of 0.8, which showed its high reliability.

The data were analysed using the Statistical Package for Social Sciences (SPSS) software version 11.5 to determine the perception of Muslim engineering undergraduates in Malaysia. This study mainly employed Analysis of Variance (ANOVA) to explain and determine the significance of the study findings. ANOVA is one of the statistical techniques to compare the mean scores of more than two groups. It involves one independent variable that has a number of different levels which correspond to the different groups or conditions. It actually compares the variance or variability in scores between the different groups with

the variability within each of the groups (Pallan, 2007). It was necessary to use ANOVA, which is the standard technique employed to compare mean scores of more than two groups of respondents, as this study sought to compare the level of perception of engineering students from different universities of a given subject in order to relate them to the teaching models of critical thinking employed in the respective universities.

RESULTS AND FINDINGS

The ANOVA test results for the difference in mean scores are presented in Table 1. The perception of *al-‘adl* shows the Sig. (significant value) of .000, which implies highly significant differences somewhere among the mean scores of the six sampling groups, where each group represents a different university. In employing ANOVA, the differences in population means can be considered as statistically significant only if the Sig. value is less than or equal to .05 (e.g. .03, .01 or 0.001) (Pallan, 2007). Thus, the test has confirmed the presence of significant differences among the mean scores of the respondent groups, which opens more doors to further research on comparative studies.

Table 2 shows the distribution of mean of perception of *al-‘adl* according to the different sampling groups. The result shows a uniform level of mean scores that range from 3.45 to 3.72, based on a five-point Likert scale ranging from 1 for “Strongly disagree” to 5 for “Strongly agree”. This implies a constantly moderate high perception of the concept of *al-‘adl*

among all sampling groups.

The highest mean score of 3.72 (SD = .332) was recorded for the engineering undergraduates of IIUM for the overall perception of *al-‘adl*. The second highest mean was recorded for the group of USM engineering students who scored the mean of 3.69 (SD = .343) followed by UTM and UNITEN with the respective mean score of 3.68 (SD = .390) and 3.60 (SD = .430). The second lowest mean score came from UM respondents, followed by UTP respondents with the mean score of 3.59 (SD = .404) and 3.45 (SD = .355) respectively.

DISCUSSION

On the whole, the ANOVA test results confirmed the existence of a significant difference in the mean scores of the perception of students in the sampling

groups of the concept of *al-‘adl*. The results indicated that IIUM and USM Muslim engineering undergraduates scored the highest mean value for perception of the element of *al-‘adl* in Islamic critical thinking. These findings imply that Muslim engineering students in these two universities have a better comprehension and awareness of Islamic critical thinking than those Muslim students at the other four universities.

The findings on the comparison of perception of the sampling groups suggest that undergraduates who had been exposed to the Islamic perspective of critical thinking possessed a significantly higher perception of the concept. These are undergraduates of the only two universities from the cluster sampling, IIUM and USM, that have embedded the Islamic perspective of critical thinking in their curriculum. IIUM,

TABLE 1
Results of ANOVA – A Comparison of Mean Values of the Perception of *al-‘adl* Derived from Each University’s Respondent Group

Perception	Respondent Group	df	F	Sig.
<i>Al-‘Adl</i>	Between Groups	5	6.774	.000
	Within Groups	543		
	Total	548		

TABLE 2
Distribution of Mean and Standard Deviation According to the University’s Respondent Group

Perception	University	N	Mean	Std. Deviation
<i>‘Adil</i>	IIUM	107	3.72	.332
	USM	93	3.69	.343
	UTM	147	3.68	.390
	UNITEN	62	3.60	.430
	UM	51	3.59	.404
	UTP	89	3.45	.355
	Total	549	3.63	.382

for example, upholds the worldview of *tawhid* and the Islamic philosophy of the unity of knowledge; as an Islamic university, IIUM is naturally obliged to constructively integrate Islamic values and perspective in this particular course. According to Nur Anisah Abdullah, IIUM has included discussions on Islamic values and decision-making in its critical thinking courses (Nur Anisah Abdullah, interview, 22 November 2010).

As for USM, despite its differences compared to IIUM in terms of vision and philosophy, it has made the related thinking course meaningful by embedding in it the dimension of religious sanctity known as '*luhur*' thinking. *Luhur* thinking is thinking associated with a sacred vision that includes the supernatural, divine belief and faith in a Creator according to Islamic teaching. This thinking distinguishes itself from Western thinking in its reliance not only on logical and scientific methods but also on inspiration and guidance by from God's revealed principles (Shuhairimi Abdullah, & Huzili Hussin, 2006). Therefore, *luhur* thinking links all human behaviour to the principle of *tawhid* that serves as the ultimate bridge between worldly endeavours and final judgement in the hereafter.

UTM's Muslim engineering undergraduates, despite the minimum exposure to Islamic critical thinking, also showed a good perception of the concept of *al-'adl*. This result may have been influenced by an embedded model approach employed by UTM to inculcate the concept and skill of critical thinking instead of teaching

it as a standalone subject as practised in the engineering faculties of University of Malaya (UM), Universiti Sains Malaysia (USM), the International Islamic University Malaysia (IIUM) and Universiti Teknologi PETRONAS (UTP).

The embedded model is applied across the curriculum to engage with the process of teaching and learning of all subjects. This model does not have a specific subject. Instead, students are trained to learn and attain critical thinking skills through formal teaching and learning, which applies the critical thinking approach without amending initial content and learning outcomes. In general, lecturers of all courses implement the model by assimilating appropriate elements of critical thinking skills into their lesson plans in order to achieve learning outcomes (Kementerian Pengajian Tinggi Malaysia, 2006).

On the other hand, the stand-alone subject model implies the offering of a thinking skills subject specifically aimed at inculcating critical thinking skills in a formal and explicit mode without connecting it to others subjects. The subject is normally offered either as part of a university's requirements that oblige all students to take the subject, or as an elective subject under the humanities courses that provide the students the option of choosing another subject. Generally, this credited subject is specifically designed to fulfil the need of the faculty and is formally considered to be part of the Engineering curriculum.

For example, UM's Faculty of Engineering offers the compulsory course

‘Thinking and Communication Skills’, which partly aims is to explicitly introduce students to critical thinking, particularly on how to explain and analyse ideas, analyse and evaluate arguments, determine source credibility and recognising fallacies (Mohd Hamdi Abd Shukor, interview, 17 August 2010). In USM, all engineering undergraduate students are required to take the ‘Thinking Technique’ course that elaborates on the concept and definition of thinking techniques and styles that are closely related to critical thinking. The course also explains the thinking tools and techniques used in decision-making based on an engineering perspective. In UTP, engineering students have to take a critical-thinking-related course, namely ‘Thinking Skills’, in their foundation or pre-university programme. The course basically discusses the principles of thinking and the tools and approaches used for various decision making models.

UTM does not provide a specific course for critical thinking within their formal academic curriculum but rather focuses on the embedded model. UTM believes that these skills should be imbued through appropriate teaching and learning methods that are to be applied across all courses. As such, UTM has established a Centre for Teaching and Learning (CTL) that provides frequent training sessions for its teaching staff that would help them infuse and coach students with practical aptitude in applying critical thinking and other generic skills via various teaching and learning techniques. In fact, these particular

techniques could inculcate an even higher level of critical thinking compared to the theoretical approach of the stand-alone subject (Khairiyah Mohd Yusof, interview, 26 January 2011).

Nevertheless, it is quite clear that the embedment of the Islamic perspective in the existing critical thinking courses has made the difference in enhancing students’ spirituality and uplifting their religious consciousness. The ANOVA results have evidently elicited the need to re-evaluate the present curriculum of critical thinking offered in Malaysian universities, particularly with concern to Muslim students, in order to instill the proper concept of Islamic critical thinking in them. The introduction of this concept would likely prepare Muslim students with the righteous Islamic mind and attitude that would enable them to comprehend engineering enterprise within the Islamic worldview.

CONCLUSION

Muslim undergraduates should be exposed to the Islamic conceptual definition of critical thinking that offers a unique and holistic perspective that distinguishes it from the existing dominant Western perspective of critical thinking. The element of *al-‘adl* relates the concept of critical thinking to the Islamic vision and worldview that helps to strengthen students’ religious awareness and comprehension as well as fortify them from the secular conception of critical thinking. The overall finding of the study has brought to light some improper

perceptions among Muslim engineering undergraduates of the insight and true meaning of engineering from the Islamic worldview. These Muslim undergraduates need to be well conscious of the Islamic worldview and be able to integrate the religious values into their engineering knowledge and practices. They need to realise that they are actually performing their religious task and obligation by means of engineering. They have to deliberately deem engineering as an act of worship.

As such, the faculties of engineering in Malaysian universities are suggested to reconsider the current concept of critical thinking and to embed it with the Islamic critical thinking elements. The embedment of these elements into current critical thinking modules will elucidate the thinking within the Islamic worldview, which in consequence, will allow for easier integration with engineering education with the anticipated result of opening up the undergraduates mind and strengthen their faith in Allah. For that matter, it is highly recommended for any thinking related courses to be approached in a similar way to promote a holistic Islamic perception instead of the reductionist secular insight.

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ICT and Women's Empowerment in Egypt: An Empirical Study

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ABSTRACT

Studying the Digital Gender Divide in African countries, including Egypt, is considered vital for social and economic development. It is an established fact that one of the UN Millennium Development Goals is gender equality and the empowerment of women. Information and Communication Technology (ICT) can be the vehicle to achieve this goal. This study applies econometric techniques to shed some light on the impact of ICT ownership on the gender divide, and how ICT can play an effective role in empowering women in Egypt. Furthermore, the effect of ICT on women's lives in relation to other relevant factors such as education, income and geographic location is also investigated. Finally, recommendations are provided to the policy maker to enhance gender equality in Egypt through increasing the role of ICT in empowering women. The contribution of this paper is the introduction of an ICT ownership index from the sample data ELMPS06, as well as the introduction of a women's empowerment index. Results reveal that the ICT ownership index is largely influenced by education and gender, while the ICT ownership index has a significant impact on women's empowerment in Egypt. However in the obtained results, controlling for other individual characteristics like women's occupation and economic activity, the ICT ownership index becomes statistically insignificant.

Keywords: Egypt, gender inequality, ICT, ICT ownership, women's empowerment

JEL Classifications: J16, L86

INTRODUCTION

Information and Communication Technology (ICT) plays a critical role in today's society. In Africa and specifically

Egypt, the subject of this study, access to the Internet and other forms of ICT, like the mobile phone, PC and television, varies from men to women users, and between urban and rural communities. This has been attributed to the existing gender inequality between men and women, such that the implementation of ICT in society exerts,

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and sometimes exacerbates, the same divide in ICT usage patterns between men and women.

The Egyptian government is giving great attention to transforming Egyptian society into a knowledge-based society. This includes the uptake of high-speed internet access and e-applications. As a result, ICT initiatives have been launched, including the 'PC for every home' initiative, the free internet initiative and e-strategies. However, the inequality in access, generally called 'the digital divide', still exists along the lines of gender inequality or the gender divide. This is considered an unexpected outcome of technological change, since it was assumed that ICT would empower women and enhance their role in today's economy (World Bank 2004, United Nations 2005).

Women's empowerment (Roushdy, 2009) refers to the economic empowerment of women, as women's empowerment is a proxy for five dimensions: women's share in household decision-making, access to cash, mobility and exposure to violence, and gender role. The women's empowerment index is constructed based on data from the ELMPS06 survey using the simple sum method. This study also introduces the ICT ownership index, which has been constructed using the Principal Component Analysis (PCA) technique and simple sum method.

It is worth mentioning that from the theoretical perspective, the diffusion of innovations theory by Everett Rogers also sheds some light on the adoption of ICT products. So, on the micro level, the

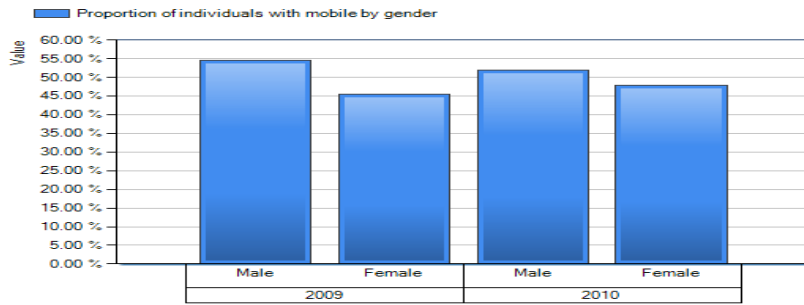
newness and unfamiliarity of an innovation lead to cost-benefit analysis with a large dose of uncertainty. Since people are on average risk averse, the uncertainty will result in delaying the decision to adopt or use this ICT product (innovation) till later (Orr, 2003).

A critical motivation of the present study is the documented gender gap in ICT access and use (Ministry of Information and Communication Technology, MCIT). The ICT digital divide trend is well documented in official statistics published by (MCIT) in Egypt. As depicted in Fig.1, the proportion of males with mobile phones is much higher compared to females with mobile phones in both 2009 and 2010. This may be due to the fact that the income of males for the two years is higher when compared to that of females.

The same ICT gender divide is documented in Fig.2, where it is revealed that users of public points of access, such as IT clubs, are mostly males. This can be explained by customs and traditions that can prevent females, especially in rural areas, from visiting public ICT clubs and using the Internet outdoors in a public place.

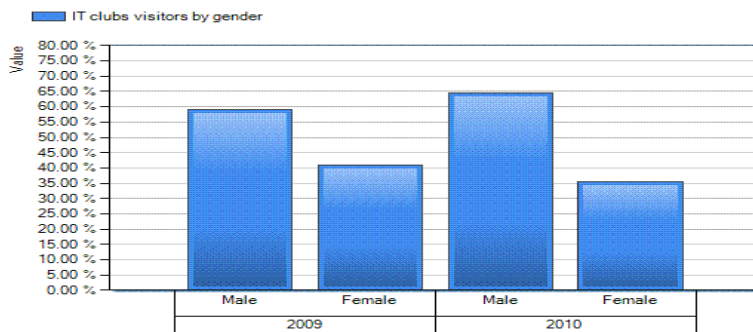
In Fig.3, the gender gap in the use of ICT, specifically the Internet, is quite clear over the period 2008-2012. Internet use is divided across gender lines, as males use the Internet significantly more than females (54 % males compared to 46 % females in 2012) as depicted in Fig.3,

As indicated in Fig.4, the statistics also reveal that males in urban areas are the heaviest Internet users, followed by male



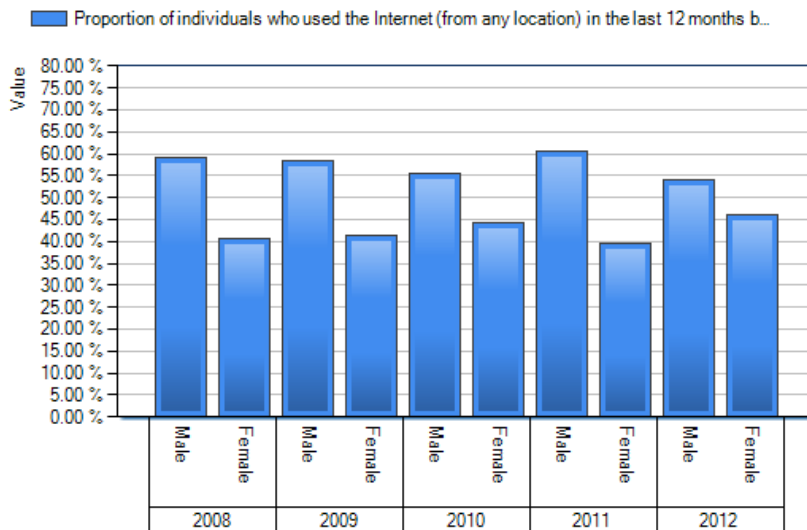
Source: Ministry of Communication and Information Technology, Egypt

Fig.1: Proportion of Individuals with Mobile Phones by Gender (2009, 2010)



Source: Ministry of Communication and Information Technology, Egypt

Fig.2: IT Club Visitors by Gender in 2009 and 2010



Source: Ministry of Communication and Information Technology (MCIT), Egypt

Fig.3: Proportion of Internet Users by Gender in 2008-2012

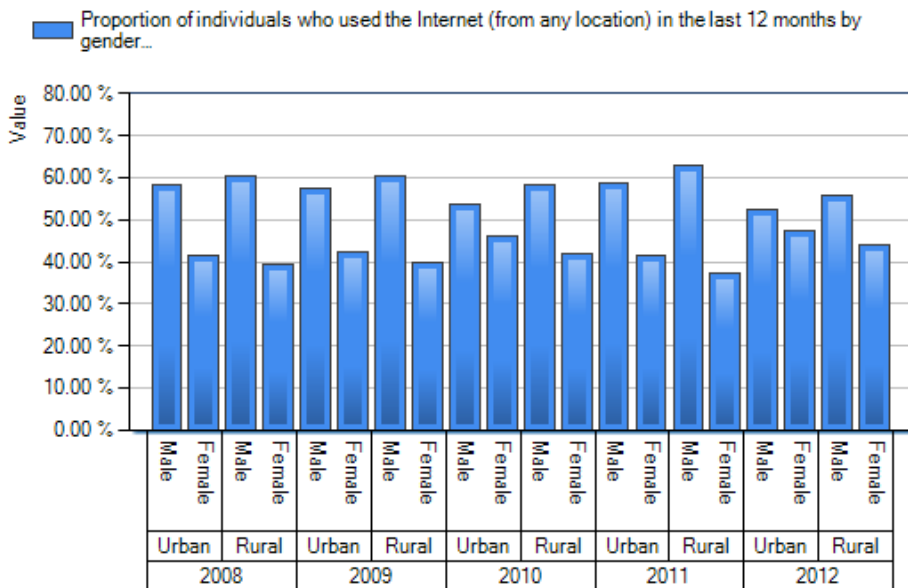
users in rural areas, while females in urban areas show a much higher rate of Internet use than females in rural areas in 2008. In 2012, the statistics show that males in rural areas were the heaviest users compared to males in urban areas.

This study aims at presenting policy makers with recommendations regarding the role of ICT in women’s empowerment in Egyptian society using econometric techniques. Eventually, these recommendations can also be extended to other African and Arab countries.

The problem of the gender digital divide presents the inequality of access and use of ICT between males and females. This paper investigates the hypothesis that gender neutral ICT policies may have exacerbated the digital gender divide in Egypt. In this

paper, I will focus on investigating the determinants of ICT access and use for females in Egypt, and the role that ICT actually plays in empowering women in Egypt. Thus, women’s empowerment in the context of my paper entails empowering women through ICT ownership and access to overcome challenges and to increase their economic participation in society.

This paper is divided into four main sections. The first section highlights the main themes in the literature. This is followed by the methodology and the empirical study that is divided into data sources, data analysis, the empirical model and methodology. Finally, the conclusion and policy recommendations are presented based on the obtained results.



Source: Ministry of Communication and Information Technology (MCIT), Egypt

Fig.4: Proportion of Internet Users by Gender and Location in 2008-2012

LITERATURE REVIEW

There are limited studies about ICT and women's empowerment in Egypt and Arab countries in general. One of the few studies available is the study by Al Senaidi *et al.* (2009), which investigates the barriers in adopting information and communication technologies in higher education in Oman. Their conducted survey shows five effective problematic factors including the lack of equipment and lack of institutional support as well as lack of awareness of ICT benefits, lack of confidence and lack of time. Another study focusing on South Africa by Dlodlo (2009) examines the impact of socio-economic factors on girls and women's access to ICT education and training in rural South Africa, and provides recommendations for the improvement of girls and women's access to ICT education and training in rural South Africa. There are a number of studies that tackle this issue in developed countries. Imhof *et al.* (2007) present a sample of 48 university students (23 males and 25 females) who were chosen for a survey on computer access, recorded a user diary, and a technology self sufficiency questionnaire and a computer task in Holland. Their results show that the gender gap is closing with respect to computer access and self efficiency, and give suggestions for creating computer-based learning environment.

However, another study by Meelissen *et al.* (2008) reveals that in Western countries the participation of females in ICT professional careers is not only low, but is also still falling. In fact, most of the research

on gender and computing has been focusing on the influence of non-school related factors. Therefore, there is little empirical evidence that schools or teachers are able to influence girls' attitude towards ICT. However, multi-level analysis shows that most of the variance in computer attitude is explained by non-school related factors.

On the other hand, according to Kelan (2007), current changes in gender relations show that the presence of women in ICT work has increased. However, women, still form a minority in this sector. In this article, discourse analysis is used to illustrate the resources to which the workers have access and to explain the scarcity of women in ICT work. The paper shows that women in the UK still constitute a minority in the ICT sector compared to men. The different discursive strategies discussed include attributing the scarcity of women in ICT work to factors over which the employer has no control, such as socialisation, biology and women's disinterest in changing technology. Based on substantial gender and development literature, Gillard *et al.* (2007) emphasise the role of gender and demonstrate the centrality of gender in understanding the information systems of developing countries, considering the relationship between gender, ICT and globalisation. Moreover, the United Nations (2005) indicates that the gender divide is observed where women and girls enjoy less access to information technology than men and boys. This also provides historical background on increasing attention to gender equality and ICT, and confirms the

importance of addressing the gender divide. Reviewing the literature on the use of ICT, we observe that one of the main themes discussed in the literature on this topic is the determinants of ICT adoption and diffusion for women, and how it is different from other factors that affect other groups in a typical society. In addition, we observe the existence of numerous models that aim to explain the adoption of ICT by various groups, including women. There are some models used to explain this trend, namely, the “Task Achievement Model” (Sainz *et al.*, 2009), the “Technology Acceptance Model (TAM)” (Davis *et al.*, 1989), the “utility in the acceptance model” (Verdegem *et al.*, 2009) and the “heterogeneity models” (Rosenberg, 1972).

The lack of ‘computer attitudes’ plays a major role in women’s low participation in technology (Sainz *et al.*, 2009). Previous studies point to the consensus that the early teenage years are an important phase that reflects how young people perceive friends’ and neighbours’ views about them. This impacts their career choices quite strongly. Girls tend to select less technical subjects and specialties than boys during adolescence as girls tend to choose subjects within the Humanities and Social Science domains when preparing for their professional careers. In Egypt, for example, females with secondary or higher education were estimated at only 33.5 % in 2006. (Central Agency of Public Mobilization and Statistics, Census for Population and Houses, 2006).

There are other significant factors that influence computer attitudes and ICT adoption in general. For instance, the literature indicates that the nature of the occupation of the mother is an important factor in moderating gender differences concerning computer attitudes as it makes visible the contribution of women in the workforce. Mothers with no occupation outside the home will limit their children’s use of computers to a higher extent than those mothers who have an occupation outside the home (Rosenberg, 1972).

Moreover, the literature indicates that the geographical location and place of origin is also another factor that is important, as social relationships play an important role in rural environments. Thus, girls from rural areas value social skills more positively than teenagers from other areas. This could be a result of the salient influence of social skills in rural environments where proximity and close relations are more typical than in urban areas (Sainz *et al.*, 2006).

Furthermore, the literature indicates that social class, which is most probably related to income level, is another important factor affecting attitudes towards computers, as teens from lower social classes with low income levels tend to use computers less frequently than teens from intermediate and upper social classes with relatively higher income levels. These findings are in line with the ones observed by OECD (2005), where socioeconomic background was found to be a stronger predictor than gender of whether or not a student had access to a computer at home.

Verdegem *et al.* (2009) discuss several factors and determinants that explain differences in ICT adoption, including gender, age, education and family structure. The gender factor implies that men enjoy greater access to ICT and use ICT more than women. The age factor implies that increased age is associated with lower levels of access, limited modes of use and patterns of connecting. The education factor implies that lower levels of education correspond with divides related to access and use of ICT. Finally, the family structure factor implies that the presence of school-age children tends to increase contacts with ICT. Other variables that affect the use of ICT include race, urban / rural location and cultural participation.

Another study highlighted the importance of any e-inclusion policy to include Internet access for all as inequalities in ICT adoption and usage are not likely to diminish or disappear on their own (Verdegem *et al.*, 2009). Overcoming digital inequalities is now considered to be one of the key drivers for social and economic welfare in order to improve social participation and to increase competitiveness and productivity. Income status remains one of the most important factors explaining differences in ICT adoption and usage (Martin *et al.*, 2007). Even in highly industrialised societies, lower levels of income are consistently shown to be associated with ICT inequalities (Verdegem *et al.*, 2009, Rice *et al.*, 2003; Vahovar *et al.*, 2006).

Therefore we can conclude that there exists a knowledge gap in this area of research in Africa and especially in Egypt. Some of the relevant literature that pinpoints to the impact of ICT on women in other regions of the world has been highlighted; especially the studies that shed some light on the significant factors that impact ICT adoption in females. These determinants are the main focus of this study.

METHODOLOGY AND EMPIRICAL MODEL

Data Sources

A cross-sectional data set for men and women for the latest available data for the year 2006 has been obtained from "The Egypt labour market panel survey of 2006" (ELMPS 06). This data set is for public access and the survey was sponsored by the Population Council, Economic Research Forum and Central Agency of Public Mobilization and Statistics, Census for Population and Houses (Capmas). The two Egypt Labor Market Surveys (ELMS's 1998 and 2006) are nationally representative surveys. The ELMPS06 is a follow-up survey to the Egypt Labor Market Survey of 1998 (ELMS 98), which was carried out in November-December 1998 by Economic Research Forum (ERF) in cooperation with the CAPMAS. ELMS 98 was carried out on a nationally-representative sample of 4,816 households. The ELMPS 06 is the second round of what is intended to be a periodic longitudinal survey that tracks the labour market and demographic characteristics of

the households and individuals interviewed in 1998 as well as any new households that might have formed as a result of splits from the original households and provides a refresher sample of households to ensure that the data continue to be nationally-representative. The field work for ELMPS 06 was carried out from January to March 2006.

The final sample of 8,351 households is made up of 3,684 households from the original ELMS 98 survey, with 2,167 new households that emerged from these households as a result of splits and a refresher sample of 2,498 households. Of the 23,997 individuals interviewed in 1998, 17,357 (72 %) were successfully re-interviewed in 2006, forming a panel. The 2006 sample contains an additional number of 19,743 “new” individuals. Of these 2,663 individuals joined the original 1998 households, 4,880 joined the split households and 12,200 were part of the refresher sample of households. Data Sources include cross-sectional data sets for men and women for the year 2006 obtained from “The Egypt Labor Market Panel Survey of 2006” (ELMPS 06). Descriptive Statistics are found in Appendix 1.

The Empirical Model

In this study the following 2 models will be estimated using Ordinary Least Square:

$$\begin{aligned}
 &\text{ICT own index} \\
 &= \beta_0 + \beta_1 \text{edu} + \beta_2 \text{gender} + \beta_3 \text{age} \\
 &\quad - \beta_4 \text{age}^2 + \beta_5 \text{real monthly wage} \\
 &\quad + \beta_6 \text{region} + \beta_7 \text{employment status} \\
 &\quad + e \tag{1}
 \end{aligned}$$

Women Empower index

$$\begin{aligned}
 &= \beta_0 + \beta_1 \text{ICT own index} + \beta_2 \text{age} \\
 &\quad - \beta_3 \text{age}^2 + \beta_4 \text{real monthly wage} \\
 &\quad + \beta_5 \text{Empl status} + \beta_7 \text{edu} + \beta_8 \text{region} \\
 &\quad + e \tag{2}
 \end{aligned}$$

The ICT Ownership Index is formed and used as the dependent variable. It consists of the following questions covered in the ELMPS 06 survey:

- Do you own a telephone?
- Does your family own a colored TV?
- Does your family own a personal computer?
- Does your family own a mobile phone? and
- Does your family own a satellite dish?

The values of the ICT Ownership Index scale range from 1 to 100, where the minimum value of the index indicates that the individual does not own ICT products or goods, and the maximum value means that this person owns all the ICT products. So, the more ICT products one owns, the higher the value of the index will be (summary statistics are presented in Table 1, which is given in the Appendix). The ICT Ownership Index was created using 2 methods: The Principle Component Analysis technique and the Simple Sum technique. Both of them will be explained in the methodology below.

Methodology of Construction of the ICT Ownership Index and the Women’s Empowerment Index

In the Simple Sum methodology, all the indicators that constitute the index, namely

TABLE 1
Coefficients of the Principal Component Analysis

Variables	Coefficients		
	Urban	Rural	All Egypt
Fixed Phone	0.4074	0.4225	0.4138
Computer	0.4685	0.4045	0.4504
Mobile	0.515	0.4928	0.5084
Dish	0.4634	0.4744	0.4606
Colour T.V.	0.3669	0.4358	0.3941

ownership of a fixed phone, mobile phone, personal computer, satellite dish and coloured TV, are aggregated with equal weights. The Principal Component Analysis (PCA) technique can be used effectively to obtain the most appropriate weights for the indicators of the proposed indices and sub-indices, such that the extracted first principal components would explain the largest percentage of total variance captured by this component. Principal component analysis (PCA) is a multivariate technique that analyses several inter-correlated quantitative dependent variables. Its goal is to extract the important information to represent it as a set of new orthogonal variables called principal components (Abdi *et al.*, 2010). Thus the objectives of the PCA are to reduce dimensionality of the data and to construct a new measurable index.

The Women's Empowerment Index is also constructed with the Simple Sum method, focusing on the following five dimensions: 1) women's share in household decision-making; 2) access to cash; 3) mobility; 4) exposure to violence; and 5) gender role, all of which are covered in ELMPS06 Survey. The minimum value of the index is 0 and the maximum value is 38.

Analysis of both regression models using the Simple Sum methodology

Both regressions are multiple regression models which really estimate a quadratic function as it includes age in a quadratic form, using the ordinary least square method of estimation.

The first regression model has been formulated as follows

ICT own index

$$\begin{aligned}
 &= \beta_0 + \beta_1 \text{edu} + \beta_2 \text{gender} + \beta_3 \text{age} \\
 &\quad - \beta_4 \text{age}^2 + \beta_5 \text{real monthly wage} \\
 &\quad + \beta_6 \text{region} + \beta_7 \text{employment status} \\
 &\quad + e \quad (1)
 \end{aligned}$$

The ICT Own Index is the ICT Ownership Index and it reflects the ownership of ICT assets. There are two specifications for the first model: the short model and the expanded one. In the short model, the explanatory variables include education, gender (dummy variable), age, age squared (in order to capture the nonlinearity of the age), real monthly wage, region (dummy variable) and employment status (dummy variable). An expanded model was also estimated, which includes in addition to the explanatory variables controlled for earlier,

more variables that reveal the characteristics of the individual, such as occupation, sector (public / private) and economic activity. **Using the Simple Sum** methodology, we estimated the following equations, both for the short and the expanded models. The results are provided below:

In the short model, the dependent variable is the ICT Ownership Index and the explanatory variables are education, gender, age and age squared, employment status categories (wage worker, employer, self employed, unpaid family worker), region categories (Greater Cairo, Alexandria, Suez; and Urban Lower, Urban Upper, Rural Lower, Rural Upper) and real monthly wage as a proxy for income, all of which are significant. All levels of education are statistically significant and positively affect ownership of ICT assets.

Age had the expected sign as well as the economic impact on ICT ownership, which is non-linear. In order to capture the non-linearity of age as an independent variable on ICT ownership, we controlled for age as well as age squared, which both resulted in significant coefficients where the effect of age on the ICT Ownership Index diminishes as age increases. The coefficient of age squared had a negative sign, indicating this phenomenon.

In the short model, the employment status dummy variable indicates that compared to the base group of wage workers, all the employment status groups are statistically significant. Using the standardised beta coefficient, the unpaid family worker such as the housewife, is the

one who impacts the ICT Ownership Index or owns more ICT assets compared to the wage worker. This can be justified if the housewife uses a mobile phone and home computer etc. to empower herself.

Furthermore, we added new explanatory variables in the expanded model. All the added variables are for economic activity (dummy variables). All the economic activities are statistically significant and with expected positive sign. Thus, doing an economic activity compared to agriculture has a positive impact on ICT ownership. The private sector has a negative impact on ICT ownership compared to the government or public sector. This is explained by the discrimination that women face in the private sector as it provides fewer job opportunities for female employees compared to the government sector.

Women's Empowerment Index

$$= \beta_0 + \beta_1 \text{ ICT index} + \beta_2 \text{ age} + \beta_3 \text{ age}^2 + \beta_4 \text{ real monthly wage} + \beta_5 \text{ Empl status} + \beta_7 \text{ edu} + \beta_8 \text{ region} + e.*$$

*where e is the error term or the disturbance term and it follows a standard normal distribution

In the second regression, the Women's Empowerment Index, as described earlier, was regressed on the following explanatory variables: ICT Ownership Index, age, real monthly wage, employment status (dummy variable), education (dummy variable) and region (dummy variable). In the expanded model we added the women's occupation (dummy variable), economic activity

(dummy variable) and sector (public / private) (dummy variable).

The findings indicate that the ICT Ownership Index positively affects the Women's Empowerment Index and is statistically significant. However, it was not expected *a priori* that the sign of the index be positive, as it indicates that there would be a closing of the gender gap when it comes to owning the ICT essential products, such as fixed telephone lines, cell phones, computers and satellite dishes. However, in the expanded model, where we control for other female characteristics, the ICT ownership index is statistically insignificant. This is due to the digital divide that exists along the gender lines, which is evident from the data obtained from the Ministry of Communication and Information Technology (MCIT) in Egypt. In addition there are specific barriers to women's access (Huyer *et al.*, 2003) and use of ICT. These include high levels of illiteracy and lack of education, which is needed to be able to use ICT products like the Internet. Moreover, women have less time to spend online as they have a triple role in domestic and community management and productive responsibilities. Women usually have fewer financial resources compared to men to cover the costs of access and equipment. In terms of geographical location, in developing countries women tend to live in rural areas more than men. Thus, they have access to only low quality infrastructure, and travel to ICT centres is much more costly and time consuming; these are serious disadvantages. Real monthly wage as a proxy for income

is statistically significant and has a positive impact on the Women's Empowerment Index. The model overall is statistically significant as the p-value for the F-statistics is zero. This means that the variables as a group explain the model. R-squared is low; however, this is understandable and accepted in social empirical studies.

Occupation has a negative impact on women's empowerment compared to elementary occupation. This is unexpected, since having an occupation should actually have a positive significant impact on owning an ICT product. This sheds light on the role of gender gap at work as it reduces the empowerment of women. All occupations have a negative impact on women's empowerment compared to elementary occupations, and are statistically significant except for professionals. On the other hand, Professionals consist of a small percentage of the sample and the percentage occupied by women is lower in this category. This explains why they are statistically not significant.

Comparing the short and the expanded model, we find that R-squared increased when we added new variables, although not by very much. This indicates that these variables are not really important. However, these added variables, namely, occupation, economic activity and sector, eliminate the significance of ICT ownership. For the short model, on the other hand, the ICT ownership model has a positive effect, and is statistically significant on women's empowerment. Using the second method, which is the Principle Component Analysis

(PCA), we find the results of the short model consistent with the first method. So the PCA method serves as a robustness check for the estimated model. Both the ICT ownership regression and the women's empowerment regression show similar results to the first model, which uses the method of simple sum.

CONCLUSION AND POLICY RECOMMENDATIONS

The results obtained from the empirical study reveal that the ICT Ownership Index is largely influenced by education and gender, while the ICT Ownership Index has a significant impact on women's empowerment in Egypt. However, controlling for other individual characteristics such as women's occupation and economic activity, the ICT Ownership Index becomes statistically insignificant with no impact on women's empowerment. The contribution of this paper is the introduction of an ICT ownership index from the sample data ELMPS06 as well as the introduction of a women's empowerment index. Another important contribution of this study is the innovative use of the ELMPS 06 dataset to measure the impact of ICT on women's empowerment in Egypt.

Thus, according to the diffusion of innovations theory, the ICT innovations highlighted in this paper have to a certain extent reached the tipping point as far as women's empowerment in Egypt is concerned. However, when we control for other variables such as women's occupations, the results change and it seems that women are in the early-adopters phase.

Accordingly, there is ample room for ICT to mainstream gender equality in Egypt. According to the diffusion in innovations theory, this can be achieved by the mass media and persuasion by opinion leaders in Egypt. Promoting ICT training, encouraging ICT-related employment and increasing ICT access and usage for women are all means to increase ICT immersion. All these policies that are related to ICT would further empower women and reduce the gender gap that exists in Egypt as well as in many other countries. Empowering women to become participants in a knowledge-based society is a prerequisite to increasing development in Egypt and elsewhere. Tele-working, call centres, the software industry and offshore services all call for more IT education and training in all levels of education, which would enhance girls, and later women, to become active contributors to the Egyptian economy's growth and development. This study has proved that, to a large extent, ICT is empowering women in Egypt; this is eclipsed only when we add the impact of other variables such as women's occupation and economic activity.

In Egypt, at the macro-level, supposedly 'gender-neutral' ICT policies regarding education, training and price structure may have an unintended negative impact based on gender roles and access to ICT resources. In urban areas, there is a high percentage of ICT infrastructure ownership like personal computers and mobile phones for females. However, female usage of computers is still less than that of males and mobile-phone ownership is also less as documented by

the Egyptian Ministry of Information and Communication Technology (Thas *et al.*, 2007).

There are, nevertheless, attempts to benefit from ICT and to use it as a means to empower women in Egypt. In rural areas, where females face major obstacles to education and usage of ICT, there are new ways that NGOs working under the umbrella of the Egyptian government are targeting the problem of the digital divide and using ICT to empower women. The initiative of ICT4IE7, "using ICT, namely Internet and multimedia, for illiteracy eradication," has had a great impact on rural communities in Egypt. Instead of going to schools, young girls take home-lessons with the help of computers and CD-ROM multimedia. It also assists mothers in raising their children and helping them in attaining their education.

Working women were considered the main beneficiaries of ICT in clerical jobs. Thus women were introduced to computers in their offices to perform simple tasks. One of the occupations that women tend to have, and in which ICT is being sought as a vehicle to assist in its development, is in the production of handmade goods. The original idea was that ICT could actually open new markets and increase profits for Egyptian craftswomen and artisans. However, research attributed the failure of this idea to failure in other aspects of the production of the final goods such as in design and quality, and not the usage of ICT in marketing. Nevertheless, the internet was considered as a viable resource for some of the craftswomen, by continuing

their education and increasing their skills to include computer and internet skills. This improved their income level, and qualified them to advanced clerical jobs or to supervise other craftswomen. These craftswomen, however, would typically stop their production of crafts. So, we refer to this process as "making up the ladder to additional education" (Hassanin, 2009).

Comparing the above-mentioned attitudes towards ICT and the Internet with those of advanced countries such as the USA, we find that by 2001 US women and men were equally likely to be online (Losh, 2003). In terms of age group, from late teens to the late 40s, women are more likely than men to use the Internet; men acquire an increasing edge after age 55 (DiMaggio, 2002). This study made a clear distinction between access to and use of the Internet. It found that access is much higher than usage rate, meaning that families or individuals who have access to the internet do not use it often. This is in contrast to findings from developing countries, where access of subscribers to Internet providers is much less than the actual number of users of the Internet. This reflects the fact that access for households in developing countries, such as Egypt, is still relatively expensive, while IT cafes and other public points of access are the means to increase broadband penetration in these countries (Badran *et al.*, 2007).

Recommendations for policy makers, based on the results of the present empirical study, emphasise the importance of education, household type and other factors that affect women's empowerment

through ICT. Women's access to ICT can be encouraged through the following ways:

1. Public Access Strategies
2. Improving girl's and women's access to education
3. Generating demand for ICT education
4. Making IT education and training easily accessible for women and girls
5. Ensuring that women get the right skills, and
6. Providing micro-financing to women

Another aspect of the ability of ICT to empower women has been recently observed in the usage of social networks like Facebook to empower youth in general, including, of course, young females and teenagers. The latter used social networks as a platform to express their views and arrange strategies and plans to initiate discussions on political reform in Egypt. Actually, Facebook was the medium by which the recent uprising in (2011) in Egypt was organised. This sheds light on another aspect of the empowering of youth and females, that is, that it leads to their becoming politically active and politically aware, and, indeed, led to their participation in the recent political reform movement in Egypt. This paper focuses on economic empowerment of women, as women's empowerment is a proxy for five dimensions:

1. The share of women in decision-making in the household
2. Access to cash
3. Mobility

4. Less exposure to violence, and
5. Gender roles

A new dimension of women's empowerment could be added to future studies, where these studies could investigate the extent that ICT in Egypt empowered women politically i.e. the political empowerment of women, and which played a major role in the recent uprising in Egypt as well as in many other Arab countries.

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APPENDIXTABLE 2
Descriptive Statistics

Variable	Numbers of Obs.	Mean	Std. Dev.	Min	Max
Power Index	12933	20.49	5.47	0	38
ICTurb	19658	0.00	1.46	-2.44	2.94
ICTrur	17482	0.00	1.38	-1.36	6.20
ICT Ownership Index	37140	0.00	1.42	-2.44	6.20
ICT Scaled	37140	28.27	16.48	0	100
ICT_Simple~m	37140	1.88	1.36	0	5
Education 2	30977	0.16	0.37	0	1
Education 3	30977	0.12	0.32	0	1
Education 4	30977	0.08	0.28	0	1
Education 5	30977	0.04	0.20	0	1
Education 6	30977	0.22	0.41	0	1
Education 7	30977	0.03	0.18	0	1
Education 8	30977	0.10	0.30	0	1
Age	37140	26.64	19.42	0	95
Age 2	37140	10.87	13.64	0	90.25
Gender 2	37140	0.50	0.50	0	1
Emp_Status 2	14356	0.12	0.32	0	1
Emp_Status 3	14356	0.08	0.28	0	1
Emp_Status 4	14356	0.27	0.44	0	1
Reg 1	37140	0.15	0.35	0	1
Reg 2	37140	0.10	0.30	0	1
Reg 3	37140	0.13	0.33	0	1
Reg 4	37140	0.15	0.36	0	1
Reg 5	37140	0.25	0.43	0	1
Occupation 1	14353	0.08	0.26	0	1
Occupation 2	14353	0.11	0.32	0	1
Occupation 3	14353	0.08	0.26	0	1
Occupation 4	14353	0.03	0.18	0	1
Occupation 5	14353	0.12	0.32	0	1
Occupation 6	14353	0.35	0.48	0	1
Occupation 7	14353	0.15	0.35	0	1
Occupation 8	14353	0.06	0.23	0	1
Eco_Activi~2	14347	0.00	0.05	0	1
Eco_Activi~3	14347	0.12	0.32	0	1
Eco_Activi~4	14347	0.01	0.09	0	1
Eco_Activi~5	14347	0.06	0.25	0	1
Eco_Activi~6	14347	0.13	0.34	0	1
Eco_Activi~7	14347	0.06	0.24	0	1

TABLE 2 (continue)

Variable	Numbers of Obs.	Mean	Std. Dev.	Min	Max
Eco_Activi~8	14347	0.01	0.09	0	1
Eco_Activi~9	14347	0.25	0.43	0	1
Sector 2	14360	0.75	0.43	0	1
mnthwgAllJob	37080	138.39	840.69	0	66240

TABLE 3
Regression Results of Simple Sum Method

VARIABLES	(1)	(2)	(3)	(4)
	Empowerment Index	ICT Ownership index Simple Sum	Empowerment Index	ICT Ownership index Simple Sum
ICT_SimpleSum	0.0726 (0.0182)		0.128** (0.0320)	
Educ2 == Literate without any diploma	1.062*** (0.0370)	0.347*** (0.0675)	1.021*** (0.0355)	0.394*** (0.0766)
Educ2 == Elementary school	0.593* (0.0251)	0.393*** (0.0870)	0.602* (0.0254)	0.446*** (0.0989)
Educ2 == Middle school	0.466 (0.0169)	0.577*** (0.0949)	0.728* (0.0949)	0.666*** (0.110)
Educ2 == General high school	0.641 (0.0111)	1.027*** (0.0723)	0.953 (0.0165)	1.203*** (0.0847)
Educ2 == Vocational high school	1.117*** (0.0861)	0.776*** (0.255)	1.534*** (0.118)	0.952*** (0.313)
Educ2 == Post-secondary institute	0.908** (0.0313)	1.026*** (0.152)	1.961*** (0.0675)	1.301*** (0.192)
Educ2 == University & above	0.461 (0.0286)	1.488*** (0.389)	1.888*** (0.117)	1.811*** (0.474)
Age	0.682*** (1.666)	0.0163*** (0.164)	0.737*** (1.801)	0.0268*** (0.270)
Age 2	-0.842*** (-1.658)	-0.00338 (-0.0273)	-0.892*** (-1.755)	-0.0120*** (-0.0967)
Sex == Female	0 (0)	0.108*** (0.0377)		
Crempstp == Employer	2.016*** (0.0531)	0.350*** (0.0831)	0.119 (0.00314)	0.235*** (0.0558)
Crempstp == Self Employed	2.508*** (0.115)	0.0738* (0.0150)	0.672** (0.0309)	0.0469 (0.00956)
Crempstp == Unpaid Family Worker	1.250*** (0.111)	0.461*** (0.150)	-0.963*** (-0.0857)	0.278*** (0.0904)
Region == Gr. Cairo	1.581*** (0.0816)	1.001*** (0.242)	1.077*** (0.0556)	1.108*** (0.268)
Region == Alx, Sz C.	1.593*** (0.0684)	0.885*** (0.181)	1.348*** (0.0579)	1.003*** (0.205)
Region == Urb. Lwr.	2.012*** (0.113)	0.458*** (0.109)	1.959*** (0.111)	0.563*** (0.134)

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Region == Urb. Upp.	1.120*** (0.0692)	0.475*** (0.123)	1.193*** (0.0737)	0.555*** (0.143)
Region == Rur. Lwr.	1.785*** (0.152)	0.148*** (0.0491)	1.687*** (0.143)	0.168*** (0.0557)
Crocpl == Leg.,Senior offic.& manag.	-1.860* (-0.0675)	0.710*** (0.138)		
Crocpl == professionals	-1.231 (-0.0719)	0.568*** (0.133)		
Crocpl == Technic.& Assoc. Prof.	-2.201** (-0.108)	0.614*** (0.119)		
Crocpl == Clerks	-2.496** (-0.0871)	0.608*** (0.0808)		
Crocpl == Serv.& shop/market sal. wrkrs	-2.378** (-0.104)	0.244*** (0.0575)		
Crocpl == Skill. agr. & fish. wrkrs	-3.493** (-0.310)	0.186* (0.0654)		
Crocpl == Craft & related trad. wrkrs	-2.844** (-0.106)	0.324*** (0.0843)		
Crocpl == Plant & machine operat. & assemb.	-3.012** (-0.0657)	0.240*** (0.0409)		
crecac1d_86cd == Mining	0 (0)	0.510** (0.0182)		
crecac1d_86cd == Manufacturing	-0.727 (-0.0331)	0.205** (0.0487)		
crecac1d_86cd == Elect	0.353 (0.00341)	0.409*** (0.0282)		
crecac1d_86cd == Const	-2.899 (-0.0237)	0.107 (0.0192)		
crecac1d_86cd == Trade	-0.592 (-0.0273)	0.217** (0.0534)		
crecac1d_86cd == Trans	-0.638 (-0.0113)	0.333*** (0.0576)		
crecac1d_86cd == Finance	0.891 (0.0144)	0.616*** (0.0424)		
crecac1d_86cd == Serv	0.287 (0.0222)	0.162* (0.0515)		
crsector_PubPr == Private	-1.813*** (-0.138)	-0.0870** (-0.0277)		
Monthly Wage (Prim.& Second. Jobs)	0.000169** (0.0289)	3.99e-05*** (0.0388)	0.000207*** (0.0355)	4.62e-05*** (0.0448)
Observations	4886	14303	4888	14312
R-squared	0.247	0.383	0.229	0.361
Normalised beta coefficients in parentheses *** p<0.01, ** p<0.05, * p<0.1				



Social Capital and Sustainable Development in the Framework of New Institutional Economics

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ABSTRACT

Social capital is the fourth pillar of sustainable development. Whereas natural, physical and human capital constitute the “wealth of the nations”, it is social capital that contributes to harmonious growth. Using the framework of New Institutional Economics, both social capital and sustainable development are explored by their casual impact on informal institutions. Values, habits and beliefs which define social cohesion and impact future generations are the source of continuous development and therefore implicate the egalitarian redistribution of wealth. By taking into consideration the growing number of research in the aforementioned fields of study, this article hopes to introduce a potential research programme where social capital is the main source of sustainable development. The article also seeks to point out the importance of preserving other forms of capital.

Keywords: Human capital, social capital, sustainable development, trust, New Institutional Economics

INTRODUCTION

Social capital is the fourth pillar of sustainable development. Whereas natural, physical and human capital constitute the “wealth of the nations”, it is social capital that contributes to harmonious growth. By accepting the idea of sustainable

development as a process where present needs are satisfied without limiting resources for future generations and their capabilities to maintain a similar of higher level of welfare, I consider social capital a binding link to sustaining intergenerational balance.

While this is a conceptual paper, the main objective is to introduce a potential research programme bringing social capital into the concept of sustainable development. Based on the synthesis of both concepts I strive to encompass the most effective and explanatory common ground.

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I argue that sustainability is a process of accepting an egalitarian approach to development. Sustainability as an **opportunity** to share profits with future generations is path-dependent. It is predictable what outcomes of our decisions will have direct impact on the welfare of others. By **limiting** our individual welfare function and seeking trade-offs between needs and desires, we strive for an acceptable form of collective utility function (Moulin, 2003). We constitute our perception and expectations based on social norms and shared values. We reduce transaction costs by enhancing mutual understanding and behave accordingly within the institutional framework. We do seek to function in a structured and hierarchical environment, where our beliefs are accepted and shared. Without coherence, the idea of sustainable development lacks a binding element. While social capital is not a value given in advance to any society, it is the result of interaction among individuals (O'Boyle, 2011). Either positive or negative, it creates a constant tension and drives people to act in certain ways to gain expected results. By considering social capital as a primary component of sustainable development, I claim that by understanding the role of social structure, its cohesion and impact on macroeconomic outcomes, we will be able to accept the need to sustain an egalitarian and morally fair attitude towards future generations.

The rest of the paper is organised as follows. Section 2 briefly reviews some of the related literature on the concept of social

capital. Section 3 describes the notion of sustainable development and its importance in creating long-term development policies. Section 4 describes the idea of social capital. In this section I seek to explore the role of formal and informal institutions in creating and sustaining social capital. Section 5 summarises and indicates a common ground of two concepts and suggests social capital as a complementary aspect to the concept of sustainable development.

PREVIOUS THEORETICAL AND EMPIRICAL CONTRIBUTIONS REGARDING SOCIAL CAPITAL AND SUSTAINABLE DEVELOPMENT

The notion of social capital is a relatively current idea, whereas its importance on common interests was already perceived in Aristotle's time (Bhuijan & Evers, 2005). Common welfare and mutual purpose are still the leading force to distinguish social coherence and create chances for coordinated actions. As the fundamental idea of the concept relies in the assessment that "trust, norms and networks can improve the efficiency of society by facilitating coordinated actions" (Putnam *et al.*, 1993), we can assume that both coordinated individual needs lead to the creation of organisations and codes of conduct lead to morally acceptable economic outcomes.

Employed by Marshall and Hicks, the concept of social capital was used to distinguish the forms of capital into formally separate components of the organisation. While the most prominent element of this division was the unquantifiable sum of trust, norms and "voluntary association", the

division between temporary and permanent stocks of physical capital (Woolcock, 1998) initiated a broader interest among scientists. As stated by Hanifan at the very beginning of the 20th century, social capital can be described in terms of “goodwill, fellowship, mutual sympathy and social intercourse among a group of individuals and families who make up a social unity, the rural community ... accumulation of social capital, which may immediately satisfy one’s social needs and which may bear a social potentiality sufficient to the substantial improvement of living conditions in the whole society” (Hanifan, 1916). Although the importance of associations and networks in increasing the economic outcomes of a company was recognised by political economists such as Smith and Ricardo, the concept of social capital was deployed by 19th century economists.

The marginalist theory of production and distribution formulated by Clark, the marginal utility theory presented by Sidgwick and Marshall (differently) and the labour theory of value introduced by Marx stand in opposition to the classical view. Associations help to increase efficiency, impel cooperation and seek to define common objectives. However, the review of the assumptions of what social capital is, underlines the importance of community, individuals and informal ways of forming networks, and it is the social point of view. Since norms were perceived as static and rational, their role in the economy was limited. At the micro level, social capital became the subject of studies within the

“new sociology of economic development” (Guillén, 2002), whereas at the macro level it was analysed within comparative institutional studies (Helmke & Levitsky, 2003). The synthesis of both research programmes was proposed by Karl Polanyi, who suggested the idea of embeddedness and was further introduced to sociologists by Granovette, who claimed that “economic behaviour ought to be analysed as embedded in networks of social relations” (Granovetter, 1985). Although Granovette perceived social relations as networks, he argued against the new institutional economists and the underlying idea that the very existence of firms is determined by formal and informal elements (in order to explain the Coase theorem), and the notion that institutions are also “embedded in networks that reflect the perceptions, values, and interests of individuals” (Fine & Lapavistas, 2004).

By the very beginning of the 1980s the concept of social capital as suggested by Bourdieu was taken over by Coleman and the Chicago School. Social capital was perceived as the personal capital enabling individuals to act rationally, therefore initiating social networks, where members [...] trust one another and co-operate in the formation of new groups and associations” (Coleman, 1988). Coordinated actions, connections and networks were again a generous field of research. While the result of social networks and collective repeated actions led to the increase of trust, the existence of norms and cooperation benefitted in notion of reciprocity. Explaining social capital in terms of “trust, norms and

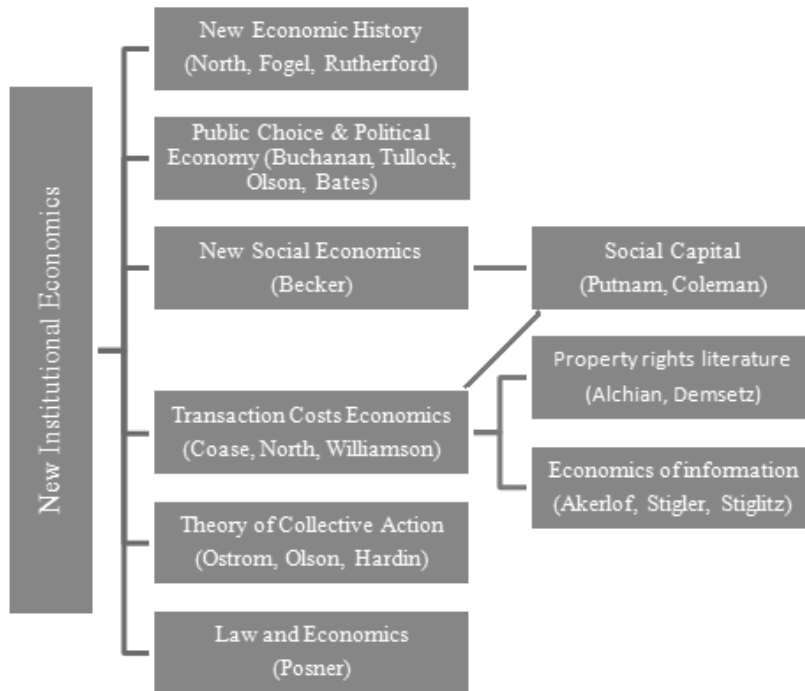
networks that can improve the efficiency of society by facilitating coordinated actions” indicates the role of institutions (Putnam *et al.*, 1993). I claim that within the New Institutional Economics both formal and informal institutions can justifiably define the notion of social capital and analyse it as a binding link connecting social actions and behaviour with the idea of sustainable development.

Initiated by Bourdieu, expanded by Coleman and popularised by Putnam, social capital became a widely used concept in explaining different outcomes. Adopted by the World Bank as “[...] institutions, relationships, and norms that shape the

quality and quantity of a society’s social interaction”, it was promoted as a missing link in the development theories (World Bank, 2003).

SUSTAINABLE DEVELOPMENT AND PRAGMATISM OF THE CONCEPT

The concept of sustainable development emerged in 1987. However, its theoretical foundations had been laid since 1972 and the Conference on the Human Environment organised by the United Nations in Stockholm. While the United Nations released the Brundtland Report in 1987, the most encompassing notion was to “meet the needs of the present without compromising



Source: Kherallah i Kirsten, 2001, The New Institutional Economics: Applications for Agricultural Policy Research in Developing Countries, International Food Policy Research Institute, MSDD Discussion Paper, No. 31, p. 14

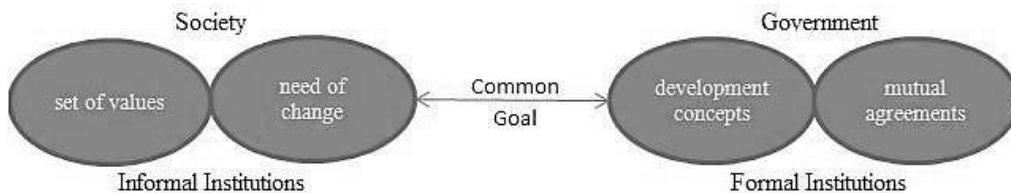
Fig.1: Branches of the New Institutional Economics

the ability of future generations to meet their own needs” (Drexhage & Murphy, 2010). The other two pillars relate to the concept of “needs” and the idea of limitations. Where national attempts to develop complementary strategies to a better quality of life without damage to the environment were forced through national programmes, it was up to the Conference on Environment and Development in Rio de Janeiro in 1992 to fully embody the needs to sustain economic growth and maintain the natural environment at its current level. Despite the on-going debates on how to “maintain or increase all productive capital stocks [...] the maintenance of stocks of human and social capital is equally important” (Goodwin, 2003).

Considering the scope of sustainable development, one has to underline its complexity. Hence, the concept includes the social, cultural, environmental and economic fear about the current models of economic development. It criticises the mainstream economics due to promotion of microeconomic rationality and the understanding of social welfare (Fiedor,

2007). It is, therefore, appropriate to claim that ideas of sustainable development began to shape themselves while realising that growth (in economic terms) based on exploitation of non-renewable energy sources associated with growing and more cumbersome processes of environmental pollution, which even in the short term results in climate change, should not be continued, unless there are real benefits for people and minimal intergenerational loss.

Sustainable development is closely related to the following ideas of human dignity, identity, equality (and its reduction) as well as social justice (in terms of an access to socially desirable basic goods), beyond freedom especially within the meaning of freedom in “production” of wealth and the exploitation of the natural environment. Nowadays, social conflict between wealth and citizenship, between expectations of continuous innovation, ongoing economic development and social justice, the spokesmen of sustainable development seem to take place for social justice (Sadowski, 2007). However, at an explanatory stage one has to consider



Source: Personal work based on Fiedor, B. (2007). *Nowa Ekonomia Instytucjonalna a zrównoważony rozwój (New Institutional Economics and the Sustainable Development)*, [in:] Poskrobko, B. (Eds.). *Obszary badań nad trwałym i zrównoważonym rozwojem (Areas of Research on Sustainable and Balanced Development)*, Fundacja Ekonomistów Środowiska i Zasobów Naturalnych, Ekonomia i Środowisko, Białystok, Poland, p. 162

Fig.2: Institutional Order

whether the target model of sustainable development should be formed to create a democratic, multi-cultural (and egalitarian), fair or fully balanced society where everyone may find an adequate and right place to live and work.

According to the New Institutional Economics, initial and foremost priority should be given to the differentiation between formal and informal institutions. However, the author is not privileged to discuss the theoretical framework and history of that division. Nevertheless, it should be pointed out that when it comes to sustainable development, informal institutions play the major role. In general, informal institutions consist of: culture, tradition, norms and, as a result, to some extent, attitude. Therefore, any concept of sustainable development depends on a microeconomic set of (economic and non-economic) attitudes. So a long-term development is a subject of the market mechanism and the regulatory intermediation of public opinion. It has been noticed that any structural change is upon the change of both values -- understanding, dedication and trust in society (Fukuyama, 1995). Then there are the formal institutions which govern the process.

The aforementioned are the corresponding sets of rules minimising transaction costs and directing the desirable change which imposes a new institutional order different from postulates proclaimed by German Ordoliberalism. Although one can name theories and schools of thought which at some point connect development with the category of institutions, the author

feels that the most influential components requiring a discussion are those components linked to the following issues:

- Indirect use of environment as a source of ethical needs (stability of informal institutions as culture, religion)
- Intergenerational equity (in terms of transaction costs)
- Legal and administrative pressure on social groups to bound the maiming attitude over the conservation of natural resources (formal institutions)

I perceive that the above components complement each other. Any society should take into account diverse possibilities of substitutions between the forms of capital they use (Borys, 2005). This is done in order to maintain (long-term) sustainable development without lowering either the standard and quality of living or the development rate.

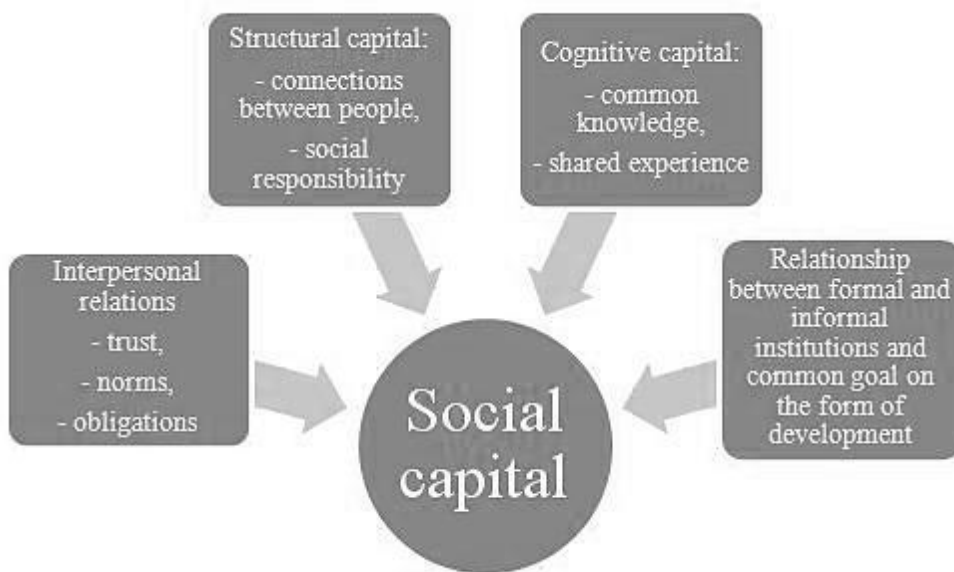
SOCIAL CAPITAL AND ITS COMMON UNDERSTANDING

In "The Theory of Moral Sentiments", Adam Smith touched upon the concept of the selfish (and personal) needs of an individual and its influence on morality in the society. The concern on non-economic sources of economic growth was assigned to the Older Historical School. Further, the analysis of institutional determinants of growth (and development) processes were improved by Institutional Economics, but it was a work of New Institutional Economics to perform research on informal foundations of the development. Therefore,

any social aspect of the economy requires a multi-linked research on religion, culture and politics in the country. It is mostly underlined that any permanent progress depends on the level and complexity of social capital. Through this approach one can settle on competitive and innovative ability on both micro and macroeconomic levels. The common understanding of social capital becomes an important tool to explain differences in the quality of life and wealth of different societies with a similar economic potential. While it can define the positive aspects of development, the level of social capital (and the strength of informal institutions) brings the awareness of the failure of development programmes being implemented on areas both economically

and, to some extent, culturally backward (Pearce, Barbier, & Markandya, 1990). Thus, one has to define the elements of social capital, in regards to see the potential compound of it and possible models of development.

Social capital is a desirable feature of social structure. It is a set of informal institutions affecting the collective and expedient values shared among people. Therefore, social relations stand for the ability of social interaction between people within groups and organisations to achieve common goals. What allow for the increase of the efficiency of any collective actions are mutual obligations, expectations arising from social roles and the legal conditions (of any formal institution).



Source: Personal work based on Bratnicki i Strużyna, 2001. *Przedsiębiorczość i kapitał intelektualny (Entrepreneurship and the Intellectual Capital)*, Wydawnictwo Uczelniane Akademii Ekonomicznej im. K. Adamieckiego w Katowicach, Katowice, Poland, p. 70

Fig.3: Elements of Social Capital

The most important part bonding social relations are shared norms and values which could be understood as a set of patterns of a behaviour (Przygodzki, 2004). Among them are that the value of trust is foremost a chance to build a society (and minimise transactional cost) and its lack brings obstacles to any cooperation. The trust is a fundament of social capital, as it is an essence of any value system or any informal institution. On the micro level individuals and societies will gain a comparative advantage in producing a higher quality of life in regards to a higher level of trust. Trust as a base of social capital:

- Enhances cooperation for mutual benefits
- Solves indecision upon collective action
- Reduces the level of opportunism
- Reduces egoism (Leiknes, 2009)

It is a common summary that no structure can exist without trust and no future perspective stands for weak (or low) social capital (Putnam *et al.*, 1993). To adjust for a low social capital means to raise the transactional costs and reduce in possible (higher) welfare, both economically and mentally. Thus, in the long term it reduces the chances for sustainable development due to the fact that an individual works and lives to satisfy his or her own needs.

This is a great feature of the 21st century that universal, macro-social and comprehensive theories are being reversed into either middle ranged (and short-termed) or just broader generalisations of

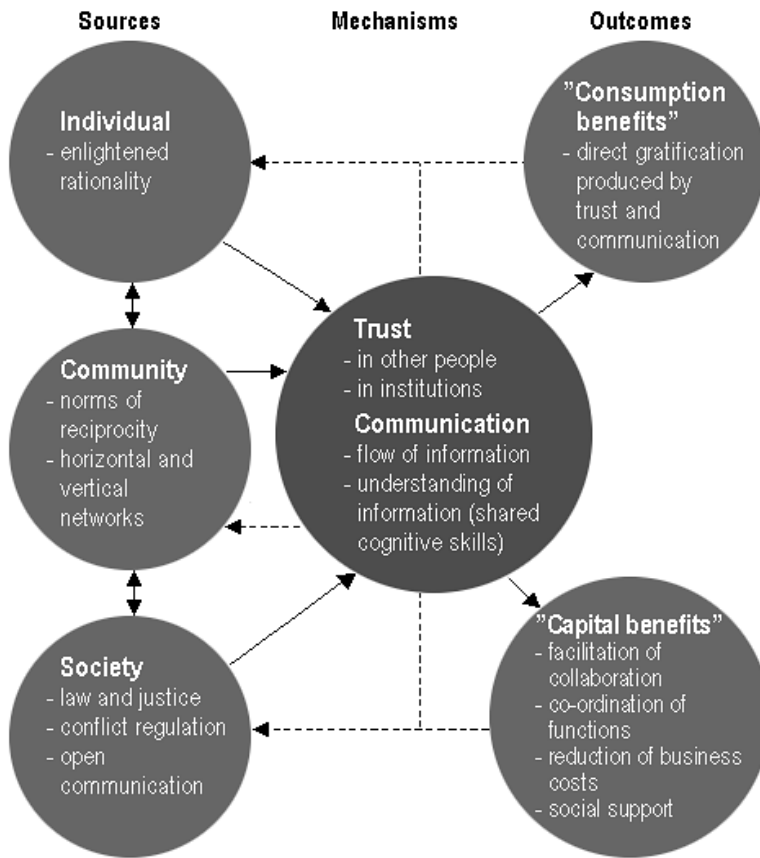
the empirical research (Sadowski, 2007). Further, in social terms the concept and implementation of sustainable development plans has to become attractive as an alternative to the present model of economic activities, in particular, in the way of making decisions. It, therefore, indicates that social capital (and human capital) is not the only requirement of sustainable development. It is a result of thread links which support and condition each other. According to Tisdell, one can point out common aims, which in long-term social capital depends on:

- Maintaining the economic intergenerational prosperity
- Maintaining the productivity of economic systems
- Maintaining evolutionary potential
- Maintaining the flexibility of socioeconomic and natural systems (Tisdell, 1991)

New Institutional Economics has pointed out that any individual functioning without any social context (hence, independently from formal institutions such as government, or informal institutions such as culture), cannot process any concrete, systematic or reasoned model of sustainable development. However, in regards to the theory of chaos, the irrationality either of the system or social groups implies the irrationality of the whole system (Unold, 2003). As one might point out, social capital is strictly connected to environmental issues. It reflects social conditions and changes in behaviour. The concept of social capital is embedded in

the environment and encompassed in the economy (Empacher, 2002). Therefore, social capital is situated on the other level of analysis than the environmental or economic dimension of sustainable development. Since the modern economy is a complex structure of multi-linked activities, (in opposition to neoclassical theories) new models of development should consider other dimensions. After all, it can be stated that socially sustainable development

improves and guarantees availability to current and future generations all the desirable needs on the social, economic and environmental levels. It causes the need for egalitarian intergenerational distribution of resources and the building of a base for continuous development (Ballet, Dubois i Mahieu, 2003). One can say that the former capabilities depend on the current attitude. Any unexpected change in either politics through legal changes impacting



Source: Ruuskanen, 2001. *Sosiaalinen pääoma käsitteet suuntaukset ja mekanismit (Social Capital and the Trend Mechanism)*, VATT tutkimuksia 8, Helsinki, Valtion taloudellinen tutkimuskeskus, Finland

Fig.4: Sources, Mechanisms and Outcomes of Social Capital: Stressing the Importance of Keeping These Dimensions Apart in the Measurement of Social Capital

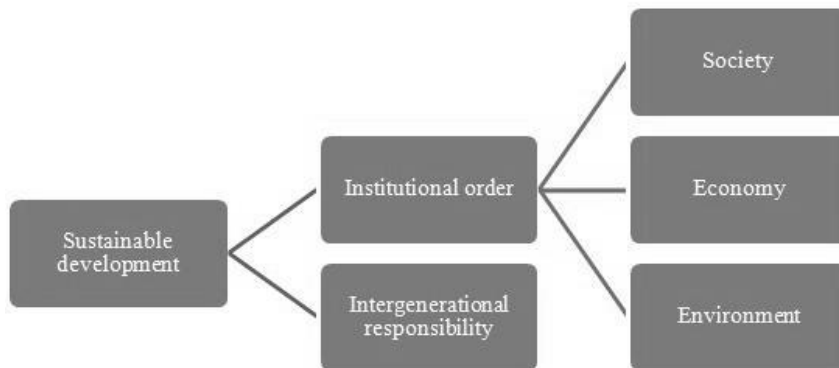
the conditions of work, retirement, saving possibilities or environment in terms of the unreasonable higher usage of natural resources and lower investments on technologies improving the usage of renewable energy sources will impact (and threaten) social cohesion and reduce the possibility of development (Raja, 2010).

In regards to New Institutional Economics based on the criteria of economic rationality and conditioned by methodological individualism, NIE points to a strong relationship between formal and informal institutions. As customs, attitudes and expectations shared among the society suffer interference from interest groups, the path of development is an indirect cause of their pressure and their needs. Therefore, it is for legal institutions to choose to clarify a path of development to comply with the needs of the whole society. Any transactional costs arise because of themislead between groups of environmental, social or economic interest. Though those areas are the pillars of sustainable development, any institutional

change should be based on a common understanding of these groups and real estimation in achieving institutional order.

IMPLICATIONS

Social capital presupposes trust, shared norms and values, knowledge and collective utility functions. It is the inexhaustible notion of capital influencing the conscious and deliberate usage of other forms of capital. I distinguish between two fundamental compositions of wealth broadly understood in the concept of sustainable development. The first consists of produced assets, human resources (including social capital) and natural capital. While I agree with the notion of strong sustainability, I perceive sustainability as “maintaining different kinds of capital separately” (Serageldin & Grootaert, 2000). The second approach is similar to natural and produced capital, as well as intangible capital which takes into account raw labour, human capital, social capital and quality of the institutions (World Bank, 2006).



Source: Personal work

Fig.5: Simplified Path of the Elements of Sustainable Development

The intriguing idea of social capital as a missing link in the concept of sustainable development has achieved broad theoretical attention. However, the empirical attempts to explain the role of social capital in (economic) development has given rise to some opportunities to analyse the outcomes of either its presence or the lack thereof:

- The Grameen Bank – Set up by the Noble Laureate Muhammad Yunus, Grameen Bank provides rural people in Bangladesh with small credits, that are impossible to receive from standard financial institutions. “Social capital is accumulated along with the accumulation of financial and physical capital associated with the bank credit” (Buckland, 1998)
- Study on Italian regions – Putnam research on economic and political outcomes in Italy, whereas the two opposite “regions”, the South and North, are differentiated by the level of

trust; here, social capital is defined by the strength of the informal institutions

- High rates of growth in East Asia – despite the extensive usage of natural resources, the governments of the nations dubbed the Asian Tigers enhance efficiency and cooperation, thereby leading to social cohesion and enabling society to maintain or improve welfare. High growth has led to the reduction of poverty and these nations have gradually progressed in social responsibility
- Integrated perspective – to understand sustainable development as an integrative strategy to improve the well-being of the groups and consider social capital as a main notion for change in the fields of energy, international trades, security and development cooperation (Drexhage & Murphy, 2010)

TABLE 1
Composition of Total Wealth, 2000, \$ per capita and Percentage Shares

Income Group	Natural Capital	Produced Capital	Intangible Capital	Total Wealth	Natural Capital Share (%)	Produced Capital Share (%)	Produced Capital Share (%)
Low-income countries	1,925	1,174	4,434	7,532	26	16	59
Middle-income countries	3,496	5,347	18,773	27,616	13	19	68
High-income OECD countries	9,531	76,193	353,339	439,063	2	17	80
World	4,011	16,850	74,998	95,860	4	18	78

Source: World Bank, (2006), *Where Is the Wealth of Nations? Measuring Capital for the 21st Century*, World Bank, Washington D.C., p. 24, (Oil states are excluded)

CONCLUSION

As social capital is one of three elements of human capital, it complies with the values of family (and family values), society and, thus, formal institutions which result in searching for the best possible path of development at the current time. However, the difficulty lies in looking at multi-linked areas and, to some extent, submission to the needs of society. The question is about the welfare of any individual, the relationship between them and the priorities of development for intergenerational equity.

This short article has not given any direct response on the right path of development. Thus, it is a simplified and introductory plan of research to enhance the role of social capital as a common (as it should be) need of sustainable development on both individual and social levels. This is, however, a starting point in enhancing the theoretical framework, how New Institutional Economics and its tools can bring awareness and possible answers to local **incomplete models of development**. I have tried in this paper to underline the need for social cohesion, stronger informal institutions and compliance with the formal institutional (legal framework) because sustainable development is based on environmental, economic, cultural and, thus, social needs.

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In the Shadow of Asset Security: Corporate Social Responsibility Programme by the Greater Nile Petroleum Operating Company (GNPOC), Republic of Sudan

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ABSTRACT

This paper reports the findings of a study on the rationale for the provision of health services projects implemented by the Greater Nile Petroleum Operating Company (GNPOC), Sudan. The study was based on interviews with the related personnel in GNPOC, community leaders and patients. The interviews are complemented by observations made during field work on the various community development projects that have been implemented. It highlights the company's Corporate Social Responsibility (CSR) initiatives that have been over-shadowed by asset security mitigation concerns. While maintaining conventional security based on the use of paramilitary and security forces, GNPOC also initiated community development projects in the host communities. The objective was to foster a positive perspective among host communities of the company's effort on wealth sharing and to "win the hearts and minds" of the communities in order that they might protect the company's assets as their own. The paper concludes that the CSR initiatives by GNPOC are 'security driven' rather than spreading the benefits to other communities away from the oil pipeline.

Keywords: Asset security, Corporate Social Responsibility, health services projects, Greater Nile Petroleum Operating Company (GNPOC), Republic of Sudan

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INTRODUCTION

Companies are dependent on their stakeholders to obtain the necessary resources for their on-going concerns. The legitimacy of the companies to use these resources depends on their compliance with local rules and values (Freeman,

1984; Freeman, 2004; Friedman & Miles, 2006). They obtain a “license to operate” on condition of not being a predator of the natural and social environment (Eweje, 2006). By and large, the concern of local communities is that companies that seek to set up businesses in their locale create wealth for themselves but return little or nothing to the communities. This has led such companies to moderate this concern; one of the strategies to accomplish this is the creation of Corporate Social Responsibility (CSR) projects (Wells, 2008). In general, CSR focuses on the issue of companies’ contributions in meeting the social and economic needs of the communities in which they are established.

Globally, oil companies continue to be at the forefront in advocating Corporate Social Responsibility (CSR) activities. Compared to the past, oil companies today attach increased importance to the social and environmental dimensions of their business activities, and there is a marked increase in the frequency of engagements with local communities (World Business Council for Sustainable Development, 1998). Oil companies have sponsored and executed considerable numbers of community development schemes such as building schools and health centres and supporting youth development programmes. Effectiveness of CSR activities by business corporations notably in the oil and gas sectors have been increasingly scrutinized by various stakeholders. There has been allegedly a disparity between the declared plans of industry captains and what is happening on the ground. The current

situation in the Republic of Sudan is no different with respect to CSR or Community Development (CD) projects funded by the oil companies.

A case in point is the CSR initiatives funded and implemented by the Greater Nile Petroleum Operating Company (GNPOC). As part of the company’s corporate social responsibility, GNPOC has been actively involved in implementing various CD projects in the country. Beginning 1999, scores of CD projects have been implemented for the benefit of the host communities. The GNPOC’s CD projects are centred on provision of water, education and health services and facilities and community capability buildings. Such projects were implemented with the background of a multitude of tribal groups, cultures and traditions. The implementation of the CD projects comes with its fair share of problems, as experienced by the companies. Quite often these projects were implemented with limited understanding of the physical, political and socio-cultural environments of the target communities. Indeed, some of these projects did not have the desired effectiveness as expected.

The primary objective of this study is to investigate the rationale for the provision of CD projects implemented by the GNPOC, Sudan. It examines the driver of the company’s corporate social responsibility initiatives. However, any attempt towards comprehending the CSR or CD projects by the oil companies must be made in relation to the unfolding events in the petroleum industry in the respective host country.

RESEARCH METHODOLOGY

The research employed both primary and secondary data collection techniques. The primary data collection was based on interviews with the GNPOC's personnel, notably those in the Security Department and Community Development Unit and with Area Coordinators. During the field trips interviews through interpreters were also carried out with the Omdah (community leaders), patients and personnel manning the health clinics. These interviews were complemented by observations on the physical conditions of the clinics, the conditions of the equipment, facilities, the stock of medicines and vaccines, and the general hygiene of the clinics and its vicinity. Complementing the interviews, the observations by the researchers during field work related to the various community development projects and the surrounding communities also played an integral part in the data collection process. Field work was carried out from Heglig and Neem in the southern oil fields to Port Sudan. Apart from the field visits, the study also utilised available secondary information provided by GNPOC such as the company's reports and journal articles.

BACKGROUND OF CSR AND DEVELOPMENT IN AFRICA

Scholarly research that focused on CSR in Africa remained few and nascent (Visser, 2005). Literature on the development of CSR in Africa is largely focused on South Africa. A few similar studies are found in Cote D'Ivoire, Kenya, Nigeria,

Tanzania, Mali and Zambia. Most of the CSR activities were initiated by the extractive sectors, mainly the mining and petroleum industries (Hamann & Kapelus, 2004; Frynas, 2005; Visser, 2005). The CSR initiatives implemented by the companies in these industries are categorised into the following projects (Jenkins & Obara, 2008; Visser, 2008; Idemudia, 2010):

- a. Infrastructure improvements like constructing access roads, housing, community buildings, small business training centres, market stalls, provision of the supply of utilities such as electricity and clean water
- b. Social welfare initiatives such as offering health services to the communities that include constructing and equipping hospitals and health centres
- c. Education initiatives such as provision of scholarships, technical training colleges, building secondary and primary schools and supplying teachers
- d. Community foundations where funds are generated by companies and are channelled for social projects
- e. Supporting small local businesses whereby the companies give special preference to the local suppliers in their procurement policies
- f. Sustainable livelihood projects in developing sustainable employment opportunities for host communities
- g. Micro-credit finance schemes that can be used to launch new micro-enterprises, create jobs, and help

economies of the host communities to flourish. Micro-credit schemes are also aimed at empowering rural women and other disadvantaged groups in the communities.

It is apparent that the CSR initiatives in Africa cover a wide spectrum of activities from infrastructure development to micro-credit schemes. Such wide ranging parameters are clearly related to the level of development in the respective countries and the related needs of the people. This envisaged that the CSR priorities of the companies and the host countries are not expected to undergo drastic changes.

THE RATIONALE BEHIND CSR INVESTMENT

Generally, the main objective of a CSR programme is to accomplish the community's needs by providing equal opportunity to raise their living standards, equal opportunity to the access of healthcare services and quality education (Alias *et al.*, 2011; Sneddon, 2000). Previous studies have shown that approaches to community relations adopted by oil companies evolved through three phases. By and large, in the initial phase, these companies adopt the pay-as-you-go approach with the aim of securing right-of-way. This is portrayed by the simple relationship between the oil companies and the host government as described by Frynas *et al.* (2000). The foreign oil companies and the host governments depend on each other. The oil companies provide revenue for the states in the form of tax and royalty while the states provide the concessions to

the countries' natural resources by granting oil licenses and providing the regulatory framework that defines the terms and conditions of operations and the financial incentives for the oil companies. For this reason, CSR in past practice was given a rather low emphasis by oil companies and motivation did not go beyond merely respecting the legal obligations.

However, as the companies continue their operations, they progressively accept the importance of corporate social responsibility in securing the social licence to continue their operations. At this juncture, the strategy of community involvement was largely corporate driven. Community participation was at best minimal and projects faced sustainability issues. Overtime, as the number of projects increases, the cost of implementing the community development increased tremendously. Realising these facts, the companies now shift towards corporate-community involvement strategies in partnership with local communities and other oil operating companies. These oil companies share the decisions on community development projects with local communities to enhance the sustainability of the project and thereby, restrain the large increase in social investment (Idemudia, 2009a).

International petroleum contracts involve three parties, namely (1) host governments that own the resources, provide the legal, fiscal and regulatory frameworks and execute the applicable petroleum agreements with international oil companies;

(2) international oil companies (IOCs) that contribute the capital, technology and expertise in return for a reasonable return on investment to compensate for their risk; and (3) host communities that may put down claims to the resource and have expectations from oil and gas operations. Though the IOCs negotiate and execute applicable international petroleum contracts with host governments, they must contend with the demands of non-contracting parties, namely, the host communities that have little legal standing to peacefully engage in operations. Without the host communities, IOCs lack the social licence to operate. Failing which, the host communities feel that they do not get enough social and economic assistance even though the wealth is being extracted out of their neighbourhood. To make matters worse, in most cases, the host governments adopt a hands-off approach and insist IOCs address the needs and concerns of host communities. Hence, the mounting pressure on the IOCs to demonstrate their social accountability, especially those operating in politically and environmentally sensitive regions. Consequently, the IOCs have to devote significant resources towards appeasing the concerns and needs of host communities. Other business reasons as cited by Frynas (2005) and Spence (2011) include:

- CSR is a good strategy to manage external perceptions and maintain the good reputation of companies
- Maintaining a stable working environment by obtaining the host

communities' agreement to allow the company to operate

- Obtaining a competitive advantage as socially responsible companies are favoured by the host government

OVERVIEW OF THE OIL INDUSTRY IN THE REPUBLIC OF SUDAN

Oil exploration activity in Sudan began towards the end of the 1950s in the coastal waters of the Red Sea and the Sudanese continental shelf. The majority of proven reserves are located in the south in the Muglad and Melut basins. However, due to civil conflict, the activities of oil exploration were concentrated in the central and south-central regions of the country. Uncertainty caused by internal political unrest has forced many companies to withdraw their operations from the country. The deterioration in security conditions in the oil fields caused the remaining oil companies to suspend all operations in 1984.

In 1975, Chevron was granted a concession in the south and south-west of Sudan and the first oil discovery was made west of Muglad years later. Following that, more significant discoveries were made by the company in the Unity and Heglig fields. Nonetheless, in 1984, Chevron ended its 17-year involvement by selling its interests to the Sudanese company CONCORP Petroleum. This company took over the concession rights with proven reserves of 1.3 billion barrels of oil and later, sold the concession rights and assets to the Canadian oil corporation 'State Petroleum Corporation'. In 1994, Arakis Energy

Corporation purchased State Petroleum Corporation and started operating in Sudan. In 1996, Arakis, in the face of difficulties, sold 75% of its shares to the China National Petroleum Company (CNPC), PETRONAS (Malaysia) and Sudapet (Sudan) and formed the Greater Nile Petroleum Operating Company (GNPOC). Arakis subsequently relinquished its remaining share in the GNPOC to the Canadian company Talisman in 1998. Talisman later sold its shares in the GNPOC to the Indian Company Oil and Natural Gas Corporation Limited (ONGC) and left the scene.

The GNPOC made considerable discoveries and succeeded in constructing the 1,600 km pipeline linking the Heglig and Unity fields to Basha'ir Red Sea Terminal at Port Sudan. In 1999 the pipeline became operational and carried the first oil exports. Currently operating in Blocks 1, 2 and 4, GNPOC is one of the companies that are actively involved in the development of the petroleum industry in the Republic of Sudan. GNPOC operates three exploration and two development blocks. The concession area is located approximately 700 km south-west of Khartoum.

Undoubtedly, the development of the oil industry has changed Sudan's physical landscape and touched the livelihood of the people. The oil industry in Sudan has been dominated by two significant stakeholders namely the Government of the Republic of Sudan and the foreign oil companies. Current players in Sudan include GNPOC, Lundin Oil, PETRONAS, Sudapet, Gulf Petroleum Corporation and China National

Petroleum Corporation (PETRONAS, 2009). The third group of stakeholders, that is, the host communities, has been given less emphasis. The host communities can be categorised into three groups specifically i.e. the producing host communities at the vicinity of the oil exploration, transit host communities through which the oil pipelines pass and terminal host communities where the port or terminal facilities are located (Idemudia, 2009b). The route taken by the Greater Nile Oil Pipeline is shown in Fig. 1. Initially, the pipeline began at the Heglig oil field in South Kordufan State. Since 1999, the pipeline has been extended to the Unity State oil field. From here, the pipeline route covers North Kordufan State and the Nuba Mountains and passes the central region through Khartoum and the River Nile States. The pipeline extends to the eastern sector through the Red Sea State and ends at the Basha'ir Terminal at the Port Sudan.

The route of the pipeline spans diverse geographical features from almost equatorial jungle in the south to a sandy uninhabited dessert in the north. In terms of the people, large numbers of tribes who speak various languages and dialects peppered the oilfields around which were settled the host communities, transit host communities through whose territory the pipeline passes and the terminal host communities that stay around the territory of the port or terminal facilities. Some of the major tribes include the Messeriya Arabs, Nubians, Daju, Hawazma, Gawama'a, Bedairiya, Dar Hamid, Shanabla, Hawawir, Gamuiya, Gimaia'ab, Ja'aliyin, Shaiqiya, Hassaniya,

Rubatab, Rashaida, and Beja to name a few. Apart from the tribal groups and languages, diversity is also expressed in terms of religion. While the majority of inhabitants are Muslim, there are also Christian denominations and traditional local belief systems. The ecological and ethnic diversity is also matched, on the economic side,

with distinct patterns of adaptive strategies and livelihood activities. Some cultural groups are largely involved in agricultural activities as their adaptive strategy though others trek wide areas looking after large number of cattle, camels or sheep. There are also groups that combined cultivation with livestock husbandry.



Source: USAID 2001 Sudan Oil and Gas Concessions Map

Fig. 1: The route taken by the Greater Nile Oil Pipeline

OIL INDUSTRY AND CIVIL WARS IN THE REPUBLIC OF SUDAN

Sudan experienced its first civil war between 1956 and 1972. It was ended by the signing of the Addis Ababa peace agreement, with the south becoming an autonomous region. The second civil war broke out in 1983 as a consequence of the collapse of the Addis Ababa agreement. The oil discoveries made by Chevron in Sudan complicated the relations between south and north and has played a major role in re-igniting the second civil war. The oil related conflicts began in 1980 when the Sudanese government proclaimed a plan to change the borders between the southern and northern provinces. On the basis of this plan the oil-rich Unity State became part of the north. The plan met outright rejection by the southern leaders who alleged that the division plan was an attempt by the central government to control the oil areas and deny the south of oil revenues. Under the Addis Ababa agreement the southern regional government had the right to all profits on exports from the south region.

Another dispute revolved around the pipeline connecting the southern fields to Port Sudan. The south preferred a route that would not pass through the north and proposed an alternative route that passed through Kenya to the Indian Ocean. In addition there was also a dispute over building a refinery which the south demanded to be in its region. This demand was rejected by the central government and the refinery was built instead in the north. These disputes, all related to control over

the country's oil wealth, resulted in a deep crisis and an increasing lack of trust between the two parties. The central government's clear intention to seize full control of the oil violated the Addis Ababa peace agreement and increased anger and fear in the south, which eventually erupted the second civil war between the Sudan People's Liberation Army (SPLA) and the North.

The eruption of the war caused mounting challenges for the foreign oil companies to continue operating in Sudan. The SPLA targeted the oil fields to prevent the Sudanese government exploiting the oil resources. In 1984, the SPLA attacked the oil fields in the south, abducting and killing three Chevron workers. This unfortunate incident forced the consortium led by Chevron to suspend its operations. Likewise, the consortium led by Total suspended its operation the following year. Indeed, the SPLA announced that the pipeline, oilfields and oil company workers would be regarded as legitimate military targets. The first sabotage was conducted on 20 September 1999 where a section of the pipeline 350 km north of Khartoum was blown up. Consequently, the Sudanese government deployed 3,000 policemen to guard the pipeline, and paramilitary groups were deployed to the oilfields.

The SPLA lost considerable ground to the government forces over the next three years following the overthrow of the Mengistu regime in Ethiopia in 1991, a main ally of the SPLA. The majority of the oilfields once again came under control of the Sudanese government, and relative security prevailed. This new situation

attracted new foreign investments and led to the resumption of the oil exploration and development operations. The oil revenues, especially after 1999, altered the balance of power within Sudan as the Sudanese government gained the financial resources to modernise the army and make it more efficient in fighting the SPLA. This shift in the military balance of power did not bring the civil war to an end. The SPLA continued to receive support from its allies and continued to attack the Sudanese army and the oilfields. The civil war only ended officially in January 2005 after the signing of a peace agreement in Nairobi, on the basis of which the south was granted the right to self-determination in 2011. An important element in the agreement was the sharing of oil wealth, which would be divided equally between both parties.

It is quite apparent that GNPOC's experience in implementing CD projects in the rural communities in Sudan is rather different compared to that of other extractive industries. The historical specificity of the country, influenced by the wider social, economic and political forces has undoubtedly played a significant role in shaping the rationale of the company's CD programme. While CD projects carried out by corporations in other countries are implemented under relatively peaceful conditions, the same cannot be said about Sudan. The CD projects by GNPOC were formulated through civil wars and conflicts. A principal challenge facing GNPOC operating in conflict zones is the safety of their operations, assets and

personnel. GNPOC has a legitimate need to establish adequate security arrangement. The protection of assets and personnel necessitate direct engagement of state security agencies and also private security services. However, GNPOC recognises that the company cannot insure security at the expense of the host communities. The company has to include stakeholders on issues of security of operations, assets and personnel. Hence, the initiatives of the CD programme evolved through the security agenda of the company. The past and current organisational structure of the CD programme under GNPOC's Security Department and personnel is a logical and direct consequence of these political circumstances.

HEALTH SERVICES PROJECTS BY GNPOC

One of the most important questions for GNPOC is how to protect their operations, assets and personnel whilst ensuring that they also consider what may be rightly owed to the host communities. This is a key factor in the company's relationship with the host communities. In mitigating the security of their assets, GNPOC took the proactive step by forming their own security teams, providing another layer of security in their oilfields. While maintaining the conventional kind of security based on the use of paramilitary and security forces, GNPOC also focused on community policy that creates development for the people in the host communities. The objective is to encourage host communities to adopt a

positive perspective of the company's efforts towards wealth sharing while the company at the same time can protect its assets. This strategy has shaped the company's Security Department organisational arrangement. Those in charge of security operations are at the same time tasked with community development (CD) projects. The manager of security operations for the oilfields and pipeline also oversees health care, education development and freshwater supply projects. Consequently, the emphasis to meet social and economic priorities, as well as stakeholder management, is rather low.

In an interview, the Head of the Security Department stated that the implementation of CD projects in the host communities located close to the oilfields and along the 1,600 km pipeline spanning from Heglig and Unity State to Port Sudan reflected a massive effort by GNPOC to "win over the people" by protecting the prized possession and obtaining the 'social licence' for the company to operate. He stressed that millions of dollars was spent annually to implement projects relating to water, education and health services. Apart from these core areas, projects associated with agriculture are also carried out. Since the implementation of the CD programme from 1999 to 2007, a total of US\$25.5 m had been spent on various initiatives and an estimated US\$4m was budgeted for 2008. The overall project cost for 11 years (1999 – 2000) was close to US\$40 m. The projects include areas such as water, health, education, agriculture and others. A total of 1,135,000

people in the four sectors namely Heglig, Southern, Central and Eastern sectors have benefitted from the various CD programmes implemented in the above mentioned timeframe. Many more projects are being planned while some are in the process of implementation.

Table 1 highlights the health services projects that have been implemented between 2000 and 2008. The health services programmes have two components, namely, upstream, which covers the concession area, and downstream, along the pipeline. The primary motive behind the implementation of the health services projects and the serious social engagement by GNPOC with the communities is maintaining a stable working environment so that the company can continue its commercial operations. These community development projects are carried out in the concession area (Block 1, 2 and 4) in Heglig, which is about 800 km south-west of Khartoum, as well as in towns and villages along the 1,500 km underground export pipeline from the Heglig central processing facility up to the marine terminal at Port Sudan.

As at 2008, GNPOC has delivered 59 health services projects for the communities in the concession area and in the areas along the route of the underground export pipeline. The projects include the construction of new hospitals and health centres and the rehabilitation and maintenance of existing hospitals and health centres. The company also provided community medical care through the supplying of medicines and medical equipment to various hospitals

and health centres. In addition, GNPOC provided mobile clinics with doctors, nurses and medicines that go to the various health centres on a regular basis to supplement the services provided by the health centres.

Between the years 1999 and 2007, the health services projects had served 949,000 beneficiaries with a total investment of US\$7,166,188. Analysing further by sectors, during the period from 1999 to 2007, reveals that GNPOC has invested approximately US\$4,315,792 in the health services projects in the Heglig sector which has benefitted a total of 340,000 people in the surrounding communities. The Southern Sector has received health services projects worth US\$1,410,396 that benefitted 260,000 people. The Eastern Sector, on the other hand, was allocated a total amount of US\$850,000 for the projects, and 159,000 people benefitted from the health services. The Central Sector has received US\$590,000 during that period with a total

of 190,000 beneficiaries. Comparatively, the Heglig Sector has received the highest allocation of the community development budget for health services followed by the Southern Sector, Eastern Sector and, finally, the Central Sector. The high investment in Heglig is reportedly due to the building of hospitals and the comparatively high cost of construction.

Notwithstanding the above, there are a number of sustainability issues in the delivery of the health services projects initiated by GNPOC. The lack of involvement of the beneficiaries (local communities) of community development projects, the neglect of social dimensions such as the adaptive strategy of the local communities when designing the community development projects and the poor integration of the development initiatives into the larger development plan of the company have been perceptible. It is contended that part of the problem is contributed by the way the

TABLE 1
GNPOC Community Development Projects – Health Services

Year	Hospitals and Health Centres	Heglig Sector	Southern Sector	Central Sector	Eastern Sector
2000	8	4 HC	4 HC	-	-
2001	7	2 H	2 HC	1 HC	2 HC
2002	3	-	-	1 HC	1 HC, 1MR-H
2003	4	1 HC	1MR-H	1 HC, 1MR-H	-
2004	6	-	2 HC, 1MR-H	-	3 HC
2005	11	2 HC, 1 H	4 HC	1 HC	3 HC
2006	8	2 HC	1 HC	2 HC, 1MR-H	2 HC
2007	7	3 HC	2 HC	1 HC	1 HC
2008	5	2 HC	1 HC	1 HC	1 HC
Total	59	17	18	10	14

Notes: H – Hospital, HC – Health Centres, MR-H – Maintenance and rehabilitation of hospital

Source: GNPOC Community Development Report

health services projects were formulated, especially in understanding the communities that are pastoralist, agro-pastoralist or sedentary (World Bank Document, 2005). The consequences of misdirected or mismatched profiles prevailed in some of the health services project sites visited. Some of the observations include:

1. Effectiveness of the health centres depends on the adaptive strategy / adopting mechanism of the people. Health centres in the sedentary communities are better maintained than those located among the communities of nomads that frequently move.
2. Major problems faced by most of the health centres are the results of the insufficient role of the government in operate and maintain the health centers. However, it is a “business case” for

GNPOC to ensure those hurdles are overcome.

3. The project design needs to be redefined to include more participation from the community and the gap in terms of technical support, operation and maintenance needs to be addressed.

ORGANISATION OF COMMUNITY DEVELOPMENT IN GNPOC

Central to the motivation behind community development is the desire to win the “heart and mind” of the community to the objective of protecting the strategic assets of the company and the nation in general. Indeed the organisational structure for the management of the CD programmes is another illustration of the priority given to the security concerns related to the assets of the company as shown in Fig.2.

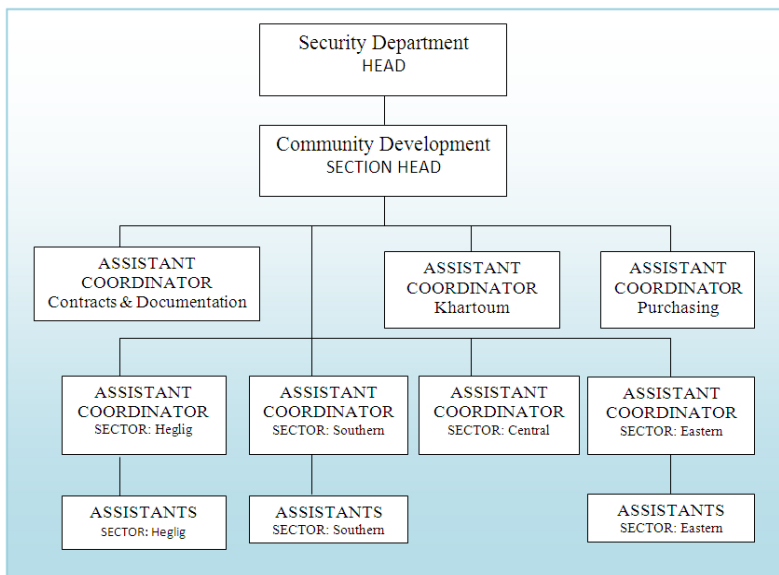


Fig.2: Community Development Section – Organisation Chart

The community development programmes are headed by a Section Head and supported by 20 staff. It comes under the Security Department, which is directly responsible to the President of GNPOC. The choice of the organisational structure reflects that the community development initiatives are driven by the security mitigation agenda of GNPOC. This is in concurrence with the view given by Brammer and Millington (2003). As such, the projects were managed by non-CSR professionals (*vis-à-vis* security professionals) and the initiatives were implemented with limited understanding of the physical, political and socio-cultural environments of the target communities. Due to the vast area of coverage, the CD projects are divided into four sectors and each sector is headed by an Assistant Coordinator. The first sector is Heglig sector which covers the oil concession area that includes Al-Wahda State, part of South Kordufan State, and part of Warab State. The second is the Southern sector, which covers Kailak Al-Buhaira and Um Balingi in the north of Al-Obeyid and part of the State of South Kordufan. The third sector is the Central sector, which is in the region between Um Balingi in the north of Al-Obeyid and Al Damar in the region of Atbara River, and includes the states of Northern Kordufan, Khartoum and River Nile. The fourth is the Eastern sector, which is located between Atbara and Port of Sudan. This sector covers the two states of the River Nile and the Red Sea.

CONCLUSION

GNPOC has and will continue to implement CSR projects through its community development programme. Over the years, scores of such projects dotted the countryside spanning from Port Sudan to the Heglig and Neem oilfields and further south. The projects, which include health services, education and water supply, are situated close to the 1,600 km pipeline from Port Sudan to Heglig. Two major findings from the study emerged. Firstly, the CD projects, due to security concerns, are located close to the principal asset of the company, namely the pipeline. The CD Unit, responsible for the implementation of such projects, is placed under the Security Department, which gives ample evidence that the CD projects are ‘security driven’, rather than based on social needs and spreading their benefits to other communities away from the pipeline. As far as GNPOC is concerned, the pipeline, the most-prized asset, must be protected at all costs. Apart from employing security forces to guard the pipeline, the company has resorted to implementing Community Development projects as a ‘disguise’ for the protection of the pipeline. Secondly, the CD projects were implemented with limited knowledge of the socio-cultural environment of the communities. This is partly due to the fact that the implementers of such projects are security personnel rather than CSR professionals and development specialists who have the expertise to spearhead a noble course to win the hearts and minds of the host communities.

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Extending the Moral Standing: An Evaluation of Peter Singer's Position

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ABSTRACT

Moral standing is acknowledging the moral significance that an entity possesses so that its interests and welfare are considered when we discuss ethics. The history of ethics is often associated with discussions on extending moral standing. Recent literature in ethics tries to extend moral standing beyond the human species. Concerns have been raised by moral thinkers like Peter Singer and others, who consider certain actions by human beings on animals as being unethical. Peter Singer in his work *Animal Liberation, In Defense of Animals, Practical Ethics* and in many other works as well argues that like human beings, animals also possess moral standing and some or most of our actions towards animals leads to an unequal treatment on those beings. He justifies extending ethical considerations to animals on the principle of sentience. Sentience is the capacity of the being to experience pain or suffering. The objective of this study is to see if Singer's principle of sentience does really extend moral standing. In this paper, we critically analyse the logical outcome of applying his principle to humans and animals. Based on the results of our study, we claim that instead of extending moral standing, Singer's principle limits the scope of moral consideration. Singer's theory may inevitably result in limiting moral standing only to living members of the human species and may set aside from moral consideration potential human beings such as the human fetus.

Keywords: Ethics, moral standing, Singer, suffering, animals, fetus

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INTRODUCTION

Moral standing is acknowledging the moral significance that an entity possesses so that its interests and welfare are considered when we discuss ethics. As James Rachels says, "You have 'moral' standing if, from a moral point of view, you have claims that must be

heard – if your interests constitute morally good reasons why you may, or may not, be treated in certain ways” (Rachels, 1999). The discussion of moral standing therefore is concerned with a normative understanding of how beings ought to be treated. Moral standing thus implies an intrinsic value of a being. If a being has a moral standing, then, moral decisions “ought to take that individual’s welfare into account for the individual’s own sake and not merely for our benefit or someone else’s benefit” (Claire & Manuel, 1991).

Recent literature in ethics (Rowlands, 1998; Regan, 2001; Francione, 2008) tries to extend moral standing beyond the human species. Concerns have been raised by moral thinkers like Peter Singer and others, who consider certain actions by human beings on animals as being unethical. Peter Singer in his work *Animal Liberation, In Defense of Animals, Practical Ethics* and in many other works as well believes that like human beings, animals also possess moral standing, and therefore, he tries to extend moral worthiness to the animal species as well. He justifies extending ethical considerations to animals on the principle of sentience. Sentience is the capacity of the being to experience pain or suffering, and Singer uses this principle to extend moral standing to animals as well.

When we apply Singer’s principle in the context of human affairs, we see the implication that the human fetus need not be worthy of moral consideration at some of the stages of fetus development. Singer’s principle of suffering makes it difficult to

defend the unethical nature of killing a fetus because as long as a fetus is unable to feel the pain or suffering, it ceases to be sentient. Thus, instead of extending moral standing, Singer’s principle limits the scope of moral consideration only to living members of the human species and may set aside from moral consideration potential human beings such as the human fetus.

In the second part of our paper, we discuss Singer’s principle of suffering in the context of animal welfare, which forms the basis of Singer’s extension of the notion of moral standing to encompass animals. In the third part of our paper, we try to analyse his principle of suffering in the context of human life to show the logical outcome of his position. In the final part of our paper, we critically assess his principle. In the conclusion we show that Singer’s principle limits the scope of moral consideration by excluding potential human beings.

THE PRINCIPLE OF SUFFERING IN THE CONTEXT OF ANIMAL LIFE

Speciesism in ethics discourse refers to privileging one species over and against other species, which is considered a mark of discrimination. Richard D. Ryder coined the term speciesism to look at those set of practices which favour a particular species over other species (Ryder, 2010). In the context of ethical actions, speciesism leads to favouring the human species over other species, including animals. The reason for privileging the human species over other species is that human beings possess the ability to reason, and this becomes the

criterion for privileging the human species over the animal species. Animals do not have moral standing as they do not have the ability to reason like humans. Rationality is a mark of dissimilarity between humans and animals, but there can also be a mark of similarity between humans and certain animals. That similarity is the capacity to experience pain or suffering. Both humans and animals can experience suffering.

Singer takes up the principle of sentience, that is, the capacity to feel pain or suffering as the fundamental similarity between animals and human beings and therefore, for him, on the basis of the capacity to feel suffering, animals also possess moral standing. Sentience is the ability to feel suffering or happiness. Singer writes "the meaning of sentience is the capacity to suffer or experience enjoyment or happiness" (Singer, Practical Ethics, 1993). Moral thinkers, particularly from the utilitarian traditions, including Jeremy Bentham, argue for the welfare of animals on the basis of the principle of suffering. Bentham's basis for moral equality is based on the formula, "Each to count for one and none for more than one" (Singer, All Animals are Equal, 1986, p.220). As Singer is a utilitarian, he is in agreement with Bentham's principle of equal consideration. Regarding Bentham's view, Singer writes, "In other words, the interests of every being affected by an action are to be taken into account and given the same weight as the like interests of any other being." (Singer, All Animals are Equal, 1986, p.220). Singer often quotes Jeremy Bentham:

The day may come when the rest of the animal creation may acquire those rights which never could have been withholden from them but by the hand of tyranny... a full grown horse or dog is beyond comparison a more rational, as well as a more conversable animal, than an infant of a day, or a week, or even a month, old... The question is not can they reason? Nor can they talk? But, can they suffer?

(Singer, Practical Ethics, 1993, pp.56-57)

Singer, too, argues for the welfare of animals on the basis of the principle of suffering. Singer writes,

If a being suffers, there can be no moral justification for refusing to take that suffering into consideration. No matter what the nature of the being, the principle of the equality requires that the suffering be counted equally with the like suffering--in so far as rough comparison can be made—of any other being. If a being is not capable of experiencing suffering or happiness then there is nothing to be taken into account.

(Singer, Practical Ethics, 1993, pp.57-58)

The extinction of suffering is the centre point of Singer's ethics. In an interview, Singer says with regard to suffering,

I think that if we follow that idea of 'doing unto others', then, even though people have different sorts of preferences and different wants, one thing is pretty general: people do not want to suffer. They do not want extreme physical pain; they do not want emotional deprivation and suffering. That's something we share with non human animals, broadly

(Singer, Writings on an Ethical Life, 2000, pp.321-322)

He argues that if suffering is the central issue in determining which actions are right and which actions are wrong, then one should not distinguish between the suffering of humans and the suffering of animals.

As both the animal and human species can experience suffering, Singer extends moral standing to animals as well. If both the species had the capacity to experience suffering, then, both species should be considered. So, for Singer human beings are morally obligated to animals as well. Thus, for him, "If it is in our power to prevent something bad from happening, without thereby sacrificing anything of comparable moral importance, we ought, morally, to do it" (Schmidtz, 2009, p.430). Singer's ethical position is to reach beyond the notion of speciesism by extending the need for ethical considerations to include non-human species as well, namely, animals.

It is from this logic of suffering, which a sentient being experiences, that Singer goes beyond the confinements of speciesism.

Reason maybe an exclusive privilege of human beings, which makes them distinct in the context of ethical considerations. But, suffering is common among all sentient beings, irrespective of whether it is the human species or a non-human species. By following this logic of seeing the common element of suffering in both humans and animals, Singer tries to extend moral value to animals as well. By doing so, he broadens the notion of moral standing, thus avoiding the idea of speciesism, of privileging humans over animals, which Ryder remarks is one form of discrimination. Singer argues for moral consideration of animals based on this concept of sentience. Animals possess the capacity to suffer, according to Singer. For Singer, if a being is not sentient then there is no need to take it into consideration. Singer has given the example of the comparison between a mouse and a stone. A mouse should be taken into consideration but not a stone. A mouse can suffer but not a stone. Within the animal kingdom, if there is a being that does not have the capacity to suffer, then for Singer, it need not be included for moral consideration. But, how can one be sure whether a being has the capacity to suffer? While it is possible to gauge the intensity of pain of other humans based on one's own experience of pain, is it possible to gauge the intensity of pain of other species based on personal experience? The essential question is how one can know if another person is in pain; more specifically, what measure or gauge or pain scale is one referring to when talking about the pain of another species? The

epistemological problem arises because of the position that it may not be possible to compare human pain intensity with non-human or animal pain intensity. Gary L. Francione says,

Singer's theory needs some notion of how we can measure (however imprecisely) inter-species experience.....It is difficult to compare pain intensity when we are concerned only with humans who can give detailed verbal reports of the sensation that they are experiencing-it becomes virtually impossible to make even imprecise assessments when animals are involved.

(Francione, 2003, p.15)

Perhaps, one answer is that though pain-intensity measuring may not be possible, there are sufficient grounds to believe that animals undergo pain. There may be situations in which it may not be possible to gauge whether animals are in pain or not. Singer suggests that if it is easy for one to disengage in inflicting 'pain' on animals, however low the intensity, then disengaging could be considered a better action upon animals. Whenever there is an element of doubt, as to whether an animal feels pain, Singer argues in favour of releasing the animal from that pain. Singer says,

While one cannot with any confidence say that these creatures do feel pain, so one can equally

have little confidence in saying that they do not feel pain. Moreover, if they do feel pain, a meal of oysters or mussels would inflict pain on a considerable number of creatures. Since it is so easy to avoid eating them, I now think it better to do so.

(Singer, Animal Liberation: A New Ethics for Our Treatment of Animals, 1975)

Singer thus makes a distinction between entities based on sentience. He argues that entities that possess the capacity of sentience are to be considered as possessing moral standing as they can experience pain and pleasure. In the next part, we shall discuss this principle with respect to humans.

THE PRINCIPLE OF SUFFERING IN THE CONTEXT OF HUMAN LIFE

Singer attempts to extend the scope of moral standing to animals based on the principle of suffering. But, the consequences of adopting a similar standard to humans results in an uncomfortable position from the traditional or religious viewpoint. If one has to think in line with Singer, then, it means that entities which are capable of feeling pain or suffering alone are worthy for moral consideration. That is the reason, according to Singer, inanimate objects and some lower forms of life that do not have the capacity to feel pain or suffering are not worthy of moral consideration. For him, a mouse can suffer, but not a stone. Hence, we should consider the mouse

when we discuss ethical obligations, but, we need not consider the stone. When we apply Singer's perspective to the context of human affairs, the implication is that a human fetus need not be considered worthy of moral consideration at some stages of fetus development.

Singer's principle of suffering finds nothing unethical in killing the early fetus. According to him, as long as the fetus is incapable of feeling pain or suffering, there is no moral issue involved in killing a fetus. For Singer, only sentient beings need to be considered, hence the fetus in its early stage (or the stage at which it does not experience pain or suffering) need not be considered. This suggests, according to Singer's position, that there is nothing wrong in killing an early fetus, for whatever reason. Even for trivial reasons, there is nothing unethical in killing the early fetus according to Singer. This goes against almost all religion-based ethics, which justifies fetus-killing only where the mother's life is at stake. Generally, all religions and religion-based ethics proscribe fetus-killing. John T. Noonan (Satyanarayana, 2010) has written the Catholic view of abortion which was expressed by Pope Pius XII:

The unborn child is a human being in the same degree and by the same title as its mother. Moreover, every human being, even the child in its mother's womb, receives its right to life directly from God, not from its parents, not from any human society or authority...The

life of an innocent human being is inviolable, and any direct assault or aggression on it violates one of those fundamental laws without which it is impossible for human beings to live safely in society.

(Satyanarayana, 2010, pp.148-149)

Singer opines that such proscription by religion-based ethics is to do with preference for the human species. Singer believes that it is because priority is given to the human species over other species, an argument for the preservation of the human fetus is heard whereas little or nothing is said against the killing of animals by humans. Traditionally, the central argument against abortion is:

It is wrong to kill an innocent human being –premise (1)

A human fetus is an innocent human being –premise (2)

Therefore it is wrong to kill a human fetus – conclusion (Singer, Practical Ethics, 1993).

Generally, the defenders of abortion deny the second premise of this argument. The second premise is concerned with the dispute as to whether the fetus is a human being or not. In other words, when a human life begins is the central issue here. Singer's argument for abortion is different from many other advocates of abortion. Rather than concentrating on the second premise Singer concentrates on the first premise of

the argument. Singer argues that there is nothing wrong in killing an innocent human being, in this context, the early fetus, since the early fetus is not a sentient entity. For the justification of abortion Singer says,

Since no fetus is a person, no fetus has the same claim to life as a person. We have yet to consider at what point the fetus is likely to become capable of feeling pain. For now it will be enough to say that until that capacity exists, an abortion terminates an existence that is of no 'intrinsic' value at all.

(Singer, Practical Ethics, 1993, p.151)

For Singer, a fetus then is as good as a stone, which is against the traditional moral standpoint. An argument can be put here against Singer's position that an early fetus may not be sentient, but has the capacity to be sentient in the future. A fetus can be treated as a potential sentient being and hence, it is wrong to kill the fetus. Singer tries to address this issue by the following argument. For Singer, from the statement 'A is a potential X', we cannot infer that 'A has the rights of an X'. Singer writes,

It is of course true that the potential rationality, self-consciousness and so on of a fetal Homo sapiens surpasses that of a cow or pig; but it does not follow that the fetus has a stronger claim to life. There is no rule that says that a potential X has

the same value as an X, or has all the rights of an X.

(Singer, Practical Ethics, 1993, p.153)

A similar line of argument based on potentiality of the fetus was given by Don Marquis. Marquis has given arguments against abortion on the basis of the future of value. He says,

The future of value theory bases the wrongness of killing on some property an individual will have, or would have, not ultimately on a property she actually has now... The wrongness of killing fetuses resides in their potentiality because the wrongness of killing YOU resides in your potentiality.

(Marquis, Singer on Abortion and Infanticide, 2009, p.147)

For Singer, one can abort a fetus for many a reason. Such an action may not deprive the world of a future rational and self-conscious being, but only postpones such an existence. In giving his view against the future of value theory, Singer points out that the claim that rational and self-conscious beings are intrinsically valuable does not entail that all abortions deprive the world of rational and self-conscious beings. Singer has given an example where abortion is not the deprivation of the world of a self-conscious and rational being. Singer asks if a woman who is two months pregnant, but

who has no children at present, should be considered immoral if she wants to abort her child by joining a mountain climbing expedition. The opponents of abortion may say it is morally a wrong decision because there is no case of the health of the mother being at risk; rather, the only concern is the enjoyment of the mother for mountain climbing. Singer differs with the opponents' view and argues that the decision need not be considered unethical. In this case the pregnancy is unwanted only because it is awkwardly timed. Singer says, "If abortion is wrong only because it deprives the world of a future person, this abortion is not wrong; it does no more than delay the entry of a person into the world" (Singer, Practical Ethics, 1993, p.154).

Going further in his argument against the future of value theory, Singer says that the future of value argument implies, "Not only that abortion is wrong, but that abstaining from sex that will probably result in conception is normally wrong, because both the abortion and the abstention from sex will cause one fewer valuable life to be lived" (Singer, Reply to Don Marquis, 2009, p.158). Continuing further, along the similar line, Singer argues with help from the scientific perspective as well. He argues that scientists have proven that it is possible to clone an animal. This indicates that cloning is possible of human beings as well. Singer argues that this fact indicates that billions of human cells have the potentiality to become an actual person. But no one has the obligation to save all the cells for becoming actual human beings (Singer, Abortion, The Dividing Line, 2007).

CRITICAL ANALYSIS OF SINGER'S POSITION

We have seen in the above passages how Singer tries to use the principle of sentience to include animals under the ambit of moral consideration, allowing that animals have the capacity to feel pleasure and pain. The principle of sentience is taken into consideration in policy making for animal experimentation. Jonathan Wolff reports on the UK Animals Act 1986, wherein is stated that any experiment on vertebrates needs prior approval.

*Under this Act any scientific procedure carried out on any living vertebrate animal, or one species of octopus (*Octopus Vulgaris*), which is likely to cause that animal pain, suffering, distress or lasting harm is a regulated procedure requiring licence authority.*

(Wolff, 2011, p.12)

In the UK no licence has been given for doing experiments on animals like chimpanzees and gorillas. Moreover, experiments are divided into categories such as mild, moderate and severe based on the nature of inducing pain in animals (Wolff, 2011). The principle of suffering thus acts as an important criterion for experimenting on animals. Singer, by using this principle of suffering, could thus argue for extending moral standing to animals, which, it is true, has resulted in a changed perception of the way we should treat and use animals.

Singer is very particular about employing reason in the ethical sphere. An ethical decision for him is that which is consistent with one's position. Singer believes that an action in the domain of ethics can become an ethical action if such an action is properly justified. Singer believes that employing reason and following its path makes for a better ethical position against an irrational moral code of conduct. In a recent work, Singer in response to Harry J. Gensler, remarks,

...as a philosopher I follow the argument where it leads. Should I, as a utilitarian, resist that urge, if the argument will lead me to say something counter-productive? That isn't so clear. Developing sound positions in ethics should, in the long run, have better consequences than doing bad philosophy, or refusing to discuss some issues for fear of losing influence on others.

(Singer, Practical Ethics, 1993)

True to his concern for reason in ethics, Singer followed the argument where it took him on the principle of sentience. The principle of sentience has led him to include animals in the consideration of moral standing. On the other hand, the principle of suffering led him to exclude the early fetus from moral standing even though that may have gone against traditional moral norms. We can see that as an outcome of his ethics, a situation is created where animals

are worthy of moral standing, but not the early fetus.

Singer's consistency is questioned by Laing and others when he tries to address the ethical issue in the context of animals and humans. Moreover, Singer's theory was criticised for its attempt to level up animals human status or to level down humans to animal status. Does it really matter if we speak of levelling up animals to human beings or levelling down humans to animals? Yes, it does matter, although both acknowledge a sense of equality.

When we say that animals are levelled up to humans, we acknowledge equality by extending certain features of the human being such as suffering and being sentient to animals. In fact, some higher forms of animals, apart from being sentient, display characteristics similar to humans such as the ability to reason, and the manner in which they socialise such as living in groups and having a community life, apart from being sentient. "Some animals are capable of higher cognitive capacities, or will by instinct live in groups" (Wolff, 2011, p.21). When we claim equality between animals and human beings by this idea of levelling up, we acknowledge the common characteristics that are available in humans and in animals.

On the other hand, when we say that humans can be levelled down to animals, we also acknowledge another sense of equality. But here, the implication fails to consider the dignity and superiority of humans. When Singer takes a bio-centric viewpoint, he perceives a kind of equality where he levels

down humans to animals. This is evident particularly when he talks of the status of the fetus.

It is true that Singer's voice and that of thinkers who agree with him have paid dividends to a certain extent against the rampant use of animals in experiments, but the rights now accorded to animals may not be to the desired level of these thinkers. Gensler points out that there are two phases of animal liberation in Singer's works.

Phase 1 was about reducing cruel experimentation on animals. This phase had much success, largely through the work of Singer and his follower Henry Spira (1927-1998)... Phase 2 of the animal liberation movement, which is about eating meat, has not had the same success. While there are more vegetarians and vegans than before, their numbers are small; the average consumption of meat has, if anything increased in the last thirty years.

(Gensler, 2009, pp.164-65)

Although certain segments of people express concern towards animals, still, animal killing and non-vegetarianism prevail. So, as Gensler remarked, Singer's phase I was effective by curtailing cruel practices in animal experimentation, but his Phase II is still a long way to go. Singer, in that sense, cannot assure complete protection for sentient animals, either legally or morally.

From the utilitarian point of view, Singer may find a problem in protecting animal rights. Singer points out the principle of suffering as the reason to consider animal beings as possessing moral standing. R.G. Frey, however, argues that though pain is relevant in discussing animal rights, it cannot be the central focus. He writes, "Of course pain is relevant to animals and the morality of what is done to them. But it is not, I want to suggest, the central focus of such a discussion, in the way it is made to be in *Animal Liberation*" (Frey, 2009, p.107). He adds, "Suppose one undertakes some medical experiment upon an animal that is entirely painless: is it wrong to undertake that experiment? If so, the infliction of pain will not establish the point." (Frey, 2009, p.107). Frey argues that if the issue of animal rights is based only on the principle of suffering, then that alone will not add value to animal life. The argument for animal welfare from the perspective of pain gets resolved if animals are killed painlessly. Lori Gruen observes, "If the animals live happy, stress free, natural lives before they are painlessly killed, the utilitarian may not object to their use as food (Gruen, *Animals*, 1994, p.349). Therefore, in the context of animals, Singer's position does not propagate for absolute rights to animals.

In the context of humans, Singer's ethics has not been well received. One obvious reason is that Singer's ethics tries to challenge the traditional or religion-based ethics. He rejects the 'sanctity of life' principle. Apart from that, the outcome of his principle of sentience has set the rights

of the potential human being, that is, the early fetus, as being subservient to the rights of the living human being, however trivial those rights may be. Singer's position with respect to the early fetus maybe a logical outcome of his position, but ethical discussions in terms of public policy do not operate purely on logic alone. "Whatever the power of one's arguments in terms of intellectual terms, it has to be accepted that public policy is not a sphere of pure reason" (Wolff, 2011, p.4). Singer's arguments on ethics seldom consider this issue although he often says that he is ready to go wherever his logic takes him in ethics. While one discusses ethics in public policy issues, an important point to be considered is whether that issue is widely shared by people. In the case of abortion, a widely accepted view is that a mother can abort a fetus if the life of the mother is at stake. But, on the other hand, is it a widely accepted case that parents can abort their fetus for any trivial reasons, even if the fetus is at its early stage of development? Singer's position on this issue goes against the traditionally accepted view.

Moreover, this outcome of Singer's ethics takes us to the broader picture of the purpose of ethics. Ethical thought aims at extending moral standing. The history of ethics is often associated with discussions on extending moral worthiness and moral standing. If we study the history of ethics, we will note that it often voices concerns of some of the then practices that promoted inequality and try to go against them. Generally, moral standing is given to human beings, but, seen historically, human beings

have not always been allowed due moral standing. In the ancient Greek and Roman periods, there were men who were kept as slaves, who therefore did not possess equal rights and moral standing as did citizens of the state. Aristotle said in his book *Politics*, "And indeed the use made of slaves and of tame animals is not very different; for both with their bodies minister to the needs of life" (Philosophers Justifying Slavery, 2012). Similarly, the deprivation of rights was very clear in the ancient Roman legal system, where a distinction between persons and non-persons was made in order to preclude a set of human beings (non-persons) from enjoying the rights and privileges given to others (persons). In the Roman legal system, only persons were entitled to legal rights. Slaves were not regarded as persons and they were regarded as property as they were not citizens of the state. Similar unequal treatment and practices have been carried out throughout history based on gender, caste, colour and race. Any ethical concern stands tall if it is able to extend moral standing with suitable justifications. An ethical perspective that broadens our outlook should augur well for humanity as a whole. If we see Singer's ethics from this perspective, the effectiveness of his ethics in extending moral concerns fails. His concerns for animals did try to extend moral concern, but his ethical principles in the human context fail. As aptly remarked by Laing,

The proposal that separates Singer from these other accounts is specifically that Singer is not merely

extending our ordinary concern for humans to animals. He is asking us to disregard our common humanity in any decision making about the vulnerable, the very young and the disabled.

(Laing, 1997)

The purpose of ethics is not to limit the scope of moral standing but rather to extend it. As Lillie points out, "...the chief value of ethics is not in the guidance it gives in particular cases, but in the development of width of outlook and seriousness of purpose in dealing with moral matters generally" (Lillie, 1994, p.19). In this aspect, Singer's theory falls short, particularly when he adopts the principle of suffering to the early fetus in the context of humans.

CONCLUSION

Singer tries to include animal beings under the ambit of moral consideration through the principle of suffering. This principle extends the scope of moral consideration to animals. At the same time, this principle excludes the early fetus, that is, the potential human being. Thus, it limits the scope of moral consideration to only living human beings. Singer's attempt to include moral standing to animals is yet to get legal protection, but he has opened up the issue of excluding some set of human beings for whom there may be legal protection. Singer's principle, perhaps, thus limits the scope of moral consideration instead of extending it.

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Scientific Method and Human Dignity in the Balance

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ABSTRACT

This paper is the third in a series exploring the strengths and weaknesses of Bloom's Taxonomy of Learning Objectives. The first paper (*Cracks in Bloom's Taxonomy at 60*) looked at ambiguities. My other paper (*What is the 'Whole Thing' ...?*) looked at potential upgrades and room for improvement. This article looks at the current damage being done in the hard sciences for lack of an adequate template of systematic learning. Two articles on Darwin's Theory of Evolution are scrutinised for the same ambiguities, vagueness and gaps in logic as are found in Bloom's Taxonomy. How, where and why the gaps should be *filled in* is presented in this article, and potential upgrades for Bloom's Taxonomy are illustrated with suggested examples and illustrations. The centerpiece of our article is a pair of articles from mainstream, accomplished and credible sources, *National Geographic* and the American Association for the Advancement of Science. Our argument is launched upon the equivocation and conflation between "descent with modification" and "natural selection."

Keywords: Bloom's Taxonomy, dignity, evolution, intelligent design, scientific method

INTRODUCTION

This article examines challenges to human dignity, reason and science posed by contemporary exponents of Darwinism. The objective here is not to disprove Darwinism but to promote objectivity itself,

to assess threats to objectivity posed by leading Darwinists and/or Neo-Darwinists, especially in the magazine *National Geographic* (NG), to illustrate the need for some revival of intellectual discourse with regard to objectivity, scientific method and taxonomies of learning, given the evident deterioration of objectivity in this very mainstream scientific discipline and in its pedagogy, and, finally, to develop and provide a rubric of systematic reasoning,

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in line with this author's earlier articles on learning taxonomies and scientific method, all in order to circumvent pseudo-science or "the path of ignorance." Like a two-part symphony, we expose the reality and then provide deep-healing by suggesting a fresh perspective and a refined methodology. The evasiveness of current Darwinian discourse must be seen to be believed; once seen, one must separate what it claims to prove from what it actually demonstrates; once the demonstration is over, we separate the car salesman from the car, and ask him to upgrade his seller's license, if at all possible.

MATERIALS AND METHODS

Darwinism: a theory of the origin and perpetuation of new species of animals and plants [and in short] that offspring of a given organism vary, that natural selection favors the survival of some of these variations over others, that new species have arisen and may continue to arise by these processes, and that widely divergent groups of plants and animals have arisen from the same ancestors.

Natural Selection: a natural process that results in the survival and reproductive success of individuals or groups best adjusted to their environment and that leads to the perpetuation of genetic qualities best suited to that particular environment.

(Merriam-Webster, 2003)

Our materials are mainstream definitions of Darwinism, like the one given above, often with attached rationales and allegedly supporting evidence. Our method is to compare the scope of the inherent claims with the vector of the evidence. Highlights of the above definition include the nuance that Darwin was not the only scientist contemplating potential modalities of evolution; hence, when one talks of Darwinian theory, something less sweeping in scope than generic evolution is at stake. Likewise, again referring to the quote, the specific *mechanism* of alleged evolution is the zone or dimension of Darwin's greatest contribution to posterity. Lastly, a distinction between micro-evolution and macro-evolution should be observed when talking about evolution, even though Darwin did not understand that definition as clearly as we do currently; that is to say, we must be sensitive to changes or adaptations within a species in addition to the leap or transformation from one species to another whenever we talk about mechanisms of evolution because it is the latter, called "macroevolution," that needs to be tied to Darwin's mechanism of natural selection, if one is to prove that Darwin was "right" or Darwinism is "true." The most salient distinction in this complex debate is stated here, again by a Darwinist (Bowler, 2003):

Charles Darwin's On the Origin of Species was successful in convincing most biologists that evolution had occurred, but was less successful in convincing them that

natural selection was its primary mechanism.

In separating logical arguments and attendant concept-formation, we have recourse to input from the science of logical fallacies, meaning that patent lying will be systematically isolated as such. Then, we will insert the logic of Bloom's Taxonomy of Learning Objectives (or an upgraded version of the same) in order to raise the bar in this debate, beyond fallacies.

STATE-OF-THE-ART DISCUSSION AND RESULTING HYPOTHESIS

We focus on two recent articles defending and promoting Darwinism in order to get at the heart of this issue. One was published by *National Geographic* (founded in 1888) and the other was published online by The American Association for the Advancement of Science (founded in 1848) in defense of a recent legal case against critics of *Darwinism*. Many will be surprised to find Darwinism 'fighting for its life' in the American courts. These articles exhibit archetypical Darwinist 'logic'. *National Geographic's* article was meant to be a full-scale defense of Darwinism in the face of American incredulity. The AAAS is likewise a very accomplished defender of mainstream scientific discourse. It categorically refuses public debate, and offers allegedly clear reasons why debate should be prevented. Let us unpack their vigorous, strident and uncompromising claims.

By the time my article went for publication, AAAS had withdrawn their

rebuttal of alternatives to Darwinism! Be that as it may, the AAAS article, which provides no author, and, therefore, allows the promoters to evade dialogue, states:

The risk, if intelligent design [or purposeful and directed evolution vs. random and accidental evolution] is incorporated into school curricula, is to undermine scientific credibility and the ability of young people to distinguish science from non-science.

(AAAS.ORG, 2012)

In this article, I would like to point out that the above quote certifies that Darwinian evolution is a lynchpin of contemporary scientific theory and methodology. Its author suggests that challenging Darwinism means challenging facts, truth and reason. *The National Geographic* article states the challenge in this way:

Two big ideas, not just one, are at issue: the evolution of all species, as a historical phenomenon, and natural selection, as the main mechanism causing that phenomenon. The first is a question of what happened. The second is a question of how. The idea that all species are descended from common ancestors had been suggested by other thinkers, including Jean-Baptiste Lamarck, long before Darwin....The gist of the concept is that small, random, heritable differences among individuals

result in different chances of survival and reproduction—success for some, death without offspring for others—and that this natural culling leads to significant changes in shape, size, strength, armament, color, biochemistry, and behavior among the descendants.[T]he supporting evidence is abundant, various, ever increasing, solidly interconnected, and easily available in museums, popular books, textbooks, and a mountainous accumulation of peer-reviewed scientific studies...

(Quammen, 2004)

One would expect the author of these statements to present evidence in support of Darwin when the title of the article is *Was Darwin Wrong?* – and when he claims to have at his disposal a “mountain” of evidence, and he speaks for the leading voice in the study of natural history. But here is what the author provides as reasons to believe in evolution:

Evolution is...[1] a beautiful concept and [2] an important one, [3] crucial...to human welfare, [4] crucial to...our understanding of the world [5] crucial to... medical science - [6] [the very thing which] gives meaning to biomedical research - [7] deeply persuasive—a theory you can take to the bank [8] [and it] involve[s] patterns that couldn't be explained

by coincidence. [9] Living creatures can [hereby] be easily sorted into a hierarchy of categories [10] [In fact, scientists] seem to have recorded a speciation event, or very nearly so, [11] [And] There's no better or more immediate evidence supporting the Darwinian theory than this process of forced transformation among our inimical germs.

(Quammen, 2004)

Note that only the last of the 11 points touches upon evidence possibly related to natural selection. Additionally, to unpack the rambling set of proclamations, one must at least recognise that the homology cited is a proof of descent-with-modification, not of natural selection. So we are back to square one.

Now, turning to the same set of arguments from AAAS (2012), we hear that

Very few scientists doubt that evolution happened, although there is lively ongoing inquiry about the details of how it happened... Intelligent design proponents may use the language of science, but they do not use its methodology. They have yet to propose meaningful tests for their claims... This is not about fairness. Science requires adherence to standards of research conduct and process. Intelligent design has not met those standards.

Two amazing background truths scream to be recognised in the context of this statement. Opposite the claim of lively debate about how evolution happened, there is no official public debate within the scientific establishment as to the verity of natural selection. Debate has been made illegal by the courts. The second obvious background scandal is the anonymity of the writer, in direct contradiction to the scientific standards he or she or they are demanding!

Casey Luskin (2012), in an online response to these claims of the scientific establishment, wrote

“Over 700 doctoral scientists have signed a public statement asserting their agreement that they “are skeptical of claims for the ability of random mutation and natural selection to account for the complexity of life.”

This is a powerful and germane statement on a number of counts. First, it is a cogent response to very simplistic proofs of natural selection, as that above, in National Geographic, leveraged singly by analogy to successful mutation in bacteria. Second, it is a testimony to a suppressed debate: There is no visible or prominent forum for the scientists in question. See the talk by Huston Smith (2010) at the Kenan Institute on the modalities of suppressed debate.

This brings us to the revolving door of authoritarianism and logical fallacies, and in particular, to the *post hoc* fallacy, “because

one thing follows another, it is held to cause it” (onegoodmove.org, 2012); here “because higher organisms came afterwards, they were caused by lower organisms.”

CONCLUSION

Summarising the claims of NG’s broadside defence of Darwinism, a pattern of shoddy reasoning emerges:

Appeal to Authority & Style over Substance: *People have not taken enough good biology courses.*

Anonymous Authority & Slippery Slope: *The mass media have not presented evolution clearly.*

Begging the Question: *Experts have not understood the mentality of the audience.*

Fallacy of Exclusion plus the Ad Hominem: *Religious fundamentalism is an ongoing threat.*

Prejudicial Language: *The beauty, usefulness and urgency of Darwinism has not been tabled.*

Appeal to Pity: *The competence of Darwinists has not been emphasised.*

Hasty Generalisation & Post Hoc: *Theories in the scientific community mean facts.*

Equivocation, Straw Dog & Unrepresentative Samples: *Almost all scientists accept evolution.*

A first impression of the claims could well be that the authors are insulting our intelligence, by discussing everything but relevant evidence. But as leaders of the scientific establishment, their offence is more serious still. For the sake of intellectual freedom, we must deconstruct their condescension, patent hubris, and thinly-veiled attempts at remote-control lobotomy of their lay audience, or congratulate them for their sleight of hand, if we belong to the cheering section.

In order to undermine the crude thinking which led to this quandary of contradictions, we will also have reference to our newly formulated grid of scientific method and learning taxonomy. In perfect alignment with Bloom’s Taxonomy, we have six aspects of cognitive learning, combined with one aspect of affective learning and one aspect of motor-sensory learning, together giving us these eight considerations (with caveats enumerated in earlier articles) as in Fig.1.

Stymying the Fallacies of Appeal to Authority & Style over Substance with True Reflection and Adaptation:

One aspect of human dignity is record-keeping, and this corresponds to Bloom’s hard skills, adaptation and reflection. In a thinly-veiled confession of bad record-keeping, when NG blames us *for not reading enough good textbooks*, it is their text books which do not meet the very standards they set. Reflection and adaptation on our part should lead us to reject the textbooks which they themselves reject if we want to preserve our dignity vis-à-vis good records and achieving hard skills. The pursuit of hard skills without a clear sense of reflection and adaptation has led to the current morass and impasse.

Stymying the Fallacies of Slippery Slope & Anonymous Authority with True Synthesis & Circumspect Conclusions:

Another aspect of human dignity is diversified labour, symbolised by the irreducibly complex organ formation. While NG blames the mainstream media for not

Observations & Research Parallels Bloom’s “Knowledge”(Info.)	Comprehension or Perspective-Formation Parallels Bloom’s “Comprehension”	Evaluation & Hypotheses Parallels Bloom’s “Evaluation”	Reflection & Adaptation Parallels Bloom’s “Motor Skills”
Analysis & Classification Parallels Bloom’s “Analysis”	The Application Process & Experimental Control Parallels Bloom’s “Application”	Synthesis & Drawing Conclusions Parallels Bloom’s “Synthesis”	Enterprise & Projection Parallels Bloom’s “Affective Domain”

Fig.1: Upgraded Version of Bloom’s Taxonomy

properly educating us, it neglects to mention that the mainstream media is an organ of NG science. They inveigh that the mainstream media are a slippery slope, but it is a slippery slope of their creation.

Stymying the Fallacy of Begging the Question with True Analysis and Classification:

When NG complains that too often scientists overlook that Americans do not know *Darwinism* as a fact, but a theory, again it is their scientists who ostensibly are not teaching this point clearly. “Out of touch with reality” takes on two meanings here i.e. from the perspective of the observer and the observed. If Bloom had connected classification to analysis, scientists might have appreciated the gulf that appeared between inorganic and organic material when DNA was discovered in the 1950s. Even if we today connected classification to analysis, we would label people who could not separate fact from belief as “non-scientists” unless we chose to remove the dignity of objectivity itself, which is the dignity of the human intellect.

Stymying Exclusionary & Ad Hominem Fallacies with Proper Projection and Enterprise:

When NG and its legions exclude fundamentalists from scientific debate, they preclude the affective and symbolic dimensions of meaning in the Big Bang theory from becoming legitimate material for debate, even while affectively and symbolically claiming to “only let the facts speak for themselves”. Symbolism is

part of human dignity, and to selectively and artificially deny that option in our thinking is to undermine dignity. Maybe Bloom practitioners focus on Coat of Arms precluded such an all-embracing scope of meaning for symbolism, and in particular, suggestive, transcendent symbolism.

Stymying the Fallacy of Prejudicial Language with Proper Hypotheses and Evaluation

When NG insists that *Darwinism* is extremely “useful,” it conflates hypothesis with evaluation, as we likewise see in the example of mutation being credited as the sole mechanism for new DNA, whence cause is conflated with effect (also called “circular reasoning”), and hypothesis is obviated. If only Bloom had said, “hypothesize when you evaluate” and allowed for a hierarchy of values, from relative to absolute, which is part of human dignity.

Stymying the Fallacy of Appeal to Pity with Proper Application and Experimental Control

Another aspect of human dignity is noble promotion or promotion by merit. When NG suggests that the **competence** of Darwinists has not been properly appreciated, the cat is really out of the hat, in terms of its baseless self-promotion.

Many good scientists have pointed out that Darwinian evolution is not falsifiable. (conservapedia.com, falsifiability_of_evolution, 2012). Why should we promote scientists just because they have a nice description – in their eyes – of what went on? Conversely, how many experiments of

Darwinists have failed, like the repeated attempts to make living material in a bottle of soup, in the ever-shifty and now infamous Miller-Urey experiment (Shapiro, 1986). If failures do not count in the realm of *Darwinism*, then there is no experimental control, and we are nowhere. Bloom's open-ended "application" without experimental control could be faulted here.

Styming the Fallacies of Hasty Generalization & Post Hoc with True Perspective-Formation and Comprehension

Another aspect of human dignity is technical leveraging, meaning the human ability to develop a wide variety of tools. By contrast, the Darwinists pretend that the essence of science and humanity is but the corroboration or concatenation of facts, in a very one-dimensional fashion, that of "straight facts" which are really time-sequences. Bloom may be to blame for having equated information with perspective-formation in his "knowledge." His taxonomy, as it stands, lacks a sense of "the big picture," the combined leverage of information (or its absence) and the symbolic progress theoretically linked to it, which many call or consider "spiritual power."

Styming the Fallacies of Equivocation, Straw Dog & Unrepresentative Samples with True Observations and Research:

When NG says, "Almost all scientists accept that **evolution happened**," they don't define which evolution it is that is being accepted. Does it mean "a change in life-forms" or

the mechanism of that change or both? Also, which life-forms are being referred to? This is the crux of our whole discussion. It is Bloom's disembodied information (in contrast to systematic research) which enabled this ambiguity to grow. Newman, Bloom, Phillips and Studenroth point out:

While it gives us the feeling that a "grand unification" has been achieved, it may lead us to overlook problems in one of these [multifarious sub-] theories by encouraging us to think that evidence for one is really evidence for the other.

In other words, when our methodology deteriorates into rash judgment, it is no longer scientific *per se*, at least not for scientists with an uplifting, and, therefore, real, sense of dignity, a sense of what it means to be uniquely human and therefore of higher intelligence; nay, they preclude the very possibility of meaningful change, which is the essence of the human spirit, or of meaningful growth.

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**REFEREES FOR THE PERTANIKA
JOURNAL OF SOCIAL SCIENCES AND HUMANITIES**

VOL. 22(S) MAR. 2014

Special Issue: Integrating Values with Science, Engineering and Technology

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Pertanika

Our goal is to bring high quality research to the widest possible audience

Journal of Social Sciences and Humanities

INSTRUCTIONS TO AUTHORS (Manuscript Preparation & Submission Guidelines)

Revised: February 2013

*We aim for excellence, sustained by a responsible and professional approach to journal publishing.
We value and support our authors in the research community.*

Please read the guidelines and follow these instructions carefully; doing so will ensure that the publication of your manuscript is as rapid and efficient as possible. The Editorial Board reserves the right to return manuscripts that are not prepared in accordance with these guidelines.

About the Journal

Pertanika is an international peer-reviewed journal devoted to the publication of original papers, and it serves as a forum for practical approaches to improving quality in issues pertaining to tropical agriculture and its related fields. *Pertanika* began publication in 1978 as Journal of Tropical Agricultural Science. In 1992, a decision was made to streamline *Pertanika* into three journals to meet the need for specialised journals in areas of study aligned with the interdisciplinary strengths of the university. The revamped Journal of Social Sciences & Humanities (JSSH) aims to develop as a pioneer journal for the Social Sciences with a focus on emerging issues pertaining to the social and behavioural sciences as well as the humanities, particularly in the Asia Pacific region. Other *Pertanika* series include Journal of Tropical Agricultural Science (JTAS); and Journal of Science and Technology (JST).

JSSH is published in **English** and it is open to authors around the world regardless of the nationality. It is currently published four times a year i.e. in **March, June, September and December**.

Goal of *Pertanika*

Our goal is to bring the highest quality research to the widest possible audience.

Quality

We aim for excellence, sustained by a responsible and professional approach to journal publishing. Submissions are guaranteed to receive a decision within 12 weeks. The elapsed time from submission to publication for the articles averages 5-6 months.

Indexing of *Pertanika*

Pertanika is now over 33 years old; this accumulated knowledge has resulted *Pertanika* JSSH being indexed in SCOPUS (Elsevier), EBSCO, Thomson (ISI) Web of Knowledge [CAB Abstracts], DOAJ, Google Scholar, ISC, Citefactor, Rubriq and MyAIS.

Future vision

We are continuously improving access to our journal archives, content, and research services. We have the drive to realise exciting new horizons that will benefit not only the academic community, but society itself.

We also have views on the future of our journals. The emergence of the online medium as the predominant vehicle for the 'consumption' and distribution of much academic research will be the ultimate instrument in the dissemination of research news to our scientists and readers.

Aims and scope

Pertanika Journal of Social Sciences & Humanities aims to develop as a pioneer journal for the social sciences with a focus on emerging issues pertaining to the social and behavioural sciences as well as the humanities. Areas relevant to the scope of the journal include Social Sciences—Accounting, anthropology, Archaeology and history, Architecture and habitat, Consumer and family economics, Economics, Education, Finance, Geography, Law, Management studies, Media and communication studies, Political sciences and public policy, Population studies, Psychology, Sociology, Technology management, Tourism; Humanities—Arts and culture, Dance, Historical and civilisation studies, Language and Linguistics, Literature, Music, Philosophy, Religious studies, Sports.

Editorial Statement

Pertanika is the official journal of Universiti Putra Malaysia. The abbreviation for *Pertanika* Journal of Social Sciences & Humanities is *Pertanika J. Soc. Sci. Hum.*

Guidelines for Authors

Publication policies

Pertanika policy prohibits an author from submitting the same manuscript for concurrent consideration by two or more publications. It prohibits as well publication of any manuscript that has already been published either in whole or substantial part elsewhere. It also does not permit publication of manuscript that has been published in full in Proceedings. Please refer to *Pertanika*'s **Code of Ethics** for full details.

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Authors are notified on receipt of a manuscript and upon the editorial decision regarding publication.

Manuscript review: Manuscripts deemed suitable for publication are sent to the Editorial Board members and/or other reviewers. We encourage authors to suggest the names of possible reviewers. Notification of the editorial decision is usually provided within to eight to ten weeks from the receipt of manuscript. Publication of solicited manuscripts is not guaranteed. In most cases, manuscripts are accepted conditionally, pending an author's revision of the material.

Author approval: Authors are responsible for all statements in articles, including changes made by editors. The liaison author must be available for consultation with an editor of *The Journal* to answer questions during the editorial process and to approve the edited copy. Authors receive edited typescript (not galley proofs) for final approval. Changes **cannot** be made to the copy after the edited version has been approved.

Manuscript preparation

Pertanika accepts submission of mainly four types of manuscripts. Each manuscript is classified as **regular** or **original** articles, **short communications**, **reviews**, and proposals for **special issues**. Articles must be in **English** and they must be competently written and argued in clear and concise grammatical English. Acceptable English usage and syntax are expected. Do not use slang, jargon, or obscure abbreviations or phrasing. Metric measurement is preferred; equivalent English measurement may be included in parentheses. Always provide the complete form of an acronym/abbreviation the first time it is presented in the text. Contributors are strongly recommended to have the manuscript checked by a colleague with ample experience in writing English manuscripts or an English language editor.

Linguistically hopeless manuscripts will be rejected straightaway (e.g., when the language is so poor that one cannot be sure of what the authors really mean). This process, taken by authors before submission, will greatly facilitate reviewing, and thus publication if the content is acceptable.

The instructions for authors must be followed. Manuscripts not adhering to the instructions will be returned for revision without review. Authors should prepare manuscripts according to the guidelines of *Pertanika*.

1. Regular article

Definition: Full-length original empirical investigations, consisting of introduction, materials and methods, results and discussion, conclusions. Original work must provide references and an explanation on research findings that contain new and significant findings.

Size: Should not exceed 5000 words or 8-10 printed pages (excluding the abstract, references, tables and/or figures). One printed page is roughly equivalent to 3 type-written pages.

2. Short communications

Definition: Significant new information to readers of the Journal in a short but complete form. It is suitable for the publication of technical advance, bioinformatics or insightful findings of plant and animal development and function.

Size: Should not exceed 2000 words or 4 printed pages, is intended for rapid publication. They are not intended for publishing preliminary results or to be a reduced version of Regular Papers or Rapid Papers.

3. Review article

Definition: Critical evaluation of materials about current research that had already been published by organizing, integrating, and evaluating previously published materials. Re-analyses as meta-analysis and systemic reviews are encouraged. Review articles should aim to provide systemic overviews, evaluations and interpretations of research in a given field.

Size: Should not exceed 4000 words or 7-8 printed pages.

4. Special issues

Definition: Usually papers from research presented at a conference, seminar, congress or a symposium.

Size: Should not exceed 5000 words or 8-10 printed pages.

5. Others

Definition: Brief reports, case studies, comments, Letters to the Editor, and replies on previously published articles may be considered.

Size: Should not exceed 2000 words or up to 4 printed pages.

With few exceptions, original manuscripts should not exceed the recommended length of 6 printed pages (about 18 typed pages, double-spaced and in 12-point font, tables and figures included). Printing is expensive, and, for the Journal, postage doubles when an issue exceeds 80 pages. You can understand then that there is little room for flexibility.

Long articles reduce the Journal's possibility to accept other high-quality contributions because of its 80-page restriction. We would like to publish as many good studies as possible, not only a few lengthy ones. (And, who reads overly long articles anyway?) Therefore, in our competition, short and concise manuscripts have a definite advantage.

Format

The paper should be formatted in one column format with at least 4cm margins and 1.5 line spacing throughout. Authors are advised to use Times New Roman 12-point font. Be especially careful when you are inserting special characters, as those inserted in different fonts may be replaced by different characters when converted to PDF files. It is well known that 'µ' will be replaced by other characters when fonts such as 'Symbol' or 'Mincho' are used.

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We recommend that authors prepare the text as a **Microsoft Word** file.

1. Manuscripts in general should be organised in the following order:

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- **Page 2: Author(s) and Corresponding author information.** This page should contain the **full title** of your paper with name(s) of all the authors, institutions and corresponding author's name, institution and full address (Street address, telephone number (including extension), hand phone number, fax number and e-mail address) for editorial correspondence. The names of the authors **must** be abbreviated following the international naming convention. e.g. Salleh, A.B., Tan, S.G., or Sapuan, S.M.

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George Swan¹ and Nayan Kanwal²

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²Office of the Deputy Vice Chancellor (R&I), Universiti Putra Malaysia, Serdang, Malaysia.

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For review, you may attach low-resolution figures, which are still clear enough for reviewing, to keep the file of the manuscript under 5 MB. Illustrations may be produced at extra cost in colour at the discretion of the Publisher; the author could be charged Malaysian Ringgit 50 for each colour page.

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Swan and Kanwal (2007) reported that ...

The results have been interpreted (Kanwal *et al.*, 2009).

- References should be listed in alphabetical order, by the authors' last names. For the same author, or for the same set of authors, references should be arranged chronologically. If there is more than one publication in the same year for the same author(s), the letters 'a', 'b', etc., should be added to the year.
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 - Hawe, P. (2005). Capturing the meaning of "community" in community intervention evaluation: Some contributions from community psychology. *Health Promotion International*, 9, 199-210.
 - Braconier, H., & Ekholm, K. (2006). Swedish multinationals and competition from high and low wage location. *Review of International Economics*, 8, 448-461.
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7. **Examples of other reference citations:**

Monographs: Kalimapur, Y.R. (2004). *Images of the U.S. Around the World: A Multicultural Perspective*. Albany, NY: State University of New York Press.

Chapter in Book: Bjork, R. A. (2007). Retrieval inhibition as an adaptive mechanism in human memory. In H. L. Roediger III & F. I. M. Craik (Eds.), *Varieties of memory & consciousness* (pp. 309-330). Hull: Hull University Press.

- **Proceedings:** Amir Awang. (2006). Counseling, human resources development and counseling services. In Sulaiman M. Yassin, Yahya Mat Hassan, Kamariah Abu Bakar, Esah Munji and Sabariah Mohd. Rashid (Eds.), *Proceedings of Asia Pacific Conference on Human Development* (p. 243-246). Serdang: Universiti Putra Malaysia.

8. **Short Communications** should include **Introduction, Materials and Methods, Results and Discussion, Conclusions** in this order. Headings should only be inserted for Materials and Methods. The abstract should be up to 100 words, as stated above. Short Communications must be 5 printed pages or less, including all references, figures and tables. References should be less than 30. A 5 page paper is usually approximately 3000 words plus four figures or tables (if each figure or table is less than 1/4 page).

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STYLE OF THE MANUSCRIPT

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All articles submitted to the journal **must comply** with these instructions. Failure to do so will result in return of the manuscript and possible delay in publication.

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The cover letter of the paper should contain (i) the title; (ii) the full names of the authors; (iii) the addresses of the institutions at which the work was carried out together with (iv) the full postal and email address, plus facsimile and telephone numbers of the author to whom correspondence about the manuscript should be sent. The present address of any author, if different from that where the work was carried out, should be supplied in a footnote.

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Pertanika follows a **double-blind peer-review** process. Peer reviewers are experts chosen by journal editors to provide written assessment of the **strengths** and **weaknesses** of written research, with the aim of improving the reporting of research and identifying the most appropriate and highest quality material for the journal.

In the peer-review process, three referees independently evaluate the scientific quality of the submitted manuscripts. Authors are encouraged to indicate in the **Referral form** using the **Manuscript Submission Kit** the names of three potential reviewers, but the editors will make the final choice. The editors are not, however, bound by these suggestions..

Manuscripts should be written so that they are intelligible to the professional reader who is not a specialist in the particular field. They should be written in a clear, concise, direct style. Where contributions are judged as acceptable for publication on the basis of content, the Editor reserves the right to modify the typescripts to eliminate ambiguity and repetition, and improve communication between author and reader. If extensive alterations are required, the manuscript will be returned to the author for revision.

The Journal's review process

What happens to a manuscript once it is submitted to *Pertanika*? Typically, there are seven steps to the editorial review process:

1. The executive editor and the editorial board examine the paper to determine whether it is appropriate for the journal and should be reviewed. If not appropriate, the manuscript is rejected outright and the author is informed.
2. The executive editor sends the article-identifying information having been removed, to three reviewers. Typically, one of these is from the Journal's editorial board. Others are specialists in the subject matter represented by the article. The executive editor asks them to complete the review in three weeks and encloses two forms: (a) referral form B and (b) reviewer's comment form along with reviewer's guidelines. Comments to authors are about the appropriateness and adequacy of the theoretical or conceptual framework, literature review, method, results and discussion, and conclusions. Reviewers often include suggestions for strengthening of the manuscript. Comments to the editor are in the nature of the significance of the work and its potential contribution to the literature.
3. The executive editor, in consultation with the editor-in-chief, examines the reviews and decides whether to reject the manuscript, invite the author(s) to revise and resubmit the manuscript, or seek additional reviews. Final acceptance or rejection rests with the Editorial Board, who reserves the right to refuse any material for publication. In rare instances, the manuscript is accepted with almost no revision. Almost without exception, reviewers' comments (to the author) are forwarded to the author. If a revision is indicated, the editor provides guidelines for attending to the reviewers' suggestions and perhaps additional advice about revising the manuscript.
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.
7. If the decision is to accept, the paper is sent to that Press and the article should appear in print in approximately three months. The Publisher ensures that the paper adheres to the correct style (in-text citations, the reference list, and tables are typical areas of concern, clarity, and grammar). The authors are asked to respond to any queries by the Publisher. Following these corrections, page proofs are mailed to the corresponding authors for their final approval. At this point, only essential changes are accepted. Finally, the article appears in the pages of the Journal and is posted on-line.

English language editing

Pertanika **emphasizes** on the linguistic accuracy of every manuscript published. Thus all authors are required to get their manuscripts edited by **professional English language editors**. Author(s) **must provide a certificate** confirming that their manuscripts have been adequately edited. A proof from a recognised editing service should be submitted together with the cover letter at the time of submitting a manuscript to Pertanika. **All costs will be borne by the author(s)**.

This step, taken by authors before submission, will greatly facilitate reviewing, and thus publication if the content is acceptable.

Author material archive policy

Authors who require the return of any submitted material that is rejected for publication in the journal should indicate on the cover letter. If no indication is given, that author's material should be returned, the Editorial Office will dispose of all hardcopy and electronic material.

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BACKGROUND

Pertanika began publication in 1978 as the Journal of Tropical Agricultural Science (JTAS).

In 1992, a decision was made to streamline *Pertanika* into **3 journals**. i.e.,

1. Journal of Tropical Agricultural Science (JTAS)
2. Journal of Science and Technology (JST)
3. **Journal of Social Sciences and Humanities (JSSH)**

BENEFITS TO AUTHORS

PROFILE: *Pertanika* publishes original academic articles rapidly. It is fully committed to the Open Access Initiative and provides free access to all articles as soon as they are published.

QUALITY: Articles submitted to *Pertanika* undergo rigid originality checks. Our double-blind peer review procedures are fair and open.

AUTHOR SERVICES: We ensure that your work reaches the widest possible audience in print and online rapidly. Submissions are through **ScholarOne** system by Thomson Reuters.

SUBMISSION GUIDELINES

The Journal accepts articles as **regular, short communication** or **review papers**.

The article should include the following:

- An abstract of not more than 300 words;
- Up to 8 related keywords;
- Name(s), Institutional affiliation(s) and email(s) of each author.
- The maximum length of your article must not exceed:
 - approximately 6000 words or 27 pages, including abstract, diagrams tables and references for full research papers,
 - 2000 words for short communication papers, or
 - 4000 words for review papers
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