



**UNIVERSITI PUTRA MALAYSIA**

***RELATIONSHIP BETWEEN INTEGRATED LIVING SKILLS TEACHERS'  
CREATIVE CHARACTERISTICS AND SCHOOL CREATIVE CLIMATE  
WITH THEIR CRITICAL AND CREATIVE THINKING TEACHING  
PRACTICES***

**GAJATHISWARI A/P VEJIAN**

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UNIVERSITI PUTRA MALAYSIA  
BERILMU BERBAKTI

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PRACTICES**

By

**GAJATHISWARI A/P VEJIAN**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra  
Malaysia, in Fulfilment of the Requirements for the Degree of Master of Science**

**November 2014**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

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By

**GAJATHISWARI A/P VEJIAN**

**November 2014**

**Chairman: Nurzatulshima Bt. Kamarudin, PhD**  
**Faculty: Educational Studies**

Teachers have a major role to play in fostering creativity in their students by creating good teaching instructions. Teachers' own creativity characteristics and the school creative climate that is challenging and supportive also needed for the teachers to come up with their best quality of creative work. It is said that students' creative thinking depends upon effective critical and creative thinking teaching practices from their teachers.

This study aims to identify the Integrated Living Skills (ILS) teachers' critical and creative thinking teaching practices, to identify the ILS teachers' creativity characteristics and the school creative climate. In addition, this study also aims to identify the relationship between creativity characteristics and school creative climate with critical and creative thinking teaching practices. The sample for the study comprised 274 ILS teachers from 38 secondary schools in the state of Selangor chosen by random sampling.

This study is quantitative survey approach using questionnaires. The Creativity characteristics Questionnaire (CSQ) by Kumar, Kemmler and Holman (1997) was used to measure the ILS teachers' creativity characteristics. For school creative climate, the instruments used is School Creativity Climate Questionnaire by Omenyi, Agu and Odimegwu (2009) and The Teacher Checklist for Creative Thinking Instruction by Hamza and Griffith (2006) is used to measure the ILS teachers' critical and creative thinking teaching practices.

Data was elicited through questionnaires and subjected to a means, standard deviation and Pearson Correlation analysis. The finding shows that ILS teachers often ( $M=4.00$ ,  $SD=.44$ ) use critical and creative thinking teaching practices in their

classroom. The teachers also somewhat agree ( $M=3.21$ ,  $SD=.31$ ) that they use their creativity characteristics to engage in their creative work and the secondary schools often ( $M=3.44$ ,  $SD=.33$ ) encourage and motivate the ILS teachers to create creative climate.

The finding also indicates that there is a significant low, positive correlation between the ILS teachers' creativity characteristics with critical and creative thinking teaching practices [ $r(274) = 0.324$ ,  $p < .01$ ]. The Pearson Correlation analysis also shows that there is a significant moderate, positive relationship between the school creative climate with critical and creative thinking teaching practices [ $r(274) = 0.528$ ,  $p < .01$ ].

The results of this study supported the importance of the match between teachers' creativity characteristics, school creative climate and critical and creative thinking teaching practices. It is suggested to encourage ILS teachers to attend courses or training on how to improve their creativity characteristics and their teaching practices. School administrators also should take some effort in improving school creative climate.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**HUBUNGAN ANTARA CIRI-CIRI KREATIVITI GURU KEMAHIRAN HIDUP DAN PERSEKITARAN SEKOLAH KREATIF DENGAN AMALAN PENGAJARAN KEMAHIRAN BERFIKIR SECARA KRITIS DAN KREATIF**

Oleh

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Guru mempunyai peranan utama dalam memupuk kreativiti pelajar dengan merancang strategi pengajaran dan pembelajaran yang baik. Ciri-ciri kreativiti guru dan persekitaran kreatif sekolah yang mencabar dan memberi sokongan diperlukan oleh seseorang guru untuk menghasilkan kualiti kerja yang kreatif. Dikatakan bahawa pemikiran kreatif pelajar bergantung kepada pengajaran yang berkesan dari guru.

Kajian ini bertujuan untuk mengenalpasti amalan pengajaran kemahiran berfikir secara kritis dan kreatif di kalangan guru-guru Kemahiran Hidup Bersepadu (KHB), ciri-ciri kreativiti guru-guru KHB dan persekitaran kreatif sekolah. Di samping itu, kajian ini juga bertujuan untuk mengenal pasti hubungan antara ciri-ciri kreativiti dan persekitaran kreatif sekolah dengan amalan pengajaran kemahiran berfikir secara kritis dan kreatif. Sampel kajian ini terdiri daripada 274 orang guru KHB daripada 38 buah sekolah menengah di negeri Selangor yang dipilih secara rawak.

Kajian ini adalah pendekatan kajian kuantitatif dengan menggunakan soal selidik. Instrumen *The Creativity characteristics Questionnaire* oleh Kumar, Kemmler dan Holman (1997) telah digunakan untuk mengukur ciri-ciri kreativiti guru. Untuk persekitaran kreatif sekolah, instrumen *School Creativity Climate* oleh Omenyi, Agu dan Odimegwu (2009) telah digunakan dan *The Teacher Checklist for Creative Thinking Instruction* oleh Hamza and Griffith (2006) telah digunakan untuk mengukur amalan pengajaran kemahiran berfikir secara kritis dan kreatif.

Data telah dikutip melalui soal selidik dan analisis min, sisihan piawai dan korelasi Pearson digunakan. Dapatan kajian menunjukkan guru-guru KHB kerap ( $M=4.00$ ,  $SD=.44$ ) mengamalkan amalan pengajaran kemahiran berfikir secara kritis dan kreatif. Guru-guru juga agak bersetuju ( $M=3.21$ ,  $SD=.31$ ) bahawa mereka menggunakan ciri-ciri kreativiti mereka untuk melibatkan diri dalam kerja-kerja

kreatif dan sekolah menengah juga kerap ( $M=3.44$ ,  $SD=.33$ ) menggalakkan dan memberi motivasi kepada guru-guru KHB untuk mewujudkan iklim kreatif.

Dapatan kajian menunjukkan bahawa terdapat hubungan kecil yang positif antara ciri-ciri kreativiti guru KHB dengan amalan pengajaran kemahiran berfikir secara kritis dan kreatif [ $r(274) = 0.324$ ,  $p < .01$ ]. Analisis korelasi Pearson juga menunjukkan bahawa terdapat hubungan yang sederhana kuat yang positif antara persekitaran kreatif sekolah dengan amalan pengajaran kemahiran berfikir secara kritis dan kreatif [ $r(274) = 0.528$ ,  $p < .01$ ].

Dapatan kajian ini menyokong kepentingan hubungan antara ciri-ciri kreativiti guru, persekitaran sekolah kreatif dan amalan pengajaran kemahiran berfikir secara kritis dan kreatif. Berdasarkan dapatan kajian ini, adalah dicadangkan agar guru-guru KHB digalakkan untuk menghadiri kursus atau latihan untuk memperbaiki ciri-ciri kreativiti dan amalan pengajaran mereka. Pentadbir sekolah juga perlu mengambil beberapa usaha dalam menambah baik persekitaran kreatif sekolah.

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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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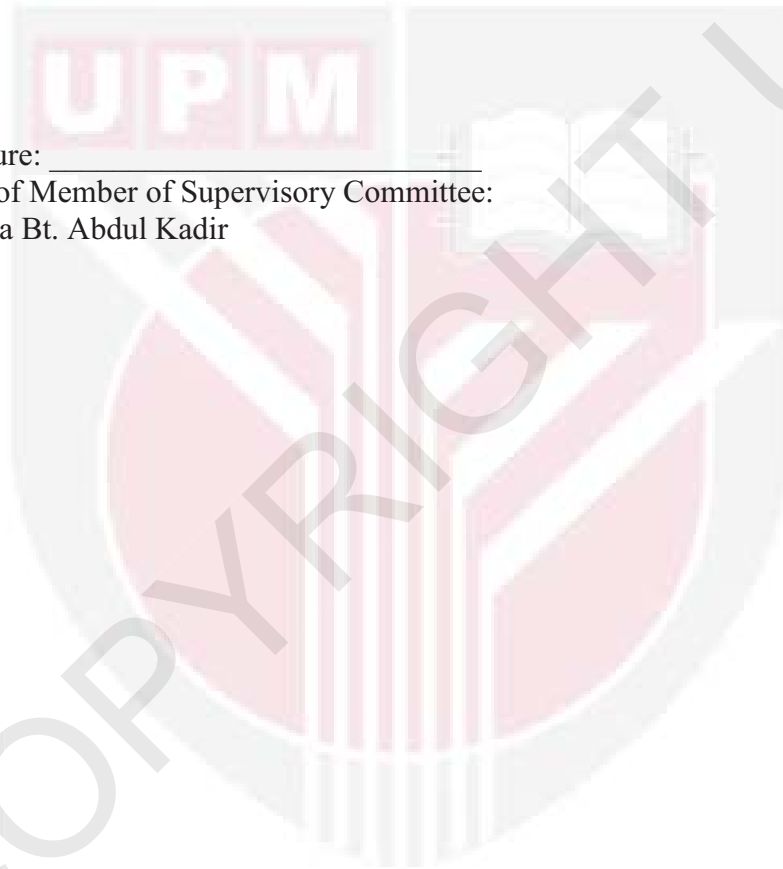
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## TABLE OF CONTENT

	<b>Page</b>
<b>ABSTRACT</b>	i
<b>ABSTRAK</b>	iii
<b>ACKNOWLEDGEMENTS</b>	v
<b>APPROVAL</b>	vi
<b>DECLARATION</b>	viii
<b>LIST OF TABLES</b>	xii
<b>LIST OF FIGURES</b>	xiv
<b>LIST OF ABBREVIATIONS</b>	Xv
<b>CHAPTER</b>	
<b>1 INTRODUCTION</b>	
1.1 Background of the study	1
1.2 Problem Statement	3
1.3 Objectives of the study	5
1.4 Research Questions	5
1.5 Significance of the study	5
1.6 Scope and Limitation	6
1.7 Operational Definition	6
1.8 Summary	8
<b>2 LITERATURE REVIEW</b>	
2.1 Critical and creative thinking teaching practices	9
2.2 Creative Thinking Sills in Integrated Living Skills Curriculum	16
2.3 Ecliptical Interaction Model for Critical dan creative thinking teaching practices	18
2.4 Creativity characteristics	19
2.5 Theory of Creative Individual Action	23
2.6 School Creative Climate	25
2.7 Organizational Climate Model	27
2.8 Relationship between Teachers' Creativity characteristics and Critical and creative thinking teaching practices	30
2.9 Relationship between School Creative Climate and Critical and creative thinking teaching practices	31
2.10 4P+N Model of Creativity	32
2.11 Research framework	34
2.12 Summary	34
<b>3 METHODOLOGY</b>	
3.1 Introduction	35
3.2 Research Design	35
3.3 Population and Sampling	35
3.4 Instrumentation	38
3.5 Validity and Reliability	41
3.6 Pilot Test	42
3.7 Data Collection	43

3.8	Data Analysis	44
3.9	Summary	46
<b>4</b>	<b>RESULTS</b>	
4.1	Introduction	47
4.2	Respondents' Demographic Profile	47
4.2	Critical dan Creative Thinking Teaching Practices	48
4.4	Teachers' Creativity Characteristics	51
4.5	School Creative Climate	56
4.6	Relationship between ILS Teachers' Creativity Characteristics and Critical	61
4.7	Relationship between Secondary School Creative Climate and Critical dan Creative Thinking Skills Practices	62
4.8	Summary	63
<b>5</b>	<b>SUMMARY, DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS</b>	
5.1	Introduction	64
5.2	Summary	64
5.3	Discussion	66
5.3.1	Critical and creative thinking teaching practices	66
5.3.2	Creativity characteristics	67
5.3.3	School Creative Climate	68
5.3.4	Relationship between Creativity characteristics and Critical and creative thinking teaching practices	70
5.3.5	Relationship between School Creative Climate and Critical and creative thinking teaching practices	71
5.4	Implications and Recommendations	71
5.5	Recommendations for future studies	74
5.6	Conclusion	74
	<b>BIBLIOGRAPHY</b>	76
	<b>APPENDICES</b>	84
	<b>BIODATA OF STUDENT PUBLICATION</b>	113
		114

## LIST OF TABLES

<b>Table</b>	<b>Page</b>
--------------	-------------

3.1	Proportional percentage and number of teachers by districts	37
3.2	Distribution of respondents by school in each district of Selangor	37
3.3	Distribution of Items and number of questions on each section	38
3.4	Distribution of items for Creativity Style Questionnaire	39
3.5	Distribution of items for Creative School Climate Questionnaire	40
3.6	Distribution of items for Teacher Checklist for Creative Thinking Instruction	41
3.7	Distribution of respondents by school for pilot test	42
3.8	Reliability of the Critical and creative thinking teaching practices instrument	43
3.9	Skewness and Kurtosis for each variable	44
3.10	Interpretation of the mean scale for creativity characteristics	44
3.11	Interpretation of the mean scale for School Creative Climate and Critical and Creative Thinking Teaching Practices	45
3.12	Magnitude of Relationship	45
3.13	Types of Data Analysis Conducted	46
4.1	Distribution of Respondents based on Demographic Characteristics	48
4.2	Distribution of Scores across Subscales of Critical and creative thinking teaching practices	48
4.3	Distribution of numbers and percentage of respondents for Classroom Management/Learning Atmosphere practice	49
4.4	Distribution of numbers and percentage of respondents for Support of Different Ideas and Divergent Thinking practice	50
4.5	Distribution of numbers and percentage of respondents for Lesson Organization and Content practice	50
4.6	Distribution of numbers and percentage of respondents for Support of Exploration and Experimentation practice	51
4.7	Distribution of Scores across Subscales of Creativity characteristics	52
4.8	Distribution of numbers and percentage of respondents for Use of Techniques subscales	52
4.9	Distribution of numbers and percentage of respondents for Use of Other People subscale	53
4.10	Distribution of numbers and percentage of respondents for Use of The Senses subscale	54
4.11	Distribution of numbers and percentage of respondents for Belief in Unconscious Processes subscale.	54
4.12	Distribution of numbers and percentage of respondents for Final Product Orientation subscale.	55
4.13	Distribution of numbers and percentage of respondents for Environmental Control/Behavioural Self-Regulation subscale	56
4.14	Distribution of Scores across Subscales of School Creative Climate	57
4.15	Distribution of numbers and percentage of respondents for Idea Support subscale	57
4.16	Distribution of numbers and percentage of respondents for Freedom subscale	58
4.17	Distribution of numbers and percentage of respondents for Debate subscale	58
4.18	Distribution of numbers and percentage of respondents for Trust and Openness subscale	59
4.19	Distribution of numbers and percentage of respondents for Challenge subscale	59
4.20	Distribution of numbers and percentage of respondents for Risk Taking subscale	60
4.21	Distribution of numbers and percentage of respondents for Playfulness and Humour subscale	60

4.22	Distribution of numbers and percentage of respondents for Idea Time subscale	61
4.23	Correlation between Creativity characteristics subscales with Teaching for Creativity	62
4.24	Correlation between School Creative Climate subscales with Teaching for Creativity	63



## LIST OF FIGURES

**Figure**

**Page**



2.1	Ecliptival Interaction Model	19
2.2	Processes in Theory of Creative Individual Action	24
2.3	The sequences that hypothesizes a person's behaviour in an organization	28
2.4	4P + N Model of Creativity	32
2.5	Research Framework	32



## LIST OF ABBREVIATIONS

CSQ	Creativity characteristics Questionnaire
EPRD	Educational Planning Policy and Research Division
HOTS	Higher Order Thinking Skills
ILS	Integrated Living Skills
KBSM	Kurikulum Bersepadu Sekolah Menengah
KHB	Kemahiran Hidup Bersepadu
MOE	Ministry of Education
NACCCE	National Advisory Committee on Creative and Cultural Education
SCCQ	The School Creativity Climate Questionnaire





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# CHAPTER 1

## INTRODUCTION

In this chapter, the researcher discusses the background of thinking skills in education in Malaysia. The researchers focused on critical and creative thinking teaching practices, teachers' creativity characteristics and school creative climate in fostering critical and creative thinking skills as the focus of the study. The problem statement for this study is explained along with the objectives, research questions, significance of the study, scope and limitations and operational definition.

### 1.1 Background of the study

Malaysia Education Blueprint 2013-2025 outlined a major transformation in the Malaysian education system. To prepare the nation to be competitive at the international level, it is important to envision a highly-successful education system (Ministry of Education, 2013a). In producing a balanced education as a fundamental aspiration of students, Malaysia Education Blueprint expressed a desire to use the National Education Philosophy. Aspirations for every student are formulated in line with the National Education Philosophy which include knowledge, thinking skills, leadership skills, bilingual proficiency, ethics and spirituality and national identity (Ministry of Education, 2013a).

Students' thinking skills is one of the most important aspirations outlined in the Malaysia Education Blueprint. Each student must have a passion to know and learn how to obtain a lifetime of knowledge and capable of linking various new knowledge. Each student must master a variety of cognitive skills such as critical thinking, creative and innovative, problem-solving and reasoning and learning ability (Ministry of Education, 2013a). A new concept that is being developed now in Malaysia is the 21st century skills. This concept helps teachers who are involved in the field of technical and vocational, particularly to enhance 21st century skills. In Malaysia, 21st century skills embedded in the national curriculum goals aim to produce students who are well-balanced in resilient, passionate curiosity, principled, patriotic, thinking skills, communication and teamwork (Trilling & Fadel, 2009).

Malaysia has set a target to become a high income economy by 2020. Recognising the importance of education as a vehicle to produce the skilled human capital, the Ministry of Education Malaysia has restructured technic and vocational education where students are expected to work on their skills and enhance their innovation and creativity (Kiong & Heong, 2010). However, the key to excellence in education is quality teachers. Growth and development of the skills of an individual are influenced by the quality of education obtained from teachers who are skilled and knowledgeable. Teachers in the field of technical and vocational education should be aware that creative thinking skills affect educational outcomes, in which students gain knowledge and have the ability to use their knowledge for innovation (Kiong & Heong, 2010).

Creative thinking involves the search of new ideas, unique and original in problem solving and is fundamental in finding solutions to problems in the field of technical and vocational education (Edinger, 2008). The role played by teachers is enormous and challenging from time to time. In Malaysian school curriculum, the government created teaching and learning elements that can cultivate creative thinking in students as early as primary school level. The elements of creative thinking have begun to be applied in schools through the Integrated Living Skills (ILS) subject (Ministry of Education, 2002). In Malaysia, Integrated Living Skills (ILS) is a practical study which is offered to all students in lower secondary school (Form 1 to Form 3) (Ministry of Education, 2002). The teaching and learning of this subject should stimulate and encourage students to think, to question and to come up with new ideas. In this subject, teachers should organize appropriate instructional practices to encourage students to think and to give opinions (Ministry of Education, 2002).

The inception of Higher Order Thinking Skills (HOTS) in all secondary schools in 2013 has revived a change in the implementation of ILS subject. Implementation of ILS subjects is very closely related to HOTS for both consistent with the National Philosophy of Education and have the same purpose of creating a balanced and harmonious human intellectually, spiritually, emotionally and physically (Ministry of Education, 2013b). HOTS are defined as the ability to apply knowledge, skills and values in problem solving, decision making, creating and be innovative. Implementing HOTS will also lead to the production of a variety of alternatives, ideas, actions, solutions and design (Mei, Yunos, Othman, Hassan, & Tze, 2012). HOTS focus on higher level of thinking skills like critical thinking, creative thinking, logical thinking, reflective thinking and meta-cognition. To implement HOTS in classrooms, teachers need to plan questions, assignments and activities that require students to think and evaluate their own and others ideas (Ministry of Education, 2013b)

Integrated Living Skills teacher needs to be knowledgeable in contents as well as be competent with teaching skills. To develop students' own creative thinking skills, ILS teachers are encouraged to use appropriate teaching instructions that helps them foster creative thinking skills among students (Zainudin, 2006). ILS teachers who attempt to inculcate creativity in their students should bear in mind that their own creative styles will help their critical and creative thinking teaching practices practices.

Teachers can display how they value creativity when they prioritize divergent thinking, encourage the unusual use of materials, give students the opportunity to work on ambiguous real life problems and help students to response and attempt to look at a problem from different angles (Rubenstein, Mccoach, & Siegle, 2013). According to Almatrodi (2007), specific teaching behaviours can have a positive influence on the creative productions of students and teachers belief and characteristics influenced critical and creative thinking teaching practices and impacted on teacher effectiveness.

Rhodes (1961) defines creativity as having strong relationship between human being and environment factors. Environment factors here involved creative climate, social environment, physical environment, field, culture, family and organizations (Riga & Chronopoulou, 2012). In schools, creative climate creates the conditions for creative thinking to flourish and allows it to emerge. Teaching is greatly influenced by school administrator and school leadership's empowerment, provision of stellar support that motivates teachers to engage in critical and creative thinking teaching practices and also guided them toward professional growth. Peer interactions between teachers also have positive influence on teachers' teaching instructions (Yi, 2008).

Schools have a major role in fostering creativity by creating climate that is challenging and supportive for the teachers and the students (Omenyi et al., 2009). School creative climate can influence the teachers' mental situation, perceptions, attitudes, motivations, beliefs and behaviors towards the creative outcome in their work (Yi, 2008). Creativity can be developed in a supportive school climate. Hence, programmes for creativity development should be emphasized to sustain the school climate in supportive of creativity (Omenyi et al., 2009).

In Malaysia, efforts are being made to foster creative thinking through curriculum activities. Teachers are encouraged to use methodologies to promote creative thinking and students are encouraged to be innovative and come up with creative products. Students can be encouraged to participate in this process by enabling them to be aware of the ways in which they think, learn and solve problems. Thinking will also involve students in the teaching-learning process through evaluations of what is taking place during learning and can provide a window into the student's thinking processes (Awang & Ramly, 2008).

## **1.2 Problem Statement**

According to Malaysian Education Blueprint 2013 – 2025, each student learn thinking skills through education and this can only be achieved by teachers teaching instructions because teaching will influence students learning outcome. So far there is little research done to investigate the teacher critical and creative thinking teaching practices to achieve the objective of Malaysian Education Blueprint 2013 – 2025. Even though teachers' creativity plays an important role in developing students' creativity (Runco, 2006) and creativity is seen as an important dimension of education, there has been little research on critical and creative thinking teaching practices among ILS teachers in Malaysia.

According to Siew (2013), teachers who were moderately creative and had little knowledge and skills in creative thinking. Although many teachers claim to teach thinking skills during their class, most students do not develop the required thinking skills (Fisher, 2010). According to Normala (2009), creative thinking skills received prior attention in Malaysian education system when it is enforced in the teaching and learning process through infusion by the Malaysian Education Ministry. Unfortunately, ILS teachers in secondary schools have been using the traditional

methods of teaching, which limit the expansion of students' thinking skills. Teachers should plan their teaching strategies to make sure they implement critical and creative thinking teaching practices.

Lack of teachers' personal creativity enhancement reflects that teachers do not personally believe and feel capable of teaching creative thinking (Rubenstein et al., 2013). According to Rajendran (2008), teachers in Malaysia are not adequately prepared to teach thinking skills in the classroom compared to their level of preparation to teach the subject matter. As a result, teachers would be confused with methods and techniques that need to be adopted to impart creativity in the subjects taught. Teachers must use their own creativity characteristics to prepare their teaching practices.

In schools, creative climate has been identified as a significant factor in school, student and teacher achievement (Adeyemi, 2008; Omenyi et al., 2009). In order to build and sustain a school culture dominated by creativity and innovation, schools must effectively identify and mobilize the creative resources of their members. When teachers perceive a work climate that restricts or fails to encourage their creative expression, a gap may exist between the level of individual creative potential and the actual amount of individual creativity practiced within the school (Houghton & DiLiello, 2010).

There is a significant amount of literature pertaining to creative climate in organizations, similar information is lacking in the educational sector (Lin, 2012; Peter, 2012; Lin, 2011). Ekvall (1996) emphasizes that there is a growing need and demand for creativity and alternative methods of instruction in the classroom. Forces at work in the school climate such as relationship with principal, fellow teachers and students influence the exercise of creativity by teachers in the schools. However there is little information on the critical and creative thinking teaching practices from both creativity characteristics of ILS teachers and school creative climate aspects, though the importance of these aspects is widely accepted by educators nowadays.

This gives us some indication of how much critical and creative thinking teaching practices is neglected in the system of school education. Therefore, it is of important to investigate and understand how critical and creative thinking teaching practices can be more widely adopted and effectively used by ILS teachers in order to help promote the development of creative thinking skills in students, thereby giving them an edge for tomorrow's global competition. This work is therefore positioned to identify the ILS teachers' creativity characteristics and school creative climate with critical and creative thinking teaching practices.

### **1.3 Objectives of the study**

This study aims to investigate the relationship between creativity characteristics and school creative climate with critical and creative thinking teaching practices among Integrated Living Skills teachers in Selangor. The specific objectives of this study are:

- i. To identify the perception of Integrated Living Skills teachers on critical and creative thinking teaching practices.
- ii. To identify the perception of Integrated Living Skills teachers on creativity characteristics.
- iii. To identify the perception of Integrated Living Skills teachers on the school creative climate.
- iv. To identify the relationship between creativity characteristics and critical and creative thinking teaching practices.
- v. To identify the relationship between school creative climate and critical and creative thinking teaching practices.

### **1.4 Research Questions**

In accordance with the purpose of this study, the following research questions are:

- i. What are Integrated Living Skills teachers' perceptions on their critical and creative thinking teaching practices?
- ii. What are Integrated Living Skills teachers' perceptions on their creativity characteristics?
- iii. What are Integrated Living Skills teachers' perceptions of the school creative climate?
- iv. Is there a relationship between creativity characteristics with critical and creative thinking teaching practices?
- v. Is there a relationship between school creative climates with critical and creative thinking teaching practices?

### **1.5 Significance of the study**

Findings of this study may contribute to knowledge and the importance to improve teachers' creativity characteristics and school creative climate to foster critical and creative thinking teaching practices to students. ILS teachers could develop understanding and awareness about improving their creativity characteristics and teaching practices for fostering creative thinking among students. Determining the characteristics of creativity may assist researchers and teachers in discovering what kinds of creativity techniques may help an individual to solve problems differently than others.



It is hoped that the findings of the study will contribute to an understanding for the teachers about teachers' critical and creative thinking teaching practices and will help to identify the relationship between teachers' creativity characteristics and school creative climate, which is a valuable construct for school effectiveness. School principals and teachers may well use this research finding for improving school creative dimension and teacher teaching instruction. Ministry of Education will know the importance of creative thinking skills and plan relevant programs to propagate positive attitude towards creative climate.

Thus, with the advent of this study will hopefully help stakeholders such as the Ministry of Education, Teacher Training Institutions and schools administrators as an alternative to teaching practices and taking into account existing learning in order to produce individuals capable of being a member of a well-balanced community in terms of intellect and emotion.

## **1.6 Scope and Limitation**

The research covers to study the perception of ILS teachers on the critical and creative thinking teaching practices. Four main practices are focused in this research that are classroom management/learning atmosphere, support of exploration and experimentation, support of students' different ideas and divergent thinking and lesson organization and content. The focus of this study is to get the ILS teachers' perception on creativity characteristics and school creative climate in fostering critical and creative thinking teaching practices. This research is restricted to the Integrated Living Skills subject teachers in secondary schools in Selangor state.

## **1.7 Operational Definition**

Terms and phrases used in this study have been defined in the context of this study to ensure the accuracy of the interpretation. The definition is intended to explain in more detail to enable readers to understand the term in this study and not to be confused with the general term.

### **1.7.1 Critical and creative thinking teaching practices**

Critical and creative thinking teaching practices is defined as teaching instructions that are intended to develop students creative thinking skills which means critical and creative thinking teaching practices involves teachers identifying and fostering children's creativity (Afida, Aini, & Rosadah, 2013). In this study, researcher wanted to identify the critical and creative thinking teaching practices among Integrated Living Skills teachers. Critical and creative thinking teaching practices in this study refers to four main practices that are classroom management/learning atmosphere, support of student exploration and experimentation, support of different ideas and divergent thinking and lesson organization and content which ILS teachers used to enhance creative thinking skills to students during their lesson. In this study, the

critical and creative thinking teaching practices will be assessed by using The Teacher Checklist for Creative Thinking Instruction developed by Hamza and Griffith (2006).

### **1.7.2 Classroom Management / Learning Atmosphere**

Classroom management is identified as the learning atmosphere factor that are conducive to critical and creative thinking that encourage student ownership and self-direction in learning; classrooms that are emotionally safe, risk free learning environments; and classrooms where students are actively engaged in differentiated activities designed to meet their individual needs (Adams, 2013). In this study, classroom management are identified as practices that enhance critical and creative thinking from three main perspectives: teachers' attitudes, practices, and activities.

### **1.7.3 Support of Student Exploration and Experimentation**

Support of student exploration and experimentation is defined as teaching practice that should challenge students to explore, leading to self-discovery, experimentation and creativity (Chappell, Craft, Burnard & Cremin, 2008). In this study, this practice is defined as a practice that should help to students to engage learning by exploring, manipulation, experimentation and risk taking.

### **1.7.4 Support of Different Ideas and Divergent Thinking**

Support of different ideas and divergent thinking is defines as a practice that make students responses to a specific questions or problem, train students to think divergently and come up with different ideas, to use lateral thinking, analogies, and metaphors, visual, brainstorming and other creative thinking techniques, get students to organise plays, debates, trips which encourage and promote creativity. In this study, support of different ideas and divergent thinking is defined as collaboration between teachers and students, the usage of different methods of teaching such as discussion, controversial, debates, drill and practice, exploration and discovery.

### **1.7.5 Lesson Organization and Content**

Lesson organization provides opportunities for collaboration and planning of the teaching instructions. Lesson organization is a process that helps teachers develops habits of self-reflection and improvement through collaboration with their colleagues (Lartey, 2009). In this study, lesson organization and content refers to the teaching practices that provide opportunities for collaboration and planning of the teaching instructions. Lesson organization is a process that helps teachers develops habits of self-reflection and improvement through collaboration with their colleagues.

### **1.7.6 Creativity Characteristics**

Creativity is the creative thinking ability of behaviour, ideas and the finished product based on the experiences and owned curiosity, original knowledge, adventure, imagination, personality traits and challenges (Cheng, Shiu, & Chuang, 2012). The term styles refers to beliefs that inspire or other unconscious processes about how to be creative and the use of particular strategies for facilitating creative work (Kumar et al., 1997).

In this study, the researcher wanted to identify the level of ILS teachers' creativity characteristics. Creativity characteristics in this study refer to the strategies used by the Integrated Living Skills teacher to develop their potential and abilities in themselves to use creative thinking skills in their daily life. There are 6 subscales measured in this study that are belief in the unconscious processes, use of techniques, use of other people, final product orientation, environmental control and use of the senses. The ILS teachers' creativity characteristics in this study are assessed by Creativity characteristics Questionnaire (CSQ) developed by Kumar, Kemmler and Holman (1997).

### **1.7.7 School Creative Climate**

School creative climate is defined as peoples' perceptions and beliefs in the school environment that produces creative outcomes and creative interactions (Yi et al., 2008). The researcher wanted to see the level of school creative climate in secondary schools. In this study, school creative climate is focused at the school climate in the aspect of organizational climate that influence the teachers creativity behavior that includes administrators support, peer support and work environment. An organizational climate that is supportive for creativity is measured by 8 subscale that are challenge, freedom, idea support, trust and openness, playfulness and humour, debates, risk-taking and enough idea time. The school creative climate in this study is assessed by School Creativity Climate Questionnaire (SCCQ) developed by Omenyi, Agu & Odimegwu (2009).

## **1.8 Summary**

In conclusion, this study is aimed to identify the perception on critical and creative thinking teaching practices among ILS teachers. Teachers own creativity characteristics help the teachers to serve as good role models and to positively influence their students in the schools to adopt creative thinking. School creative climate influences each teacher's ability to generate creative ideas for their individual and group development and teachers themselves will develop the ability to face challenging tasks. Teachers need to provide opportunities where students can apply thinking skills in real life. If students wanted to succeed in the future, students should be provided with cognitive strategic enable them to think creatively, make decisions and solve problems.

## BIBLIOGRAPHY

- Adams, J. W. (2013). *A Case Study: Using Lesson Study To Understand Factors That Affect Teaching Creative and Critical Thinking In The Elementary Classroom* (Master's thesis). Drexel University.
- Adeyemi, T. O. (2008). Organisational Climate and Teachers ' Job Performance in Primary Schools in Ondo State, Nigeria : An Analytical Survey. *Asian Journal of Information Technology*, 7(4), 138–145.
- Afida, A., Aini, H., & Rosadah, A. M. (2013). A Review of Research on Creative Teachers in Higher Education. *International Education Studies*, 6(6), 8–14.
- Aljughaiman, A., & Mowrer-Reynolds, E. (2005). Teachers' Conceptions of Creativity and Creative Students. *The Journal of Creative Behavior*, 39(1), 17–34.
- Almatrodi, D. (2007). *Effective Critical Thinking Teaching Strategies as Perceived by Affiliated Program Evaluation Faculty* (Master's thesis). Western Michigan University.
- Amabile, Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing The Work Environment For Creativity. *The Academy of Management Journal*, 39(5), 1154 – 1184.
- Ananda, K. (2009). Creative Teaching And Its Assessment. In *UNESCO-APEID International Conference* (pp. 1–15). Bangkok, Thailand.
- Ary, D., Jacobs, L. C., & Razavieh, A. (2006). *Introduction to Research in Education*. 7th ed., p. 670. SAGE Publications.
- Awang, H., & Ramly, I. (2008). Through Problem-Based Learning : Pedagogy and Practice in the Engineering Classroom. *International Journal of Human and Social Sciences*, 3(1), 18–23.
- Brinkman, D. J. (2010). Teaching Creatively and Teaching for Creativity. *Arts Education Policy Review*, 111(2), 48–50.
- Chappell, K., Craft, A., Burnard, P., & Cremin, T. (2008). Question-Posing and Question Responding: The Heart of Possibility Thinking in the Early Years. *An International Journal of Research and Development*, 28(3), 267–286. doi:10.1080/09575140802224477
- Cheng, C., Shiu, S., & Chuang, C. (2012). The Relationship of College Students ' Process of Study and Creativity: Creative Self-Efficacy as a Mediation. *International Journal of Advanced Computer Science*, 2(3), 105–109.
- Cheng, Y., Kim, K. H., & Hull, M. F. (2010). Comparisons of creative styles and personality types between American and Taiwanese college students and the

relationship between creative potential and personality types. *Psychology of Aesthetics, Creativity, and the Arts*, 4(2), 103–112. Retrieved from <http://doi.apa.org/getdoi.cfm?doi=10.1037/a0017430>

- Cho, Y., Chung, H. Y., Choi, K., Seo, C., & Baek, E. (2013). The Emergence of Student Creativity in Classroom Settings: A Case Study of Elementary Schools in Korea. *The Journal of Creative Behavior*, 47(2), 152–169. doi:10.1002/jocb.29
- Cochran, W. G. (1977). *Sampling Techniques* (3rd ed., p. 428). New York: John Wiley & Sons.
- Creswell, J. . (2008). *Research Design:Qualitative, Quantitative, and Mixed Methods Approaches*.3rd ed., p. 296.New York: SAGE Publications Incorporated.
- Diana, R. M. (2011). *Faktor-Faktor Yang Mendorong Tekanan Kerja (Stres) Di Kalangan Guru-Guru Sekolah Menengah*. Kuala Lumpur: Open University Malaysia.
- Dijksterhuis, A., & Nordgren, L. F. (2006). A Theory of Unconscious Thought. *Perspectives on Psychological Science*, 1(2), 95–109.
- Dul, J., & Ceylan, C. (2011). Work environments for employee creativity. *Ergonomics Journal*, 54(1), 12–20.
- Edinger, M. J. (2008). *An Exploratory Study Of Creativity-Fostering Teacher Behaviours In Secondary Classroom*. Williamsburg: The College of William and Mary.
- Ee, J., Seng, T. O., & Kwang, N. A. (2007). Styles of Creativity: Adaptors and Innovators in a Singapore Context. *Asia Pacific Education Review*, 8(3), 364–373.
- Ekvall, G. (1996). Organizational Climate for Creativity and Innovation. *Journal of Work and Organizational Psychology*, 5, 105–123.
- Ekvall, G., Waldenstrom-Lindblad, I., & Arvonen, J. (1983). *Creative Organizational Climate.Construction And Validation Of A Measuring Instrument* (p. 34).
- Elias, M. (2006). *Pengaplikasian Kemahiran Berfikir Secara Kritis Dan kreatif Dalam Pengajaran Mata Pelajaran kemahiran Hidup Di Sekolah-sekolah Menengah Akademik daerah Tanah Merah Kelantan* (Tesis Sarjana Muda).Universiti Teknologi Malaysia.
- Fisher, R. (2010). Teaching Thinking in the Classroom. *Education Canada*, 47(2), 72–74.
- Fleith, D. de S. (2000). Teacher and student perceptions of creativity in the classroom environment. *Roeper Review*, 22(3), 148–153.

- Fraenkel, R. J., & Wallen, N. E. (2011). *How To Design And Evaluate Research In Education* (8th ed., p. 642). New York; McGraw-Hill Higher Education.
- Grainger, T., Barnes, J., & Scoffham, S. (2004). A Creative Cocktail: Creative Teaching In Initial Teacher Education. *Journal of Education for Teaching: International Research and Pedagogy*, 30(3), 243–253.
- Halizah, A., & Ishak, R. (2008). Through Problem-Based Learning Pedagogy and Practice in the Engineering Classroom. *International Journal of Social, Human Science and Engineering*, 2(4), 31–36.
- Hamza, M., & Griffith, K. (2006). Fostering Problem Solving & Creative Thinking in the Classroom: Cultivating a Creative Mind! *Educational Research Journal*, 19(3), 1–30.
- Harkness, J. A., & Glusberg, A. S. (1998). Questionnaires in Translation. *ZUMA-Nachrichten Spezial*, 87–126.
- Haron, M. Z. (2011). *Pengintegrasian Kemahiran Berfikir Secara Kritis dan Kreatif Dalam Pengajaran dan Pembelajaran Mata Pelajaran Pendidikan Islam* (Tesis Sarjana Muda). Universiti Putra Malaysia.
- Hornig, J., Hong, J., Chanlin, L., Chang, S., & Chu, H. (2005). Creative teachers and creative teaching strategies. *International Journal of Consumer Studies*, 29(July), 352–358.
- Houghton, J. D., & DiLiello, T. C. (2010). Leadership Development: The Key to Unlocking Individual Creativity in Organizations. *Leadership & Organization Development Journal*, 31(3), 230–245.
- Houtz, J., Selby, E., Esquivel, G. B., Okoye, R. A., Peters, K. M., & Treffinger, D. J. (2003). Creativity Styles and Personal Type. *Creativity Research Journal*, 15(4), 321–330.
- Hoy, W., & Miskel, C. G. (2007). *Educational Administration: Theory, Research, and Practice* (8th ed.) New York. McGraw-Hill Higher Education.
- Ismail, M. (2006). *Creative Climate And Learning Culture: Their Contributions Towards Innovations Within A Property Developer Organization* (pp. 22–28). JASA Review Papers.
- Jeffrey, B., & Craft, A. (2004). Teaching Creatively and Teaching for Creativity: Distinctions and Relationships. *Educational Studies*, 30(1), 77–87. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/0305569032000159750>
- Karpova, E., Marcketti, S. B., & Barker, J. (2011). The Efficacy of Teaching Creativity: Assessment of Student Creative Thinking Before and After Exercises. *Clothing and Textiles Research Journal*, 29(1), 52–66. Retrieved from <http://ctr.sagepub.com/cgi/doi/10.1177/0887302X11400065>

- Karwowski, M. (2011). Teacher Personality as Predictor of Perceived Climate for Creativity. *The International Journal Of Creativity & Problem Solving*, 21(1), 37–52.
- Keller, C. (2007). *Creativity Styles and Gender Role in Undergraduate Studies* VPSA Assessment Report.
- Kiong, T., & Heong, M. (2010, November). The Level Of Higher Order Thinking Skills For Technical. Proceedings of of the 1stUPI International Conference on Technical and Vocational Education and Training, 10–11.
- Kumar, V. K., Kemmler, D., & Holman, E. R. (1997). The Creativity Styles Questionnaire--Revised The Creativity Styles Questionnaire-Revised. *Creativity Research Journal*, 10(1), 51–58.
- Lartey, T. A. (2009). *Different Strategies To Fostering Creativity In Visual Arts In Senior High School* (Master's thesis). Kwame Nkrumah University of Science and Technology Kumasi.
- Lauer, K. J. (1994). *The Assessment of Creative Climate : An Investigation of the Ekvall Creative Climate Questionnaire* (Master's thesis). Buffalo. University of New York College
- Lin, Y. (2012). Adopting Creative Pedagogy into Asian Classrooms – Case Studies of Primary School Teachers’ Responses and Dilemma. *Journal of Education and Learning*, 1(2), 205–216.
- Lin, Y. S. (2011). Fostering Creativity through Education – A Conceptual Framework of Creative Pedagogy. *Creative Education*, 02(03), 149–155. doi:10.4236/ce.2011.23021
- Lodico, M. G., Spauling, D. T., & Voegtler, K. H. (2006). *Methods in Educational Research: From Theory to Practice* (1st ed., p. 368). San Francisco: John Wiley & Sons.
- López-Mesa, B., & Thompson, G. (2006). On the significance of cognitive style and the selection of appropriate design methods. *Journal of Engineering Design*, 17(4), 371–386.
- Lucas, B. (2001). *Creative Teaching, Teaching Creativity and Creative Learning*. London: Creativity in Education.
- McMillan, H. J., & Schumacher, S. (2010). *Research in Education* (7th ed., p. 511). New Jersey: Pearson Education Inc.
- Mean, L. A. (2006). *On Creativity Awakening The Creative Mind*. Selangor: Pelanduk Publications (M) Sdn. Bhd.

- Mei, Y., Yunos, J., Othman, W., Hassan, R., & Tze, T. (2012). The needs analysis of learning higher order thinking skills for generating ideas. *Procedia-Sosial and Behavioral Sciences*, 59, 197–203. doi:10.1016/j.sbspro.2012.09.265
- Mertens, D. M. (2005). *Research And Evaluation in Education and Psychology* (2nd ed., p. 507). SAGE Publications, Incorporated.
- Mildrum, N. K. (2000). Creativity Workshops In The Regular Classroom. *Roeper Review*, 22(3), 162–164.
- Mitchell, M. L., & Jolley, J. M. (2012). *Research Design Explained* (8th ed., p. 39). Belmont: Wadsworth.
- Ministry of Education. (2002). *Sukatan Pelajaran Kemahiran Hidup Sekolah Menengah* (p. 42). Kuala Lumpur: Pusat Perkembangan Kurikulum.
- Ministry of Education. (2013a). *Malaysia Education Blueprint 2013 - 2025*. Kementerian Pelajaran Malaysia.
- Ministry of Education. (2013b). *Pentaksiran Kemahiran Berfikir Aras Tinggi* (p. 177). Kuala Lumpur: Lembaga Peperiksaan Malaysia.
- Mohsin, M., & Yunos, N. (2008). Peranan guru dalam memupuk kreativiti pelajar. *Journal Pengajian Umum*, (9), 57–72.
- Muijs, D. (2011). *Doing Quantitative Research In Education With SPSS* (2nd ed., p. 247). London: SAGE Publications Ltd.
- National Advisory Committee on Creative and Cultural Education. (1999). All Our Future Creativity, Culture and Education. (NACCCE Report - 243).
- Nik, M. Z. (2004). *Pengaplikasian Kemahiran Berfikir Secara Kritis Dan kreatif (KBKK) Dalam Corak Pengajaran Guru Mata pelajaran Kemahiran Hidup Di Sekolah Menengah Daerah pasir Mas - Tumpat*. Skudai. Universiti Teknologi Malaysia.
- Noraini, I. (2010). *Penyelidikan Dalam Pendidikan* (1st ed., p. 570). McGraw-Hill (Malaysia) Sdn.Bhd.
- Norhusna, M. (2009). *Aplikasi Pemikiran Kreatif Dan Kritis Dalam Pengajaran Guru-Guru Teknikal Bagi Mata Pelajaran Teknikal Di Sekolah Menengah Teknik Di Negeri Johor* (Tesis Sarjana Muda). Universiti Teknologi Malaysia.
- Normala, M. N. (2009). *Penyebatian Kemahiran Berfikir Secara Kritis Dan Kreatif Dalam pengajaran Dan Pembelajaran Kemahiran Hidup Bersepadu*. (Tesis Sarjana Muda). Universiti Teknologi Malaysia.
- Omenyi, A. S., Agu, N. N., & Odimegwu, C. O. (2009). An Assessment Of The Climate For Creativity In Secondary Schools In Awka South Local Government



- Area. Proceedings of the Managing Inventions In The Nigerian Educational System, 16.
- Pallant, J. (2005). *SPSS Survival Manual* (2nd ed., p. 334). Crows Nest, Australia. Allen & Unwin.
- Pelfrey, R. (2011). *Classroom Behaviours in Elementary School Teachers Identified As Fostering Creativity* (Doctoral dissertation). Kentucky. Northern Kentucky University.
- Peters, B. R. (2004). *Identifying Ekvall 's Creative Climate Dimensions in Elementary through High School Settings : An Executive Summary* (pp. 1–9). New York, USA.
- Péter-szarka, S. (2012). Creative Climate As A Means To Promote Creativity In The Classroom. *Journal of Research in Educational Psychology*, 10(3), 1011–1034.
- Piaw, C. Y. (2010). Building a test to assess creative and critical thinking simultaneously. *Procedia-Social and Behavioral Sciences*, 2(2), 551–559. doi:10.1016/j.sbspro.2010.03.062
- Piaw, C. Y. (2011). Hindrances to Internal Creative Thinking and Thinking Styles of Malaysian Teacher Trainees in the Specialist Teachers' Training Institute. *Procedia - Social and Behavioral Sciences*, 15, 4013–4018.
- Pickeral, T., Evan, L., Hunghe, W., & Hutchison, D. (2009). *School Climate Guide for District Policymakers and Education Leaders* (Vol. 10018). New York: Centre for Social and Emotional Education.
- Rajendran, N. . (2008). *Teaching & Acquiring Higher-Order Thinking Skills: Theory & Practice*. Tanjung Malim: Universiti Pendidikan Sultan Idris.
- Ranjit, K. (2010). *Research Methodology: A Step-by-step Guide for Beginners* (3rd ed., p. 440). London: SAGE Publications Ltd.
- Reilly, R. C., Lilly, F., Bramwell, G., & Kronish, N. (2011). A synthesis of research concerning creative teachers in a Canadian context. *Teaching and Teacher Education*, 27(3), 533–542.
- Rhodes, M. (1961). Analysis of Creativity Can it be taught. *The Phi Delta Kappan*, 42(7), 305–310.
- Riga, V., & Chronopoulou, E. (2012). Applying MacKinnon's 4Ps to foster creative thinking and creative behaviours in kindergarten children. *International Journal of Primary, Elementary and Early Years Education*, 3(13), 1–16.
- Rosnani, H. (2003). Malaysian Teachers' Attitudes, Competency and Practices in the Teaching of Thinking. *Intellectual Discourse*, 11(1), 27–50.

- Rubenstein, L. D., McCoach, D. B., & Siegle, D. (2013). Teaching for Creativity Scales : An Instrument to Examine Teachers ' Perceptions of Factors That Allow for the Teaching of Creativity. *Creativity Research Journal*, 25(3), 37–41. doi:10.1080/10400419.2013.813807
- Runco, M. . (2006). *Creativity Theories And Themes*. New York. Elsevier Ltd.
- Saad, S., Saad, N. S., & Dollah, M. U. (2012). Pengajaran kemahiran berfikir: Persepsi dan Amalan Guru Matematik Semasa Pengajaran dan Pembelajaran Di Bilik Darjah. *Jurnal Pendidikan Sains & Matematik Malaysia*, 2(1), 18–36.
- Saebo, A. B., O'Farrell, L., & McCammon, L. A. (2013). Creative and Art Based Approaches To Teaching And Learning. In *Creativity and Innovation in Educational Research* (pp. 1–3). Canada.
- Salkind, N. J. (2005). *Exploring Research* (6th ed., p. 323). New Jersey: Pearson Education , Ltd.
- Schacter, J., Thum, Y. M., & Zifkin, D. (2006). How Much Does Creative Teaching Enhance Elementary School Students' Achievement? *The Journal of Creative Behavior*, 40(1), 47–72. doi:10.1002/j.2162-6057.2006.tb01266.x
- Sharma, R. (2011). Effect Of School And Home Environments On Creativity Of Children. *Journal of Educational Studies, Trends & Praactices*, 1(2).
- Siang, L. K. (2004). *Persepsi Guru-guru Terhadap Aplikasi Kemahiran Berfikir Secara Kritis Dan Kreatif Dalam Konteks pengajaran Dan Pembelajaran Mata Pelajaran Kemahiran Hidup bersepadu* (Tesis Sarjana Muda). Skudai. Universiti Teknologi Malaysia.
- Siew, N. M. (2013). Exploring Primary Science Teachers ' Creativity and Attitudes through Responses to Creative Questions in University Physics Lessons, *British Journal of Education, Society and Behavioural Science*, 3(1), 93–108.
- Simplicio, S. (2000). Teaching Classroom Educators How To Be More Effective and Creative Teachers. *Education*, 120(4), 675–630.
- Šorgo, A.I. (2012). A Cross-National Study of Prospective Elementary and Science Teachers' Creativity Styles. *Journal of Baltic Science Education*, 11(3), 285–292.
- Sternberg, R. J. (2006). The Nature of Creativity. *Creativity Research Journal*, 18(1), 87–98.
- Stum, J. (2006). Kirton ' s Adaption-Innovation Theory : Managing Cognitive Styles in Times of Diversity and Change. *Emerging Leadership Journey*, 2(1976), 66–78.

- Ting, T. Y. (2003). *Pengamalan Kemahiran Berfikir Secara Kritis Dan Kreatif (KBKK) Dalam Pengajaran Kemahiran Hidup Bersepadu* (Tesis Sarjana Muda). Skudai Universiti Teknologi Malaysia.
- Torrance, E. P. (1972). Teaching for Creativity. *The Journal of Creative Behavior*, 6, 114–143.
- Trilling, B., & Fadel, C. (2009). *21st Century Skills: Learning For Life In Our Times*. (1st ed.). USA: Jossey-Bass: John Wiley & Sons.
- U Alwehaibi, H. (2012). A Proposed Program to Develop Teaching for Thinking in Pre-service English Language Teachers. *English Language Teaching*, 5(7), 53–63. doi:10.5539/elt.v5n7p53
- Willower, D. J., & Carr, C. F. (1965). The School as a Social Organization. *Supervision and Curriculum Development*, (January), 251–255.
- Yi, X. (2008). *Creativity, efficacy and their organizational, cultural influences*.
- Yi, X., Cai, S., Scheithauer, H., Schwarzer, R., Luo, L., Huang, S., & Chen, G. (2008). Creative Organizational Climate of Schools, General Self-Efficacy, Creativity Self-Efficacy and Cultural Efficacy of Teachers. *Educational Research Journal*, 23(2), 227–251.
- Zainab, T. (2012). *Aplikasi Kemahiran Berfikir Secara Kritis Dan Kreatif Dalam Pengajaran Guru Kemahiran Hidup Tingkatan Tiga Bagi Tajuk Rekacipta* (Tesis Sarjana Muda). Skudai. Universiti Teknologi Malaysia.
- Zainudin, A. B. (2006). *Pengaplikasian Kemahiran Berfikir Dalam Pengajaran Kemahiran Hidup Bersepadu Sekolah Menengah Daerah Kota Bahru, Kelantan* (Tesis Sarjana Muda). Skudai. Universiti Teknologi Malaysia.