CREATIVE THINKING ABILITY OF PRIMARY SCHOOL CHILDREN IN KUCHING, SARAWAK

Siti Zakiah Bt Syed Mustafa

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CREATIVE THINKING ABILITY OF PRIMARY SCHOOL CHILDREN IN KUCHING, SARAWAK

SITI ZAKIAH BT SYED MUSTAFA

This project is submitted in partial fulfilment of the requirements for a Bachelor of Science with Honours (Cognitive Science)

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ABSTRACT

CREATIVE THINKING ABILITY OF PRIMARY SCHOOL CHILDREN IN KUCHING, SARAWAK

Siti Zakiah bt Syed Mustafa

The creative thinking teaching has been implemented in Malaysia’s education system since 1980 and was re-emphasized with the introduction of Malaysia’s Curriculum Standard Primary School (KSSR) in 2010. The teaching of the thinking skill is important in order to support the government K-economy policy which is a way to achieve the nation’s Vision 2020. The skill also listed as one of the important thinking skills needed to be marketable in the 21st century besides communication and ICT literacy. The objective of this study is to investigate the creative thinking ability of primary school children in Kuching, Sarawak. The Malay version of Torrance Tests of Creative Thinking Figural Form A was administered to 168 primary school children in Kuching who were selected using stratified random sampling method. The finding was that the average Creativity Index is 74.5536 which falls into above-average class, there is significant difference in the creative thinking ability between children from rural and urban, no significant difference in the creative thinking ability in the children between opposite gender whereas there is significant difference in the creativity level between children from Primary 1 and Primary 5. The findings supported by some of the literature reviews. The findings from this study will provide insight on the level of creative thinking of primary school children in Kuching.
1.0 Introduction

Business leaders, politicians and educators agreed that students need the "21st Century Skills", a set of thinking skills, to be successful in the 21st century. The demand of these skills is given more attention now as changes in the economy and the world depends on having it (Rotherham & Willingham, 2010). The skills are as the following:

- creativity and innovation
- critical thinking, problem solving, decision making
- learning to learn, metacognition (knowledge about cognitive processes)
- communication
- collaboration (teamwork)
- information literacy
- information and communication (ICT) literacy
- life and career
- personal and social responsibility – including cultural awareness and competence

(Cisco, Intel & Microsoft, 2010)
Those skills play a role to secure economic competitiveness, to attract growth industries and create jobs. Acquiring such skills also will increase a person’s marketability, employability and competitiveness in global world. Those skills can be possessed by introducing new policy to public education system (Partnership for 21st Century Skills, 2008).

Since thinking skills such as creative thinking is demanded in the 21st century. There is immeasurable development to implement the “21st Century Skills” in education system for producing competitive workforce. In Malaysia, the government particularly Ministry of Education emphasizes on creative and critical thinking teaching in the Primary School Integrated Curriculum (KBSR) and Secondary School Integrated Curriculum (KBSM) since January 1980. Its importance was re-emphasized with the introduction of the Knowledge Based Economy (K-economy) policy in 2001. The implementation of the K-economy blueprint requires a creative workforce; hence, creativity training must begin from primary school. The shift to K-economy from Production Based Economy (P-economy) is to achieve the goal of Vision 2020. However, Malaysia lacks of critical requirements to support the new economy policy (Ramlee Mustapha & Abu Abdullah, 2009). The old command and control management system that are currently used is not effective in this 21st century so, the nation’s policies start from education system has to change to produce graduates with relevant knowledge, critical and higher order skills, and proper attitudes (Ramlee Mustapha & Abu Abdullah, 2009). The focus of the education system should be directed to make the existing curriculum more innovative to help students to invent and develop a critical and analytical mode of thinking and create well educated, highly skilled and strongly motivated workers (Ramlee Mustapha & Abu Abdullah, 2009).

The year 2010 has been acknowledged as Creativity and Innovation Year. It is one of the government’s strategies to achieve the Vision 2020. Due to that, a new curriculum for primary school known as Curriculum Standard Primary School (KSSR) has been introduced. Cross Curriculum elements in the KSSR
specify on entrepreneurship, creativity and information technology & communication (ICT) elements. The elements were emphasized, as master in those three will ensure the nation to achieve Vision 2020.

Other than that, The Ministry of Education (2006) (as cited Chua, 2010, pg 551), expressed the importance of both creative and critical thinking, in the Malaysia Education Master Plan 2006-2010 by stating that one of the goals of the plan in producing first class human resources in Malaysia is to support students with creative and critical thinking abilities. The Malaysia Education Development Plan 2001-2010 stated that the plan aims to enhance students' critical and creative thinking skills (Malaysia Education Ministry, 2001). The aim of the Education Development Master Plan 2006-2010 is to develop education institutions to serve as model for other institution in same nature of business. “Students graduated from these institutions are hoped to excel in academic and co-curriculum, skilful, good attitude, high team spirit, high leadership skill, creative thinking, patriotic, global thinking and competitive” (Malaysia Education Ministry, 2006, p. 119). The plan also stated that development of human force aims to ensure Malaysian youngsters are fulfilled with depth and broad knowledge for utilization in various field of work. The students will be trained through class activities to possess important skills such as communication, ICT, think creatively and critically and act rationally, apply long life learning, high value and able to be effective leader in family and society.

Here, it can be seen clearly that Malaysia through Ministry of Education regarded creative thinking as one important component for country development especially in economy growth. This means, creative thinking abilities should be possessed by all Malaysian and should be started from the young generation.
1.1 Background of Study

The large amount of brain growth occurs during childhood and the development of thinking skills during that time will support more comprehensive learning when children getting older. Palmer and Doyle (2004) (as cited in Clarke, 2008) stated that education is the development of thinking clearly and creatively, implementing own plans and communicating ideas to others in a multiple of ways. By nurturing and developing creative thinking since childhood, they may able to understand the world, make sense of what is happening around them, communicate their thoughts and what they can do with the ideas better than those who are not taught to think creatively. By being encouraged to do so also, the children develop the confidence to try out ideas and new methods and to experiment without the fear of being wrong or making a mistake. They also need to know that trial and error, and making mistakes are common in learning. Other than that, the adults around them need to demonstrate these skills and encourage children to think again, try again, and find a new solution. (Clarke, 2008)

Creative thinking affects every aspects of education from pre-school to after school, college and university. Experts agree that early education is a fine time for introducing creative ways and models of thinking. This is because, the earlier a child is simulated to think creatively, the more they will enjoy originality and will develop more tolerance for the ambiguous and unusual things (Sasson, 2007). Then, if a student enjoys originality, he or she will make effort to find and/or create it and will enjoy identifying originality in their studies. Therefore, lessons should represent a variety of learning and thinking styles in order to bring out the best of a student's creative skills and abilities (Sasson, 2007). The creative process involves not only the imagination, but also practical aspects, such as writing a play, conducting an experiment, composing a piece of music etc. There are processes such as gathering and sifting data; working and re-working ideas which when combined with expertise and the knowledge and understanding of both context and form enable people to develop ideas (Perry, n.d.).
Tun Dr. Mahathir Muhammad (1998) (as cited in Saroja, 2008), stated that education should prepare children to handle with changes rather than become dependent on habits. He has the opinion that education for the future should emphasize less on acquiring knowledge that is temporary in nature and should focus more on developing creative and critical thinking minds.

Previous studies found that there is difference in creative thinking ability of children from different demographic variables. Stephens, Karnes & Whorton (2001) conducted a study to compare creative thinking ability of children between urban and rural schools found that urban children were more creative. Shutiva (1991) found that urban children were more creative than rural children. Another study by Stephens to investigate difference in creative thinking ability from different gender found that girls are more creative compared to boys whereas Siti Rafiah (2008) found that there is no difference in creativity ability between genders. Study conducted by De Caroli & Sagone (2009) to compare creative thinking ability of 8 and 10 years old children found that 10 years old children has higher creative thinking ability compared to 8 years old children. Lee (2005) found that 5 years old preschoolers scored higher than 4 years old preschoolers. However, Torrance (1970) claimed that there was a decline in creativity level in fourth graders in an American school due to the educational and social systems. These show that demographic variables such as location, gender and schooling levels play a role in determining the level of creativity in children. However, there are other factors such as birth order (Boling, Boling & Eisenmen, 1993), family environment (Norah, 2009), socioeconomic status (Stephens et al., 2001) and ethnic groups (Kaufman, 2006) which affect the ability to think creatively.

1.2 Problem Statement

The teaching of creative thinking in Malaysia has been implemented since 1980 in Kurikulum Bersepadu Sekolah Rendah (KBSR) and Kurikulum Bersepadu Sekolah Menengah (KBSM). The importance was re-emphasized with the introduction of K-economy by the Malaysia government. The movement
towards K-economy from P-economy is a step to achieve nation’s Vision 2020. However, Malaysian students lack of skills to move together with the new government policy. In 2010, creativity and innovation has been stressed out in Kurikulum Standard Sekolah Rendah (KSSR). This is another step taken by the Ministry of Education to enhance creative thinking ability among primary school students which is so important in K-economy.

The importance of creative thinking is not only being stressed out in Malaysia but also in nations around the world. Creative thinking skill is one of the thinking skills needed in the 21st century in order to increase individual marketability and secure economic competitiveness. Creative thinking is not only vital to the country but also to the individual itself. It does help in solving every complex problems hence make the individual becomes a better person.

Many studies have been carried out to investigate creative thinking ability between children from distinct school locations, opposite gender and different schooling levels. Research done by Shativa (1991) to examine whether difference exist in creative thinking ability between children from rural and urban schools found that urban children were more creative than rural. Study conducted by Siti Rafiah (2008) in Klang Valley to investigate whether creative thinking ability of female differs from male found that there is no significant difference in creativity between genders. However, study done by Lee (2005), found that girls are more creative than boys. Investigation done by Torrance (1970) found that upper schooling level has lower creative thinking ability compared to lower schooling level whereas study conducted by Lee (2005) found that 5 years old preschoolers scored higher in creativity test than 4 years old preschoolers.

This study is conducted to examine the level of creative thinking of primary school children and whether difference exist in the creative thinking ability between children from urban and rural schools, between boys and girls and between Primary 1 and Primary 5 children in Kuching, Sarawak. So far, there is no study found to compare the creative thinking ability between those stated
demographic variables. This study will provide insight to the Ministry of Education and the educators on the level of creative thinking of primary school children in Kuching, Sarawak.

1.3 Objectives of Study

1.3.1 General Objective

- To examine Sarawak primary school children's creative thinking level/ability based on the Torrance's Creativity Index.

1.3.2 Specific Objectives

- To investigate whether differences in creative thinking ability exist between children from different school locations.
- To investigate whether differences in creative thinking ability exist between children from different gender.
- To investigate whether differences in creative thinking ability exist between children from different grade/schooling levels.

1.4 Research Questions

- What is the average creativity index of primary school children in Kuching, Sarawak?
- Is there a significant difference in creative thinking ability between children from rural and urban schools?
- Is there a significant difference in creative thinking ability between children from different gender?
- Is there a significant difference in creative thinking ability between children from different schooling levels?
1.5 Conceptual Framework

Figure 1.1
Dependent and Independent Variables

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<td>Gender</td>
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<tr>
<td>Schooling levels/Age</td>
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1.6 Definitions of Key Terms/Concept

1.6.1 Creativity

Creativity is the capacity of an individual to produce compositions, products or ideas related to particular tasks which are essentially new or novel, previously known or unknown to the producer. Another definition from Torrance is, creativity is a process, the contribution of new ideas a different viewpoint; a new way of looking at a problem, situation or event, where the freedom of the individual is the basis of expression (Torrance, 1974) (as cited in Norah, 2009, p. 9). The concept of creativity in this study is the same as defined by Torrance.

1.6.2 Creative Thinking

Creative thinking is a process of becoming sensitive to specific problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and identifying the difficulty, searching for solutions, making guesses or formulating hypotheses and possibly modifying and retesting them and finally communicating the results
effectively to others (Torrance, 1976) (as cited in Norah, 2009, p. 9). The concept of creative thinking in this study is the same as defined by Torrance.

1.6.3 Creative Thinking Ability

Creative thinking abilities refer to constellation of generalized mental abilities that is commonly presumed to be brought into play in creative achievements (Torrance, Ball & Safter, 1992). In this study, creative thinking ability refers to level of creative thinking. The level is known by making comparison on Creativity Index (CI) scores obtained after administering the Torrance Tests of Creative Thinking (TTCT) on 168 primary school children in Kuching, Sarawak.

1.6.4 21st Century Skills

The “21st Century Skills” is a set of scientific thinking skills (Rotherham & Willingham, 2010). Those skills are thinking critically and making judgements; solving complex, multidisciplinary and open-ended problems; creativity and entrepreneurial thinking; communication and collaborating; making innovative use of knowledge, information and opportunities; and taking charge of financial, health and civic responsibilities (Partnership for 21st Century Skills, 2008). The concept of 21st Century Skills in this study is the same as defined in Partnership for 21st Century Skills.

1.6.5 Torrance Tests of Creative Thinking (TTCT)

The TTCT is an extensive battery of tests devised to measure creative abilities, with a particular emphasis on divergent thinking (Potur & Barkul, 2009). In this study, the test is used to measure creative thinking ability of primary school children in Kuching, Sarawak.
1.6.6 Creativity Index (CI)

The CI is an index of Torrance Tests of Creative Thinking. It determines the overall creative potential (Torrance et al., 1992). In this study, creative thinking ability of primary school children in Kuching is measured by looking at the CI.

1.6.7 Creative Strengths

The creative strength is a set of thirteen criteria of TTCT (Torrance et al., 1992). In this study, the CI is obtained by adding score on the creative thinking ability to score on the creative strengths. It is measured by counting number of occurrences of each criteria in each test answer booklet.

1.7 Significance of Study

The study will provide insight on creative thinking ability of primary school children in Kuching, Sarawak. Besides, this study will also provide insight on whether there is difference in creative thinking between children from different gender, locations of school and levels of schooling. School teachers should plan and execute school programme(s) to increase children's creative thinking by using the findings as a guideline. It is also a business opportunity for the software developer to develop software for nurturing continuously children's creative thinking ability by using the findings as a baseline.

1.8 Limitation of Study

Findings from this study are important as it will determine the level of creative thinking ability of primary school children in Kuching, Sarawak. However, there are few identified limitations. There is no scale for children found to classify the creativity index of primary school children in Kuching for determining their level of creative thinking. Comparison was made to a scale