

## **PRACTICES OF CRITICAL THINKING SKILLS IN KINDERGARTEN**

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Critical thinking skills was referred as good thinking that crucial for problem solving and decision making. The core of teaching thinking skills to children is to enhance their curiosity, enables them to reason better, and helps them to be responsive to information and not just acknowledging it. The current preliminary study aimed to investigate critical thinking among kindergarten children. Qualitative methods such as observation and interview were implemented in this study for data collection. An observation checklist was used to record student's daily learning activities on critical thinking. Meanwhile, opinions on critical thinking practices in the current kindergarten curriculum were obtained through an interview which involved three teachers and a principal. Findings from interview revealed that teachers are lack of knowledge and skills on enforcing critical thinking skills among kindergarteners. In addition, the insufficient resources and environment to support instructional further impede the teaching of critical thinking skills to the children. The result of this study provides some elementary information regarding young children's capabilities to think critically.

**Keywords:** critical thinking, curriculum, kindergarten

### **INTRODUCTION**

Today's improving conditions of education highlight the need to reinforce children's thinking in the curriculum. Young children are found capable 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 good, independent and effective thinkers (Zahra, Yusooff & Hasim, 2012; Birbili, 2013; Fisher, 2005; Bonney & Sternberg, 2011). 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).

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Early childhood education practices should infuse the elements of critical and creative thinking skills in the curriculum (Lin, 2011; Adam, 2013). The relationship

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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. In conjunction with that, teachers' personal conviction was found affected their choices of classroom management approaches (Eveyik-Aydin, Kurt & Mede, 2009). Therefore, teachers are able to produce the greatest learning gains in thinking, if they believe that students are capable to think.

A study was conducted by Cheung & Leung (2014), teachers' personalities are able to 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). 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 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 questioning skills are the effective instructional strategies (Horng, Hong, Chan Lin, Chang, and Chu, 2005). Furthermore, educators should understand the readiness 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).

Development of young children's thinking and problem solving skills is an alternative approach in the curriculum, instead of, only applying good teaching (Taggart, Ridley, Rudd and Benefield, 2005). Children need to be given opportunities with reading materials by helping them to question and think (Rosnani

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& Suhailah, 2003). Furthermore, with proper learning to think, children able to question and reason systematically (Fisher, 2005). A study has shown evidence that students engage with critical thinking skills after integrate the teaching critical thinking in Mathematics subject (Aisikovitsh-Udi and Amit, 2011). Hence, thinking skills can be infused across the curriculum by systematically identifying opportunities within the normal curriculum for thinking skills development.

Supportive environments in an educational setting were found significant impact in fostering children's critical thinking skills (Lin, 2011). Supportive environment includes leader, administration and parents. School administrative and authority must establish the atmosphere for educators to do creative work, in order to promote thinking 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 was found statistically significant correlations with children's performance in the classroom includes critical and creative thinking (O'Donnell, 2011).

Nowadays, learning environment should support and challenge the learner's thinking. However, the issue of fostering thinking skills in learning environments remains problematic. Learning activities that foster higher order thinking skills such as creativity will be eliminated if teachers continue with conventional approach such as memorizing materials and focusing on the examination rather than the brain compatible strategies (Rosnani & Suhailah, 2003; 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 recognized 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.

### **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?

### **METHOD**

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

### **PARTICIPANTS**

One principal 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.

### **DATA COLLECTION**

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

### **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.

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Subthemes were then developed from the main ideas and themes were recognized from the subthemes. Analysis of the interview transcripts revealed three main themes according to the participants' opinions, there are: practices and experiences, classroom practices, and school environment supports.

### **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 on how critical thinking skill was implemented in classroom practice. The observations 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*.

### **RESULTS AND FINDINGS**

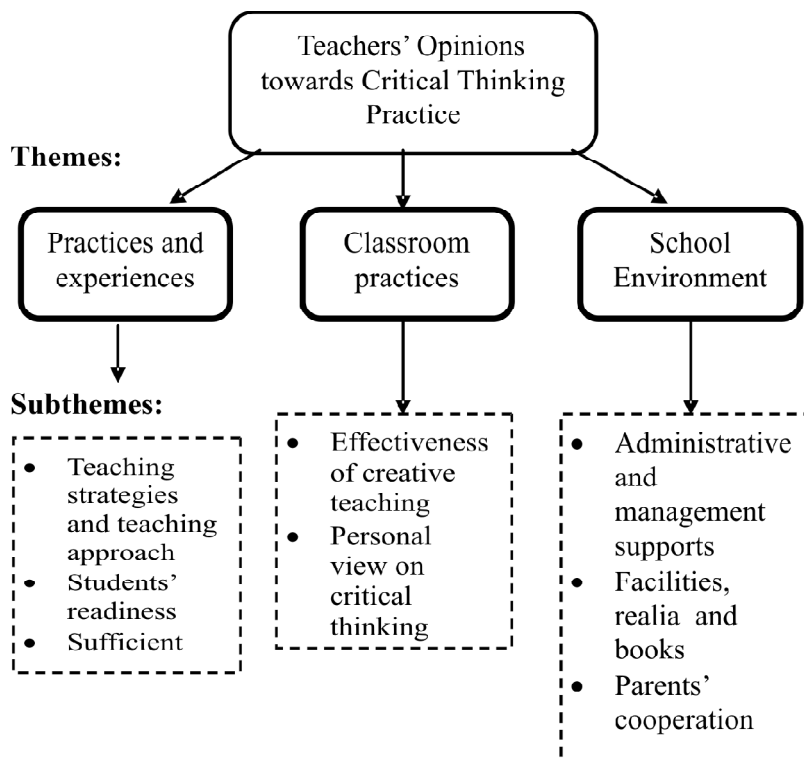
There were 3 teachers and one principal were interviewed in this study. The data gained in the study are according to the research problem. The researcher analyzed the responses given then categorized them into three major themes and sub-themes as shown in *Figure 1*.

#### **Interviews of Kindergarten Teachers**

##### ***The Opinions of teachers towards practices and experiences on critical thinking***

Teachers are incapable to define and differentiate the meaning of critical thinking and creativity. Most teachers commented that creativity was an important element to enhance learning among kindergarteners. A senior teacher with 10 years teaching experiences, incapable to define and understand the meaning of critical thinking. Principal commented that most of the teachers do not have right foundations on early childhood, knowledge background and lack of training. Generally, most teachers gained experience through on the job training. Besides, quarterly in house training was provided by internal senior teachers with limited knowledge in thinking skills. Critical 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 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. However, the critical thinking approaches were neglected by the teachers. Additionally, the principal commented "Teachers



**Figure 1:** Themes and sub-theme of teachers' interview

themselves are without critical thinking skills, thus unable to produce critical thinking students”.

### ***The Opinions of teachers towards 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.

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Student academic readiness affects both student's achievement and student's attitudes about learning. Teachers commented that some children are fast learner and able to work independently, while some are weak and may not ready for learning. Family background, language proficiency and ability in learning can be a hindrance for some children were unable to follow the instruction in the classroom. Therefore, teachers should understand each student's readiness in order to deliver knowledge to them accordingly. Although, teachers were provided with supported teaching aids such as computer, however, they still unable to produce effective teaching on critical thinking with limited time and knowledge. Most teachers followed the classroom schedule fixed by the school management without much personal inputs. Time constraints posed a big challenge to teachers and students.

### *The Opinions of teachers towards school environment support on critical thinking*

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 judgment and question on teachers' performances has caused teachers unwilling to make new changes in teaching.

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

### **Practices of Critical Thinking Skill 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 analyzed by using observation checklist by researcher.

There are two categories observed 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 in 5 years old students' classroom. 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. However, most observation found minimum practices of thinking skills in the classroom.

With the minimum opportunities to practice thinking skill being found in the classroom, students are unable to learn and cultivate the proper critical thinking skills in their daily learning. However, thinking skills are unable to be taught once but should be embedded continuously in the process of learning (Aizikovitch-Udi & Amit, 2011; Alghafri & Ismail, 2014). Thus, in order to maximize the opportunities for student thinking, classroom approaches including resources and techniques are helpful in developing right thinking skills (Taggart, Ridley, Rudd, & Benefield, 2005).

## **DISCUSSION**

In this study, students were found educated ineffectively on critical thinking, problem solving and decision making. Teachers were more inclined to provide direct information and knowledge to students, instead of having them to think critically. Teachers are still in a dilemma in choosing between creativity of teaching and traditional education of discipline.

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

Besides, parents, school management teams and the appropriate facilities and resources provided are playing the important role in fostering critical thinking among children. However, most parents yet concerned more about academic achievements rather than the implementation of thinking skills 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 alarm 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.



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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. Although teachers are provided with important gadgets in helping teaching thinking skills such as computer, however, without proper thinking knowledge it will not integrate effective thinking skills in the classroom. Therefore, teachers should be well-trained by incorporating thinking skills in their teaching strategies. (Burke & Williams, 2008; Mayuhddin, Zaidatol, Elias, & Konting, 2004). Young children are capable to gain the abilities to think critically at present and their adulthood in the future, when thinking skills are taught in early years. Thus, we will need to find solutions to help teachers to improve in teaching thinking skills, and students to improve their skills to think critically. 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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