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A COMPARATIVE STUDY OF CHILDREN'S COGNITIVE ABILITY IN MALAYSIAN PUBLIC AND PRIVATE PRE-SCHOOLS

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ABSTRACT

Background and Purpose: A child's cognitive, physical, and socioeconomic development must be stimulated as early as possible to ensure it is on the right path. However, only a few studies have been conducted to investigate the difference in cognitive abilities between public and private pre-schoolers in Malaysia.

Methodology: A total of 121 students aged five to six were selected from public and private pre-schools in Kuala Lumpur using a purposive sampling method. The children's general cognitive abilities were assessed using the McCarthy Scales of Children's Abilities (MSCA).

Findings: The findings showed that the general cognitive abilities of public and private pre-school children are at a moderate level. The results also indicated no statistically significant effect of the type of pre-school, parents' level of education, and parents' income level on children's cognitive ability.

Contributions: This research provides insights into the children's cognitive ability in some selected public and private preschools in Malaysia. The outcome is essential in determining the general cognitive abilities of the children. Possible future works are suggested to explore the topic from different perspectives in order to improve children's cognitive ability.

Keywords: Cognitive abilities, pre-school children, type of pre-school, parents' education, parents' income.

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1.0 INTRODUCTION

Countries with high cognitive ability contribute to national income because they are more efficient and productive compared to the countries with low cognitive ability or low IQ. Differences in national average cognitive abilities have resulted in large productivity gaps between countries, particularly global discrepancies in productivity growth. This is because differences in cognitive ability will continue to exacerbate the imbalance between rich and poor countries (Jones & Schneider, 2006; Lynn & Vanhanen, 2002, 2006). Since cognitive capacity is the most important human capital variable for economic growth, enhancing the national cognitive capacity of developing countries can be the best approach to reduce the economic gap globally. Focusing on a child's cognitive development, a child's cognitive development should be stimulated as early as possible because cognitive is a key component that will determine all other aspects of development in a child, given that it is a key determinant of all aspects of a child's development, that is important in shaping the child's identity in the future.

Many researchers have found that children's cognitive abilities are determined by their socioeconomic status (SES) of their parents (Carlsson et al., 2015; Cunha & Heckman, 2007; Flynn, 2007). This is because the cognitive ability and emotional resilience of humans varies based on their socioeconomic context (Farah, 2017). Previous studies have further confirmed the positive correlation between parents' level of education and children's cognitive abilities (Bacharach & Baumeister, 1998; Bojuwoye & Narain, 2008; Johnson et al., 2011; Midraj & Midraj, 2011; Sclafani, 2004). Furthermore, along with physical maturity, activities such as learning through play, physical activity, and free play are activities that contribute to a child's cognitive development. Thus, a child's cognitive development, socio-economic development, and physical development need to be cultivated at the earliest age.

It has been established that schools play a critical part in developing children's language progress, cognitive function, social skill, and emotional adjustment (Burchinal et al., 2010; Guxens et al., 2009; Osorio-Valencia et al., 2018; Prasad, Kramer, & Ewing-Cobbs, 2005; Wishard et al., 2003). Findings have also revealed that toddlers with early school experience

display improved cognitive and language skills compared to children who have never joined school (Burchinal, Lee, & Ramey, 1989; Herry, Maltais, & Thompson, 2007). In other words, pre-school play an important and undeniable role in shaping children into balanced human beings physically, emotionally, spiritually, and intellectually. Therefore, there is a need for parents need to send their children to pre-school to be educated.

Pre-schooling was found to deliver educational experiences to children aged four to six, wherein they can gain excellent development, master basic skills, and foster a positive attitude in preparation for their next stage of life. Considering the significance of early education, several attempts have been made to ensure that children get the best learning experiences. For example, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has launched an initiative called Education for All (EFA) that provides various opportunities and assistance for newly born babies up to six-year-olds to be physically, emotionally, socially, and intellectually developed (UNESCO & UNICEF, 2012). Its goal attempts to provide three directions for ECCE policy in countries: 1) the word 'expanding' indicates expansion of access, number and types of services and availability of resources for ECCE to all children, regardless of their geographical location, sex, health or nutritional status, disabilities or any discriminatory criteria; 2) 'improving comprehensive ECCE' refers to the quality of existing and new programmes and services, and 3) 'especially for the most vulnerable and disadvantaged' refers to the issue of equity and ensuring that all children, including children who are living in disadvantaged circumstances, are specifically addressed.

In Malaysia, the early education of children has received the attention of the government; accordingly, various initiatives have been carried out to meet children's needs. For instance, the Early Childhood Education Plan for Kindergarten Children 2021-2030 plans to strengthen the elements of nationality, unity and values in the teaching and learning curriculum of *perpaduan* kindergarten, strengthening teaching and learning methods, manage the management and operation of *perpaduan* kindergarten, strengthen *perpaduan* kindergarten cooperation with the community, and strengthen the mechanism for monitoring and evaluation of *perpaduan* kindergarten.

Education for children is categorized into two main groups, namely '0 to 3 years' and '4 to 6 years'. The first group is supervised by the two Women, Family and Community Development (KPWKM) through the Department of Social Welfare (JKM), which manages all registered childcare centers in Malaysia, i.e., *Taska*. Meanwhile, the second group, placed in pre-schools called *Tadika*, are supervised by the Malaysian Ministry of Education (MOE),

the Ministry of Rural and Regional Development (KKLW), and the Department of National Unity and Integration (JPNIN) (Abdullah, 2018).

As an alternative to government childcare centers and pre-schools, parents are afforded the choice of private pre-schools. Though these pre-schools are managed under private agencies, they must adopt the National Pre-school Standard Curriculum (KSPK) as stipulated under the National Education Act. Every additional program offered in private pre-schools must also obtain permission from the Malaysian Ministry of Education (MOE) ("Early Childhood Care & Education (ECCE)", n.d.). Since private pre-schools are profit-making early childhood education centers which are reputed to have higher-quality teachers, they tend to draw children from families with intermediate and high socioeconomic backgrounds. Meanwhile, children from low socioeconomic backgrounds typically attend government-funded childcare centers or pre-schools, which provide free education and nutritional supplements (García & Weiss, 2017).

Comparative studies have been conducted to investigate the difference in cognitive abilities between public and private pre-schoolers (Browne & Wong, 2017; Loynes, Dudman, & Hedges, 2021). However, only limited studies of a similar nature have taken place in Malaysia. In this regard, Ab Aziz and Yussof (2013) surveyed 40 three-year-old children, as well as their parents and caregivers, from four types of childcare centers, which are workplace-based childcare centers, community-based childcare centers, institution-based childcare centers, and home-based childcare centers. They utilized the *McCarthy Scales of Children Abilities (MSCA)* that was translated into the Malay language. The results of the study indicated that children's cognitive abilities in private childcare centers are higher than in public childcare centers. Tomar and Kumari (2017) reported similar findings in their study involving 80 pre-school children from four franchise pre-schools. Specifically, the children in international franchise pre-schools were found to perform better than the children in national franchise pre-schools. This indicates the cognitive skills of the children is left far behind as compared to other countries, and the gap needs to be addressed.

Additionally, Richardson (2002), Turkheimer et al. (2003), and Hanscombe at al. (2012) stated that children's general cognitive ability is influenced by the family socio-economic status (SES). Children from less fortunate family backgrounds exhibit lower scores in general cognitive ability tests compared to their peers from families with high SES (Bradley & Corwyn, 2002; Schoon et al., 2012), with their achievements even declining over time. Apart from SES, Anderson, Case, and Lam (2001) claimed that there is a link between parents' education level and children's cognitive ability, due to educated parents' ability to assist their children in

homework. In support of this notion, Santos et al. (2013) argued that mothers' level of education is one of the contributing factors to children's cognitive development.

A comparative study of the level of cognitive ability between many different educational institutions found that some local researchers had conducted studies focusing on the types of preschools. For example, Hutagalung and Md Isa (2017) and Poh et al. (2019) found that there is a difference in the cognitive abilities of government and private preschool children. The recognition of this literature gap prompted the current study to examine: (1) the differences in cognitive abilities between public and private pre-school students in Malaysia, and (2) the influence of parents' level of education and income on children's cognitive abilities.

The findings of this comparative study may provide insights to the Ministry of Education and other relevant parties on the difference in the cognitive abilities of children in public and private pre-school. The findings from this study can serve as a reference to plan activities and programs to enhance the domain of cognitive ability of children in public or private preschools. Preschools that have children with high cognitive ability can be used as an example to help pre-schools that have children with low cognitive ability.

2.0 GENERAL COGNITIVE ABILITY

According to Rindermann (2013), general cognitive ability includes the ability to think, the possession of true and relevant knowledge, and the extent to which that knowledge is used appropriately. In this study, children's cognitive ability focused on their general cognition, which is a combination of three domains adapted from the McCarthy Scales of Children Abilities (MCSA) instrument, namely verbal, perceptual, and quantitative (McCarthy, 1972). Notably, these three domains are included in the National Pre-school Standard Curriculum of Malaysia to identify children's general cognitive abilities according to chronological age and to detect any potential to strengthen their overall progress. Student capacities and limitations in the learning process are also examined to measure students' progress in their cognitive abilities (Ministry of Education Malaysia, 2008).

2.1 Cattell-Horn-Carrol Cognitive Capacity Theory

In the 1940s, Cattell (1971) divided general cognitive ability into two sub-domains, namely fluid intelligence (Gf) and crystallized intelligence (Gc). Fluid intelligence (Gf) involves intelligence that is closely related to individual biological and neurological factors, while crystallized intelligence (Gc) is based on formal and informal education acquired by a person influenced by culture (Cattell, 1971). Then, in 1965, John Horn expanded this Gf-Gc model

into four additional capabilities including visual perceptual ability (Gv), short-term memory (Gsm), long-term memory (Glr) and processing speed (Gs). After that, he added the ability to process hearing (Ga) into this model and further refined the meaning of Gv, Gs and Glr.

In the 1990s, Horn (1991) added another recent ability that represents an individual's speed in responding and making decisions known as Gt. Then, subsequent additions involve quantitative ability (Gq) and read-write ability (Grw) on the model based on the results of its latest study. Finally, the Gf-Gc theory has evolved from two factors to eight factors known as the Cattell-Horn Gf-Gc theory (Horn, 1991). The Cattell-Horn Gf-Gc theory is further renewed with the results of Carroll's factor analysis study known as the Three Strata Theory, which divides cognitive ability into three main strata: (1) strata I is known as 'narrow' narrow ability; (2) strata II as 'broad' ability, and strata III as 'general' ability G. The combination of these three theories has resulted in a new model known as the Cattell-Horn-Carroll Theory of Cognitive Ability (CHC). One of the important features of this theory is that it is dynamic rather than static, which has led to various studies being done to update and improve this model.

2.2 Relevance of the CHC Theory of Cognitive Ability

The Cattell-Horn-Carroll (CHC) cognitive ability theory was developed as a result of the ongoing studies of Raymond Cattell, John Horn, and John Carroll (McGrew, 2005). This theory is the most comprehensive theory of cognitive ability to date, and has been recognised and supported by extensive empirical studies (Flanagan & Dixon, 2013). As such, it has been widely used as the basis of any study involving cognitive ability testing. In fact, recent studies have used this theory to predict the level of cognitive ability among individuals who face learning problems (Flanagan & Harrison, 2012).

This theory was chosen as the theoretical framework of the study because the MSCA test was also seen to be inspired by the concept of a combination of all narrow cognitive abilities to produce one general cognitive ability known as the g-factor. CHC cognitive ability theory looks at the cognitive development and cognitive abilities of children from birth to 11 years of age. This is consistent with our current study, which involves children aged 5 to 6 years old. In fact, this theory is also seen to be able to describe cognitive ability from various angles including verbal, perceptual and quantitative skills where these three aspects will be studied in depth in this research.

3.0 METHODOLOGY

3.1 Participants

This study employed the cross-sectional quantitative survey method. A purposeful sampling method was used to select children aged 5 to 6 years old as the respondents in this study. The criteria involve recommendations from preschool teachers, children who were willing, and those who had parental consents. A total of 49 girls (40.5%) and 72 boys (59.5%) were involved in this study. Of the 121 children, 55 (45.5%) were from government pre-schools, while 66 (54.5%) were from private pre-schools.

Before the commencement of the study, permission was obtained from the schools' principals to conduct the research at the pre-schools. The study's procedures were then explained to the pre-school teachers. Next, a demographic questionnaire was distributed to parents to acquire data on their backgrounds and socioeconomic status. Once the demographic questionnaire was completed, a test session was conducted with five testers and one trained psychologist using the MSCA.

Subsequently, each measurement session was conducted simultaneously by five tester who possessed a Master of Early Childhood Education. Each tester was trained on the measurement of the MSCA by a senior psychologist. The activities were carried out for an hour in the morning. If a child felt tired during the activity, the session was stopped. However, throughout the activities, all the children cooperated well. They enjoyed themselves as the activities were in the form of play. The activities were scheduled for three days in a week, and five children were involved in one day. The implementation of activities was dependent on the children's readiness levels as well. In other words, when a child is not ready to be tested, tester will proceed to the next child until the first child is emotionally stable and fully ready. The duration for the whole study carried on for 8 weeks by using one-to-one method.

3.2 Instrumentation

The MSCA instrument (McCarthy, 1972) was used to measure the cognitive abilities of pre-school children. This instrument measures the cognitive and motor development of children aged 2.5 to 8.5. It provides scales for the general intellectual level of children, their potentials, their limitations, and their special abilities (Goh & Youngquist, 1979). Kaufman and Kaufman's (1977) study reported that the MSCA instrument provides a balanced measurement scale for both males and females of the same age. As such, the MSCA does not have any gender bias and assesses children's general cognitive achievement as a whole. The MSCA has also been utilized in recent studies to evaluate cognitive abilities and psychomotor development

among pre-school children (Andiarena et al., 2017; Malin et al., 2018; Kandawasvika et al., 2012; Torres-Olascoaga et al., 2020).

Table 1: Types of question and task descriptions of the verbal domain (highest score = 115)

Type of Question	**Task Description**
Scan memory card	Children mention the name of the object from the picture (score: 6)
Word knowledge	Children give the meaning of words or things (score: 29)
Verbal memory	Children give the meaning of words or things (score: 15) Children retell a story that was read to them (score: 11)
Verbal explanation	Children retell as many things as they relate to a particular category in 20 seconds (score: 36)
Paradoxical	Children complete sentences with words (e.g., hot sun, ice cream) (score: 18)

Source: Adapted from McCarthy (1972)

The MSCA contains 15 separate tests that are categorized into three specific domains, namely verbal, perceptual, and quantitative (McCarthy, 1972) as shown in Table 1, 2 and 3. The *verbal domain* in this instrument is aimed at measuring children's fluency and listening ability. This five-question test (see Table 1) requires testers to stimulate and provide verbal information to which respondents are asked to respond orally. In addition, the verbal domain includes deductive reasoning, divergent thinking, as well as short-term and long-term memory. Scoring points out of a total score of 115 are given when a child is able to complete the task.

The *perception skills domain* tests the ability of respondents to identify an appropriate response to a particular stimulus. This test is similar to the dichotomous verbal achievement test used by Wechsler (Goh & Youngquist, 1979). Respondents are asked to identify the left and right limbs, draw geometric shapes and pictures of children of the same sex as themselves, and replicate the testers' actions. The list of specific tests under this domain, that amount to a maximum score of 80, is presented in Table 2.

Table 2: Types of question and task descriptions of the perception skills domain (maximum score = 80)

Type of Question	**Task Description**
Arranging blocks	Children arrange block according to a specific form (maximum score: 10)
Jigsaw puzzles	Children arrange picture puzzle cards (maximum score: 7)
Taping sequence	Children imitate taping sequence by the tester on the xylophone (maximum score: 12)
Right-left orientation	Children show using right and left limbs skills (maximum score: 19)
Draw design	Children draw pictures of their peers of the same sex (maximum score: 20).
Conceptual grouping	Children classify objects according to size, colour, and shape (maximum score: 12)

Source: Adapted from McCarthy (1972)

The *quantitative domain* involves basic arithmetic concepts (e.g., addition, subtraction, multiplication, and division), verbal problem-solving, and memory of numbers (Goh & Youngquist, 1979). The total score for this domain is 53, for which the specific tests are described in Table 3.

Feedback given by the respondents for each item was recorded in the MSCA form. This form was analyzed, wherein the raw scores obtained were converted to standard scores according to age categories. According to the MSCA manual, cognitive score was calculated based on the biology age of the children on all 15 tests given. This is due to different biology age of children perform differently, for instance children age 5 years 2 months are different 5 years 4 months in terms of their cognitive ability. Thus, the General Cognitive Index (GCI) that represents children's general cognitive ability is produced by combining verbal (V), perception (P), and quantitative (K) domain scores.

Table 3: Types of question and task descriptions of the quantitative domain (maximum score = 53)

Type of Question	**Task Description**
Number of questions	Children answer questions based on information or calculation of numbered figures (maximum score: 24)
Numerical memory	Children mention the order number specified by the tester (maximum score: 20)
Counting and sorting	Children calculate and collect the same object in the group (maximum score: 9)

Source: Adapted from McCarthy (1972)

The GCI has the same parameters as the conventional intelligence quotient (IQ) test (Goh & Youngquist, 1979). This score represents the actual cognitive abilities of the respondents, as in other conventional IQ tests (Davis & Rowland, 1974; Goh, 1976; Kaufman, 1975; McCarthy, 1972). For this study, the instrument was translated from English into Malay and adapted to the Malaysian context (Shamsul Bahari et al., 1997).

3.3 Validation Process

Reliability concerns the extent to which an instrument yields a stable and consistent result over multiple trials (Taherdoost, 2016). Reliability is also concerned with repeatability. A scale is said to be reliable if repeated measurement will give the same result (Taherdoost, 2016). Reliability is also important as it indicates consistency across the parts of a measuring instrument (Huck, 2008).

In McCarthy's (1972) original study, the reliability of the MSCA was .93. In addition, other studies have recorded reliability values ranging from .75 to .91 for all GCI domains (Chew et al., 2018; Hutagalung & Md Isa, 2017; Kandawasvika et al., 2012; Kamaruddin, 2015; Shamsul Bahari et al., 1997; Valencia, 1983). Since a value above .80 indicates the high reliability of an instrument (Pallant, 2011), the MSCA is thus a valid and reliable measure of children's verbal, perceptual, and quantitative abilities.

To ascertain the reliability of the MSCA for this study, a pilot study was conducted at two separate pre-schools in Kuala Lumpur prior to the actual study. A total of 30 pre-school children aged five to six participated in the pilot study upon receiving parental consent. The MSCA's Cronbach's alpha coefficient scores for the pilot test were .881, .808, and .810 for the

verbal, perception, and quantitative domains, respectively; therefore, it was deemed a reliable instrument for this study.

As for inter-observer and inter-tester reliability during the actual data collection process, data was reviewed regularly to optimize quality control. Inter-tester reliability was enhanced by strict adherence to the standardized scoring system in the MSCA manual. The testers were also trained in test administration and test set order.

3.4 Data Analysis

The Statistical Package for the Social Sciences (SPSS) version 24 software was used for data analysis in this study to produce descriptive and inferential statistics.

4.0 FINDINGS

4.1 Level of General Cognitive Abilities of Public and Private Pre-Schoolers

Descriptive analysis was conducted to determine the cognitive ability level of public and private pre-schoolers. Table 4 shows that the cognitive ability of children in both public and private pre-schools is at the moderate level, at 30.9% for public pre-school children and 33.3% for private pre-school children.

Table 4: Level of cognitive ability of children in public and private pre-schools (N = 121)

Level	**Public** **N (%)**	**Private** **N (%)**	**Overall** **N (%)**
Very Excellent	13 (23.6)	17 (25.8)	30 (24.8)
Excellent	8 (14.5)	10 (15.2)	18 (14.9)
High Moderate	9 (16.4)	10 (15.2)	19 (15.7)
Moderate	17 (30.9)	22 (33.3)	39 (32.2)
Low Moderate	2 (3.6)	3 (4.5)	5 (4.1)
Weak	6 (10.9)	4 (6.1)	10 (8.3)

4.2 The Difference in General Cognitive Abilities between Public and Private Pre-Schoolers

To detect any statistically significant difference in the cognitive ability of pre-schoolers with reference to the type of pre-school, an independent sample *t* test was carried out. Table 5 shows that there is no significant difference between the cognitive ability of public (*M* = 111.36, *SD* = 19.29) and private (*M* = 112.52, *SD* = 18.18) pre-schoolers [*t* (119) = -0.331, *p* > 0.05].

Table 5: Independent sample t test result for pre-schoolers' cognitive ability and type of pre-school

Type of Pre-school	**N**	**Mean**	**Std Deviation**	***t***	***df***	***p value***
Public	55	111.36	19.29	-.331	119	.741
Private	66	112.52	18.88			

A two-way ANOVA was then run to examine the effects of type of pre-school and father's level of education on children's cognitive ability. Table 6 reports no significant difference between the effects of type of pre-school and father's level of education on children's cognitive ability [*F* (3, 113) = 0.26, *p* = .85]. However, the father's level of education affected the cognitive ability of their children [F (3, 113) = 2.843, p = .041].

Table 6: Cognitive ability differences by type of pre-school and father's level of education

Two-Way ANOVA	***Sum of Squares***	***df***	***Mean Square***	***F***	***p value***
Intercept	915819.992	1	915819.992	2624.446	.000*
Type of pre-school	68.406	1	68.406	.196	.659
Father's level of education	2976.141	3	992.047	2.843	.041*
Type of presch* fathers' edu	274.852	3	91.617	.263	.852
Error	39432.185	113	348.957		

Another two-way ANOVA was performed to examine the effects of the type of pre-school and mother's level of education on children's cognitive ability. Table 7 shows that there is no significant difference between how type of pre-school and mother's level of education influence children's cognitive ability [*F* (3, 113) = 0.01, *p* = .99]. However, the mother's level of education affected the cognitive ability of their children [*F* (3, 113) = 6.886, *p* = .00].

Table 7: Cognitive ability differences by type of pre-school and mother's level of education

Two-Way ANOVA	***Sum of Squares***	***df***	***Mean Square***	***F***	***p value***
Intercept	478153.564	1	478153.564	1481.810	.000*
Type of pre-school	67.893	1	67.893	.210	.647
Mother's level of education	6665.889	3	2221.963	6.886	.000*
Type of presch* mothers' edu	8.094	3	2.698	.008	.999
Error	36463.084	113	322.682		

The third two-way ANOVA analysis was performed to examine the impacts of the type of pre-school and parents' income level on children's cognitive ability. Table 8 exhibits that, yet again, there is no significant difference between the impacts of type of pre-school and parents' income level on children's cognitive ability [F (3, 112) = 1.59, p = .19].

Table 8: Cognitive ability differences by type of pre-school and parents' income level

Two-Way ANOVA	***Sum of Squares***	***df***	***Mean Square***	***F***	***p value***
Intercept	1043563.296	1	1043563.296	3043.269	.000*
Type of pre-school	43.311	1	43.311	.126	.723
Parents Income level	3125.586	4	781.397	2.279	.065
Type of presch* income level	1632.125	3	544.042	1.587	.197
Error	38405.772	112	342.909		

5.0 DISCUSSION

This research aimed to examine the differences in cognitive abilities between public and private pre-school students in Malaysia, as well as the influence of parents' level of education and income on children's cognitive abilities. First, the general cognitive abilities of public and private pre-school children were found to be at a moderate level according to instruments from the McCarthy Scales of Children Abilities (MCSA) (McCarthy, 1972).

Referring to Cattell-Horn-Carroll's theory of Cognitive Ability (CHC), it can be concluded that the surveyed government and private preschool children in Kuala Lumpur are capable in understanding things by the rules, and are also quite capable of problem solving. The children are also able to reason inductively and deductively by involving concepts such as mathematics and its properties. In addition, children are also capable of understanding general knowledge, involving general development such as understanding of words, sentences and paragraphs (does not require reading) in language skills, as well as the extension of

comprehensible vocabulary in terms of correct word meaning, listening and understand verbal communication, speak in real situations in an adult manner, have knowledge or awareness of the grammatical features of language, as well as have sufficient verbal skills (McCarthy, 1972). Neuman, Copple, and Bredekamp (2000) looked at the relationship of play with literacy skills involving symbols, sound structures and printed materials. Language skills and literacy can be nurtured through the play of language sounds, symbols and concepts of printed materials. Christie and Roskos (2013) also argue that most children are able to identify written words as they play. These findings are similar with those of the previous studies by Menon and Abdullah (2003), Mashburn et al. (2009), and Barachetti and Lavelli (2010). This means the findings show the same results that children who have a moderate cognitive ability may master literacy and numeracy skills accordingly. This fit the Cattell-Horn-Carroll's theory of Cognitive Ability (CHC) either in Malaysia or abroad.

Second, the results indicated that type of pre-school does not affect children's general GCI, as there was no significant difference in the cognitive abilities of public and private pre-school children. In other words, children from public and private pre-schools have the same level of cognitive ability. This result contradicts that of Ab Aziz and Yussoff (2013), who found differences in children's cognitive abilities across four different pre-schools, such that children's cognitive abilities in private childcare centers appeared to be higher than in public childcare centers. Similar results were also reported in Tomar and Kumari's (2017) study, where children in international pre-schools were found to perform better than those in national pre-schools.

Nevertheless, it is speculated that teachers' level of education and experiences are on par in government and private pre-schools. This may be due to the similar level of education and teaching experience among the teachers in both pre-schools in Malaysia. Under the Malaysia Education Blueprint 2013-2025 (Ministry of Education Malaysia, 2013), the MoE set a target that preschool teachers must possess minimum a diploma in Early Childhood Education by the year 2020. For those who only have Sijil Pelajaran Malaysia (SPM), they are required to attend the Basic Child Care Course which has been implemented since 1988, and is now replaced by the PERMATA Care Course which came into effect on 1st January 2013. This is the minimum qualification for caregivers/educators in TASKA, whose purpose is to improve knowledge, skills and form a good caring attitude, so that they can understand and perform the task with efficiency. Under the same training courses, the public and private preschool teachers obtain the knowledge of early childhood education in general to guarantee the quality of childcare and teaching (Mustafa et al., 2017). Educational background and additional knowledge included in

courses and training of caregivers/educators have an effect with the quality of care and childcare (Manning et al., 2017; Thomason & La Paro, 2013).

Third, father's and mother's level of education indicated significant difference on children's cognitive ability without the interaction of type of pre-schools. These findings are parallel to Anderson et al.'s (2001) postulation that there is a link between parents' education and children's cognitive ability on the basis of parents' ability to help their children with homework. On the other hand, mother's level of education indicated a significant difference on children's cognitive ability with an interaction with type of pre-schools. The result also indicated no significant difference when the interaction between type of pre-school and father's or mother's level of education was analysed in regard to children's cognitive ability. Santos et al. (2013) argued that a mother's level of education is a key contributing factor to children's cognitive development. Educated mothers have a high IQ, which can be passed down to their children genetically. More educated mothers also have a higher interest in education and tend to motivate their children in learning (Hutagalung & Md Isa, 2017).

Another important finding was that there is no significant difference between the type of pre-school and parents' income level in terms of their effect on children's cognitive ability. In other words, it can be said that the children of low-, middle-, and high-income parents in this study have similar cognitive abilities. This finding was similar to Duncan, McClelland, and Acock (2017) who found parents' income did not influence children academic achievement, as compared to other factors such as age, gender, and education in the study. The results of the study maybe due to the learning environment in the studied preschools, which are similar. Therefore, there is no significant difference between parents' income level and their children's cognitive ability.

6.0 LIMITATION OF STUDY

There were some limitations in conducting this study. First, the researchers focused on the children's general cognitive abilities without taking into account of the influence of early experiences received at home such as parent-child interaction, home environment conditions, number of siblings, and formal education experiences in kindergarten. In addition, only children aged 5 to 6 years from public and private pre-schools in Kuala Lumpur were involved in this study. Thus, the findings do not portray the general cognitive abilities of all the children in these preschools. Lastly, this study focused only on examining the effects of type of pre-school, parents' level of education, and parents' income level on children's cognitive ability.

Teaching is a challenging profession. Teachers across the world need support as they 'grapple with the immense emotional, intellectual and social demands' of the job and cope with 'ongoing government reforms and social movements'. Unfortunately, the strong need for social support and guidance is not always adequately met by existing sources of support.

7.0 CONCLUSION

Co-constructing social support is a complex process. The teachers need to craft their postings carefully to encourage Friends to take up the topic they have introduced, thus enabling the co-construction process to occur. The co-construction process consists of two simultaneous phases within which teachers need to find ways to fit themselves into the community to manage supportive conversations. Fitting themselves into the community is done by discursively constructing socially-acceptable identities, so that they present the image of being 'one of the crowd'.

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