

CRITICAL THINKING SKILLS IN EARLY YEARS

Wong Li Jean¹, Yeo Kee Jiar²

¹Faculty of Education, University Technology Malaysia (UTM), Malaysia
jeanteengal@gmail.com

²Faculty of Education, University Technology Malaysia (UTM), Malaysia
kjyeo_utm@yahoo.com

ABSTRACT

Learning to think critically set a good foundation for good thinking development in younger children. The preschool years have to be liable to incorporate strategies and develop appropriate practices of critical thinking into the classroom. However, teaching critical thinking has not been a simple task. The purpose of the research study attempts to identify critical and creative thinking among kindergarten children. In the name of this purpose the ideas are taken from the teacher candidates who teach in kindergarten level. In the study four preschool teacher candidates take part in. To get the teachers' ideas, in the research a form is applied consisting of 19 open-ended questions was directed to the teachers and principal in a kindergarten. The frequencies of the teacher candidates' opinions are taken by coding with the content analysis. Looking into the results of the research it is stated that teachers declare that insufficient sources of critical thinking develop in students and teachers have shallow understanding of critical thinking skills. This proposed study is expected to benefit to the education society in order to enrich young children's capacity and skills to think critically and creatively.

Keywords: critical and creative thinking, kindergarten, early childhood

1. INTRODUCTION

Today's improving conditions of education highlight the need to reinforce children's thinking in the curriculum. Children are competent to adapt some of the initial thinking concept and skills. The skill of critical thinking, which is momentous for both community and the individual, takes its place in the skills tried to be gained lies at the heart of education. Sharpening and refining of the thinking process should be the primary goal of learning and teaching in education (Wong & Yeo, 2014). Moreover, critical and creative should be taught during school years and students are expected to be trained as independent thinkers, effective thinking (Zahra, Yusoff & Hasim, 2012). Therefore, activities in school should be able to fulfill children's cognitive needs for critical and creative thinking (Smildtstein, 2011). Every child should be able to master a range of important cognitive skills; however, this is an area where the system has fallen short (Malaysia Education Blueprint).

2.0 LITERATURE REVIEW

2.1 Critical thinking

Critical thinking is an intellectual and skill gain through a persistent effort of knowledge, quality and depth of experience in sphere of thinking. Teaching thinking stimulates and challenges a child intellectual. Students are motivated and more engaged in the classroom when teachers stimulate their intellectual and thinking (Fisher, 2008). Therefore, critical thinking skills can be capitalized by educators in the classroom to stimulate their intellectual skills through reading and writing in the school.

Students faced with a future in an unpredictable world and in the new digital age will need to gain the skills to reason, making decision and solve problem in their lives and learning. It is important to have right learning environment fostering critical thinking for young children (Wong & Yeo, 2014). Therefore, school should be a place that provides rich intellectual resources to help students to become a better thinker. However, common practices of transferring knowledge such as endless worksheet, passing tests and focusing on textbooks scripts in traditional classroom settings are still happening in the school (Smilkstein, 2011).

Although there is a growing awareness of the importance of developing children's thinking skills within the preschool curriculum, preschool curriculum in Malaysia are still accustomed to be educated in formal way in which academic and formal curriculum is highly emphasized (Bakar, 2010). In recent years however, the early childhood landscape has seen perceptible changes of embarking on more progressive approaches. To spur transformation of education system, Malaysia Ministry of Education with Agensi Inovasi Malaysia (AIM) started i-Think project to impart thinking skills to students, allowing them to be problem solver, lifelong learners, and creative thinker. Additionally, Malaysia Preschool Curriculum Standard Document (2010) aims to integrate creative, critical and innovative thinking in all teaching resources and learning environment. The initiatives provided the basis of positive learning environment that children should be exposed to the development of key skills such as critical thinking in the schools (Preschool Curriculum Standard Document, 2010).

2.1 Critical thinking skills in kindergarten

Early childhood education practices should infuse the elements of critical and creative thinking skills in the curriculum (Lin, 2011; Adam, 2013). The relationship between creativity with pedagogical practices and the categories of creativity nurtured within education are based on a creative pedagogical framework which consists of creative teaching, teaching for creativity and creative learning. (Lin, 2011). Therefore, teachers' practices and experiences with critical thinking are important to implement these thinking skills in the school.

Educator with the critical thinking skill applies it to his or her own life, can be more effective in learning environment based on creative thinking (Tok, 2012). Moreover, the educator ought to be a model for the students about their thinking skills. Sternberg (2003) emphasize that for an educator it is significant to be a model for the students to develop their thinking skills

A study was conducted by Cheung & Leung (2014), personality on preschool teachers are able to cultivate and foster creativity among children. Results showed that teachers' personalities bring a great impact on children's learning and classroom practices. Hence, teacher's belief and self-efficacy in their teaching are strongly influenced students' achievement and skills (Jenkins, 2013). According to a case study, teachers' personal belief was found to affect their choices of classroom management approaches (Eveyik-Aydin, Kurt & Mede, 2009). Teachers can enhance student learning in powerful ways that extend beyond memorization and tests by helping students learn and apply the attitudes and practical tools of effective problem solvers. On the other hand, creative thinking refers to creation of new ideas which eventually important to solve problem. Teacher as a model of problem solver is to be emulated by the children in the classroom. Teachers are encouraged to involve students to attain challenges of problem solving and help them to progress gradually become independent thinker and problem solvers instead of memorization-dependent (Hamza & Kimberly, 2006).

Teacher-centered and student-centered approaches mainly used as teaching approach around the world. Strategies to practice critical and creative thinking skills in the classroom are those that involve student-centered activities, the use of multimedia technology, the connection of content to real-life experience and open-ended questioning are the effective instructional strategies (Horng, Hong, Chan Lin, Chang, and Chu , 2005). Furthermore, educators should understand the needs and characteristics of the students to enable the success of teaching-learning activities by promoting collective working and collaboration among students with similar interests and skills (Kayikci, 2009). Although teacher is mainly responsible in the learning environment however it is important for the students ready to play an active role in their learning by virtue of their participation and activities (Azizah, Fariza & Hazita, 2005).

Apart from good teaching, the application of curriculum subjects is an alternative approach to develop young children's thinking and problem solving skills (Taggart, Ridley, Rudd and Benefield, 2005). Children need to be provided with reading materials helping them to raise questions and encourage them to think or to be creative in the school (Rosnani&Suhailah, 2003). Study has shown the

importance of relationship between critical thinking, creative thinking and the study of mathematics (Aisikovitsh-Udi and Amit, 2011).

Supportive environments in an educational setting were found significant impact in fostering children's creative thinking skills (Lin, 2011). Supportive environment includes leader, school administrative and parents. School administrative and authority must establish the atmosphere for educators to do creative work, in order to promote creativity among learners (Adam, 2013). Creative leaders are the key person to create the critical and creative thinking environment and opportunities for children (Temperley and Stoll, 2009). Therefore, the school principal or administrative leader should be at the front line to develop a new paradigm in the school system (Rosnani & Suhailah, 2003). Recent literature shows that classroom instruction and student achievement increases when schools provide structured opportunities for teachers to collaborate and learn new skills (Gallimore, Ermeling, Saunders, & Goldenberg, 2010). On the contrary, parental involvement is critical to a child success in school in term of academic performance, learning behaviour, self-concept, test scores, attendances and aspiration (Lynch, 2005). On that account, parental involvement is positively associated with children's performance in the classroom includes critical and creative thinking.

However, the issue of how best to foster thinking skills in learning environments remains problematic. Conventional approach to help students in completing syllabus, memorizing materials and focusing on the examination are still practiced in the school (Rosnani & Suhailah, 2003). Learning activities that foster higher order thinking skills such as creativity will be eliminated if teachers continue with conventional approach rather than the brain compatible strategies.(Adam, 2013). There are significant effects on teaching method and teachers' behaviour in increasing creativity among school students (Zahrin, 2003 & Joseph, 2009). In addition to that, research has discovered the educators' lack of belief and knowledge in creative and critical thinking (Rosnani & Suhailah, 2003; Smilkstein, 2011). According to the report by Tan Sri Muhyiddin Yassin, the Deputy Prime Minister recently stated that only 3% pre-school teachers possess the formal qualifications and mostly are only on-the-job training or took pre-school education courses not recognised by the Malaysian Qualifications Agency. Consequently, educators are unable to execute thinking skills in the classroom without appropriate skills.

In order to gain better understanding on the integration and incorporation of creative and critical thinking in daily lessons, the proposed study was conducted to investigate the limitation of developing critical and creative thinking among kindergarteners. Hence, this study aims to discover the teachers' experiences and practices of creative teaching and critical thinking among kindergarten children. Besides, the management and administrative personnel are also considered in the study of how to improve the teaching of critical and thinking in the school.

This preliminary study aims to identify the teachers' opinions towards critical thinking among the kindergarten children. The main purpose of this study is to investigate the kindergarten teachers' teaching practices on critical and creative thinking skills.

2.2 Purpose of study

The purpose of this study is to identify teachers' view about the critical thinking in the kindergarten. In accordance with this purpose some answers were looked for the questions below.

1. What are the opinions of the kindergarten teachers about their own practices and experiences towards critical thinking?
2. What are the opinions of the kindergarten teachers about the classroom approach towards critical thinking?
3. What are the opinions of the kindergarten teachers about the school environment support towards critical thinking?
4. What are the evidences of critical thinking practices conducted in the classroom?

3. METHOD

Qualitative methods through observations and interviews were used as data acquisition approach. Observation and interview were employed to collect and analyse the critical and creative thinking skills practice in a kindergarten.

3.1 Participants

One headmaster and three teachers were employed as the interviewees for the study. Principal and teachers were interviewed individually to identify the current practices of critical and creative thinking skills in the kindergarten. Besides, observation was done to identify the strategies and practices in the classroom. Observation includes four level classes consists of 3 – 6 years old.

3.2 Data Collection

Semi-structured interviews and classroom observations were used for data collection.

3.2.1 Interview

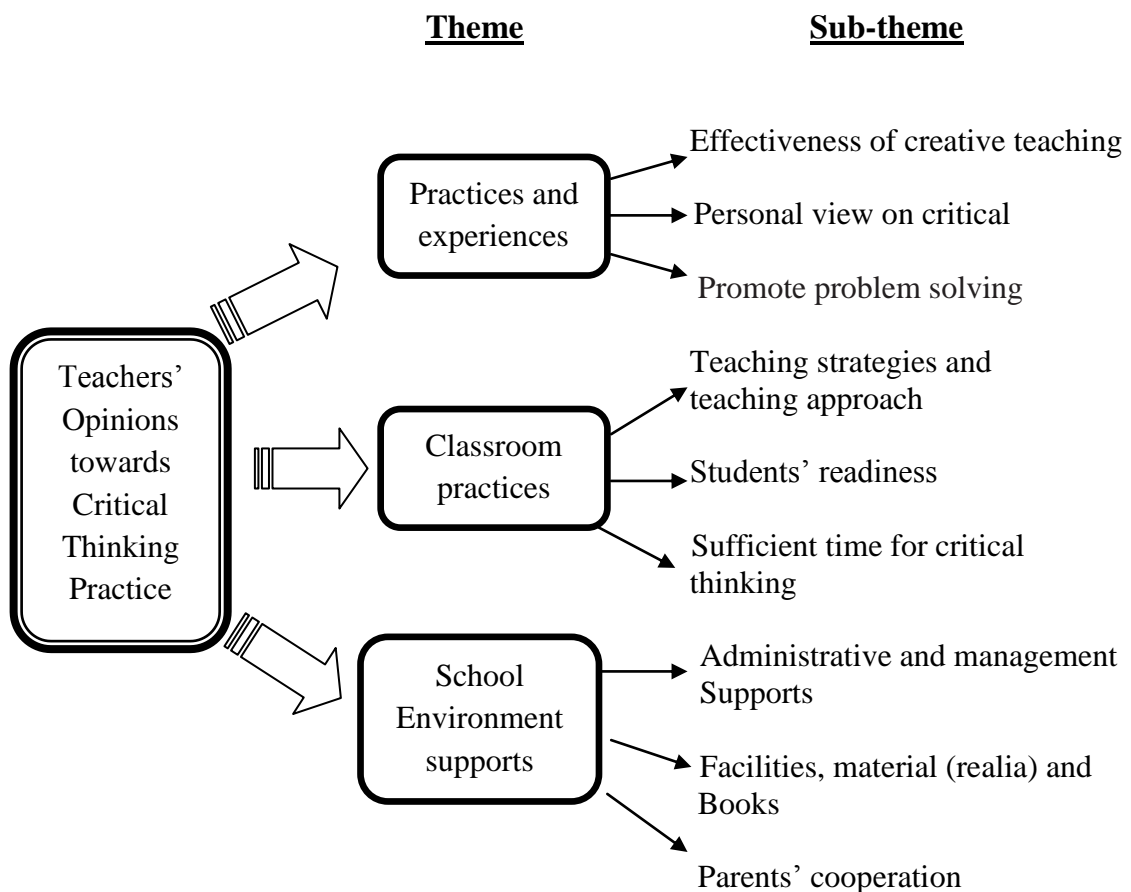
The main method use in the data collection is in-depth face-to-face semi structured interviews with teachers and principal. Each participant was expected to respond verbally to the proposed 19 open-ended interview questions. MaxQDA analysis tools were utilized to categorize the information according to the research questions. The main ideas in each category were coded, and the themes were identified. Subthemes were then developed from the main ideas and themes were recognized from the subthemes Analysis of the interview transcripts were revealed in three main themes according to the participants' opinions, there are: practices and experiences, classroom practices, and school environment supports.

3.2.2 Observation

The second method used in collecting the data is the small scale structured observation. The use of small scale observation with intends to observe how critical thinking skill was implemented in classroom practice. The observation were used to observe teachers in terms of learning activities and overall teaching learning approaches in the pre-school classrooms. The observation method was based on the scale of 0 - No evidence; 1 - Very little evidence; 2 - Some evidence; 3 - Much evidence and 4 - Considerable evidence.

4. RESULTS AND FINDINGS

There were 3 teachers and one principal were interviewed in this study. The data gained in the study are according to the research problem. The researcher analysed the responses given then categorized them into three major themes and sub-themes as follows:



4.1 Interviews of Kindergarten Teachers

4.1.1 The Opinions of teachers' practices and experiences on critical thinking

Teachers commented that creativity was an important element to enhance learning among kindergarteners. Most of the teachers are incapable to define and differentiate the meaning of critical and creative thinking skills. Teachers with 10 years teaching experiences commented that "I am not sure about the definition of critical thinking". Principal commented that most of the teachers do not have early childhood knowledge background and lack of training. Generally, teachers gained experience through on the job training. Besides, quarterly in house training was provided by internal senior teachers. Critical and creative thinking were applied by some teachers in the lesson, however, they are not aware with the teaching terminology involved. This phenomenon strongly shows that teachers are lack of formal knowledge in applying creative and critical thinking in their teaching. This is what the principal said "Some teachers know the term, but do not know how to apply it, and some teachers applied it without knowing the term of creative and critical thinking skill".

Most of the teachers emphasized creative skill such as art and craft strategies are the preferred method used by teachers to enhance learning skills, as well as to generate motor skills among the children. Hence, the critical thinking approaches were neglected by the teachers. Additionally, the principal commented "Teachers themselves are without critical thinking skills, thus unable to produce critical thinking students".

4.1.2 The Opinions of teachers' classroom practices on critical thinking

Strategies and teaching approach is the highest frequency commented by participants. This approach includes supported materials, group work or project, computer aided teaching (CAT) and activities actively involved by students. Teachers commented that the supported materials and resources are important to improve the students' learning. Technology was widely used to enhance learning in the classroom. Therefore, teachers prefer using CAT such as songs, story and games were frequently used in the classroom to enhance students' learning. Teachers had stated that the interactive pictures and song in the CAT are able to attract students' attention if compared to regular workbook. In activities wise, students are actively involved in gardening, cooking, singing, dancing, playing games, storytelling and drawing.

Students' readiness in learning affected their performance. Teachers commented that some children are fast learner and able to work independently, while some are weak and may not ready for learning. Some children were unable to follow the instruction in the classroom due to their family background, language proficiency and ability in learning. Hence, teachers should understand each student's needs in order to deliver knowledge to them accordingly. Time constraints posed a big challenge to teachers and students. Teachers are unable to produce effective teaching on critical and creative thinking in a short time. Most teachers followed the classroom schedule fixed by the school management without much personal inputs.

4.1.3 The Opinions of teachers' towards school environment support on critical thinking

Table 3 shows that parents' expectation and different views in education may affect teachers' performance. Comparisons were most likely made by parents on academic achievements among students and this narrow focus has become a twisted school culture. In fact, parents' personal judgement and question on teachers' performances has caused teachers unwilling to make new changes in teaching.

School authority always supports teachers to develop creative and critical thinking skill through motivation, supporting material and school activities program. However, the material resources and facilities are limited in order to support creative and critical thinking skill efficiently. Hence, trainings are important component for teachers to develop creative and critical teaching methods, but the current practices and in-house training in the school are not sufficient to enhance teachers' knowledge of creative and critical thinking skills. Engagement of professional trainers to train their teaching staff could be an important option.

4.2 Critical and Creative Thinking Skills Practice in a Kindergarten Through Observation

Observation in the classroom was done to examine the application of critical thinking skills in teaching and learning. A checklist was used to record the practice. The response recorded was analysed by using observation checklist by researcher.

There are two categories observe by researcher in the classroom which are activities provided by teachers and instructional strategies, media and realia that foster thinking among the kindergarteners. Only one observation found much evidence of thinking skills in classroom practices fall in first observation of 5 years old students. In this observation, researcher found that teacher is able to provide opportunities for students to ask questions. Students are excited during the question and answer session. On the other hand, most observation found only some and very little observation of thinking skills being practice in the classroom with minimum. Therefore, there are minimum practices of thinking skill being found in the classroom. Students are unable to learn and practice with less opportunity to expose to critical and creative thinking skills environment. Thinking skills are unable to be taught once (Aizikovitsh-Udi and Amit, 2011; H.N, 2014) but should be embedded in an on-going process of learning. In order to maximize the opportunities for student thinking, classroom approaches including resources and techniques are helpful in developing thinking skills (Taggart *et al.*, 2005).

5. DISCUSSION

The purpose of this study is to identify the natural learning process through critical and creative thinking among the children. Overall, creative and critical thinking skills were seldom applied in the daily lessons. There are a number of negative responses regarding on the definition and experiences towards critical and creative thinking skills. Teachers are unable to differentiate the meaning of critical and creative thinking skills. However, teachers have mentioned a number of creative teaching methods such as art and craft making, real material or pictures presenting, singing and dancing. Due to the limitation of thinking skills, teachers may not be able to educate the children effectively. In order to become a model for the students (Tok, 2012), an educator is encouraged to possess good thinking skills to help students in applying the same on daily lessons. One research done by Nicholas Zill (2007), stated that teachers' quality with certain degree of early childhood background have positive correlation classroom quality and child outcomes. Therefore, teachers need to obtain certain degree in early childhood education.

Students were not educated effectively on critical thinking, problem solving and decision making. Teachers were more inclined to provide information and knowledge to students directly, instead of letting them to think critically and creatively. Students' discipline, learning attitudes and behaviours also affect the learning ability in the classroom. According to Cheung & Leung (2014), traditional Chinese cultural values also appeared in "Discipline" dimension that caused teachers a dilemma in choosing between creativity and traditional education.

The proposed observation checklist chart was focused and examined the qualitative data of the classroom setting, strategies and teaching practices of creative and critical thinking skills in the lesson. Teachers are making an agreement that creative and critical thinking skills are fostered significantly in the classroom.

In order to foster creative and critical thinking among children, parents, school management teams and the appropriate facilities provided are playing the important role. However, most parents concerned more about academic achievements rather than the implementation of natural learning activities such as thinking skills and learning abilities of students. In addition, main concerns such as the students' abilities to cope with the syllabus, examination scores and the chance to pick the famous schools for their children become the norm for most of the parents. Due to Malaysia's education culture that focused on academic achievements for long, motivation and initiative from management team is important to support the teachers, especially those who are lacking of adequate knowledge, experiences or abilities on thinking skills.

This study serves to alert kindergarten and related practitioners to the need for more teacher self-evaluation and curriculum scrutiny, if children are to be adequately supported in their early critical thinking skills.

CONCLUSION

This preliminary investigation into aspects of kindergarten children's critical thinking in learning and teaching, as one feature of adjustment to the demands of primary school, has served to highlight some parameters for further investigation. Several factors emerged from this study's interviews and classroom observations of students and teacher at a kindergarten that contributed to a greater understanding of learner, teachers and the sphere of critical thinking. Constructions that emerged from this study show that thinking skills are not fully applied in the daily lessons. Teachers are not equipped with proper skills to improve the thinking skills among students. This study has been able to identify the current practice limitations in the kindergarten and the importance of fostering thinking skills in the early years of learning. Educators should be well-trained in order to integrate effective thinking skills into their teaching practices (Burke & William, 2008). When thinking skills are taught in early years, young children are able to gain the abilities to think critically and creatively at present and their adulthood in the future. With the understanding that critical thinking is a desired result of education, we will need to find solutions to help students improve their skills to think critically and their nature to use these skills. The larger study will therefore include a consideration of alternative teaching approaches and materials, and attention to the differences in how children being enforced in critical thinking.

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