

## A comparing key performance indicator and benchmarks of quality pre-school among the agency in Malaysia

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### ABSTRACT

High quality early childhood education (ECE) enables children to enjoy the experience and have nurturing environment that promotes holistic development. The key performance indicators such as quality pre-school's environment, teachers and assistant teachers, learning materials have been predicted to produce desirable outcomes. However, the challenge is to identify the predictors that can quantify the definition of a quality teacher. This study uses questionnaire to assess individual perceptions and views on quality key performance indicators of early childhood pre-school center. The study's findings revealed that the gap analysis related to the qualification of pre-school teachers and ratio teacher-child below the standard. Even though teacher-child ratio in private pre-schools is small because most of pre-schools do not employ assistant teacher as practiced in other pre-schools. Thus, the study found that the performance of children's abilities in Ministry of Education pre-school and private pre-schools exceeded the national standard of 76.2% National Average of Reading and Writing, and 64.6% National Average of Arithmetic. However, based on benchmark 100% achievement, the screening performance report shown children far left behind. In conclusion, these findings are important to be given attention and remedial action in order the improvement and quality of pre-school achieve the minimum standard.

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## 1. INTRODUCTION

The provision of early childhood care and education (ECCE) should extend from the accessibility of quality ECCE to its sustained development as one of the essential entry points among the 13 entry points projects (EPP) under the National Key Economic Areas (NKEA) in Malaysia. The high quality ECCE environment promotes physical, social, emotional, and intellectual development [1], [2]. While having access to ECCE is an urgent need of some two million pre-school children, monitoring the growth of the care, and

education industry seems equally pressing [3]. The quality ECCE practices for appropriate development and learning among children have been developed by agencies such as the United Nations of Educational, Scientific, and Cultural Organization (UNESCO) and Organization for Economic Co-Operation and Development (OECD) [3]. The UNESCO sustainable development goal 4 (2015 to 2030) has established that quality education should promote lifelong learning opportunities for all; ensure that all children have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education [4], [5]. This monitoring should involve long-term research and development of quality ECCE that focuses not only on the provision of ECCE services but its educational, social, and economic returns [6]. Every child should have equal access to such quality program regardless of his or her gender, race, religion, age, belief, disability, geographical location, social class, and socio-economic circumstances [6]. The need to provide such opportunities for ECCE development [7] given rise to countries developing policies to mobilize resources to meet its rising demands in quality ECCE [8]. In Malaysia, the education Act 1996 (Act 550) regulates pre-schools for children aged 4 to 6 years old. The public pre-schools are provided by government agencies such as the Ministry of Education (MOE), Ministry of Rural and Regional Development (KEMAS), Department of National Unity and Integration (JPNIN). Private pre-schools are alternative pre-school provisions that allowed privately run pre-schools registered with the MOE.

The OECD identified five key policies that promote quality in ECCE. First, setting out quality goals and regulations along with public funding and regulation to achieve quality goals (the recruitment of highly professional staff and investment in ECCE facilities and materials). Second, designing and implementing curriculum and standards through a regulatory framework, minimum standards for health and safety of children, and a minimum level of quality. Third, professionalizing the ECCE workforce through improving qualifications, training and working conditions, and which could in turn increase the possibility of realizing broad-based education and care quality goals. Fourth, engaging families and communities and requesting for a parental component in ECCE services to enhance children's achievement. Last, advancing efforts in data collection, research and monitoring aimed at achieving quality goals, and raising standards [9], [10].

Based on these recommended the quality programs have been predicted to produce desirable outcomes. However, the challenge is to identify the predictors that can quantify the definition of a quality program [11]. The predictors of a standard universal quality program are fraught with difficulties. Quality varies with context and culture [3] may not be similar to another. To answer these, we need to figure out key performance indicator and benchmarks of quality pre-school criteria that can be used to define quality models ECCE center Malaysia [12], [13].

This study seeks to identify the best practice benchmarks of quality teachers in pre-school from different agencies (Ministry of Government, TADIKA/kindergarten KEMAS, TADIKA JPNIN, and private kindergarten). This study was formulated to meet three specific objectives: i) Identify the qualification of pre-school teachers from four agencies; ii) To compare child-teacher ratio among the pre-school agencies (MOE pre-school, TABIKA KEMAS, TABIKA JPNIN, and private kindergarten); and iii) To compare of key performance indicators among MOE pre-school, TABIKA KEMAS, TABIKA JPNIN, and private kindergarten.

## 2. LITERATURE REVIEW

The past studies found the quality of teachers have a responsibility to take care and educate pre-school children. The criteria of quality included education, years of experience and beliefs about child rearing associated with competent, knowledgeable and creative [14], [15]. The quality of pre-school teachers is important indicator that is given attention in measuring the quality of a pre-school [16], [17]. To achieve the desired quality of education, teachers need to have high qualifications, experience, knowledge, and skills [18]. Qualifications in this context consist of two categories of qualifications: academic qualifications and professional qualifications [19]. Professional qualification refers to a qualification specialized in pre-school education or early childhood education. Experience is measured by the number of years' teachers have experience teaching in pre-school [20]. Children studying in pre-school who had highly qualified teachers on average showed significantly better performance and achievement than children from regular pre-school [14]. Education level and years of experience contribute to their commitment and positive interaction with children. Low academic qualifications and lack of specific training in early childhood education were found to severely limit teachers' ability in shaping children's learning, thinking, and behavior [1].

To produce quality products in education, teachers who improve their competencies based on changing environment have successfully increased their professionalism in teaching [15]. In this globalization era, the role of teachers is becoming more complex and challenging. In order to realize the vision and mission of the National Education Philosophy, every teacher must have the appropriate level of competency from pre-school [16]. Child development is also disrupted if teachers are incompetent in

pre-school [21]. There are five key components of the ECCE teacher: i) Knowing and understanding children's basic development; ii) Providing opportunities for children to play; iii) Helping children's social and emotional development; iv) Understand the impact of children; and v) Collaborate with parents, family and community [22]. The abbot county of new jersey quality pre-school mandate, the Pennsylvania Code (1988), the National Research Council (NRC) and the National Institute for Early Education Research (NIEER) in the USA prescribe degrees earned through a 4-year early education program children as the primary criteria of teacher recruitment [7], in line with studies showing that the most effective pre-school teachers are those who have knowledge [21]–[23] and experience through four years of academic training at a recognized university [24]. The same standards apply in Finland and France, while the Singapore government will implement these standards in the near future [25].

Another important point is facilities and resources should provide promotes child inquiry in learning process and give opportunities for children to participate in learning activities. Previous studies show that the quality of pre-school is determined by the environment, facilities and resources. The indoor and outdoor environment, facilities, and resources play an important role in children's learning activities an environment that meets the needs of children who contribute to quality early childhood center [19]. Teaching and learning materials are described as an element of the spatiality of pre-school, their meaning constructed from the interaction between physical and social forces, and which cultivated the children's aesthetic sense and self-confidence. Materials in the pre-school space encourage the children's interactions. It depends on what way the pre-school materials and environment reflect children's backgrounds. This includes the design of the building, its location in the community, the people, materials, and furnishings within it [26]. It includes safe building features and structures, a clean, cheerful and comfortable classroom and activity space as well as safe landscaping, children, educators and parents or guardians. In this study, the indoor and outdoor environment included: i) Complete and interesting learning materials according to children's needs such as space layout, equipment and materials, classroom arrangement, outdoor play area and equipment; ii) The learning activities and teaching materials are divided into the adequacy of equipment and materials as well as the accessibility of materials; and iii) Learning atmosphere and equipment, space and materials handling procedures including the suitability of space, learning materials and monitoring areas as well as the comfort of children [22].

### **2.1. Key performance indicators program in early childhood education**

Previous studies have found that a high-quality curriculum is considered a very critical dimension in influencing children's learning and well-being. One of the key indicators of pre-school quality is the existence of a child-centered curriculum. Every pre-school needs to have a quality curriculum, which is a curriculum that is built and practiced based on knowledge and evidence of children's development, then implemented using effective pedagogy that can help them develop optimally [5]. Guided by the curriculum, pre-schools have the opportunity to eliminate illiteracy, increase literacy levels, and create interest in knowledge among children through relevant and comprehensive learning and reading activities. Therefore, it is desirable for quality pre-schools to provide programs, activities, and learning/reading materials that are able to achieve this goal.

The Malaysia report: education policy review, UNESCO [22] emphasizes the important aspect of high quality curriculum, namely the extent to which there is a balanced practice in terms of distribution of power and responsibilities between central policy-making agencies and policy-implementing pre-schools. An overly centralized curriculum system is considered to always face difficulties in achieving the desired goals. Centralized curriculum practices were found not to take into account the needs, conditions and priorities of institutions according to local location and socio-culture and in addition to restricting creative and innovative practices among children [13]. On the other hand, pre-school performance and student learning outcomes are difficult to understand and difficult to generally accept if full autonomy is given to each pre-school. Therefore, the balance of distribution and responsibility of implementing the curriculum between central agencies and preschools is used as a key performance indicator of the process of benchmarking preschool quality best practices [27].

In addition to the existence of a quality curriculum, a study reported by Scholastic.com found that a child who reads 1 million words a year would rank in the top 2% on standardized reading tests, while those who read only 8,000 words a year will be in the bottom 2%. In another observation, a quality school in Westmeath Ireland (Cornamaddy National School) required its pre-school (5 to 7 years old) to read 4-5 pages of two different book titles each day. In a year of learning, children are required to read about 120 titles of short books revolving around themselves, childhood, plants, animals, the environment and personal care, and hygiene. This means that to be successful, children should be encouraged to read 3,000 words a day, which is equivalent to three or four books a day. These figures should be used as a benchmark of best practice for the implementation of a quality preschool curriculum.

The implementation of a quality curriculum also includes the quality of programs, activities, and reading materials. This is reflected by a positive and child-centered learning atmosphere and environment. Thus, the quality criteria of learning environment include: i) Basic facilities (building, classroom, indoor, and out-door facilities); ii) Adequate facilities for learning (tables and chairs); iii) A conducive learning atmosphere and space; iv) Complete and interesting learning materials; v) The decoration and cheerfulness of the classroom; vi) The teacher's friendly treatment of the children; and vii) The active involvement of the children in learning activities. Also taken into account is the existence of learning corners, equipment for various types of games, reading materials, and teaching and learning materials that can encourage children to be independent and think critically and creatively.

In implementing key indicators of pre-school quality, teachers and teaching assistants need to interact meaningfully with each child. This is easier to do if the ratio of children to teachers is small [28]. The benchmark proposed by the National Association for The Education of Young Children (NAEYC) is a (10:1) ratio between children and teachers for the kindergarten category (6 years), with class sizes not to exceed 20 children. For children between the ages of 4 and 5, the standard proposed by NAEYC is eight students per teacher (8:1) and nine students per teacher (9:1).

In Finland which is known as one of the countries with the best education system in the world, the ratio practiced is 1 teacher for a maximum number of 11 children [29]. This ratio (11:1) is also recommended by the council of Australian governments (COAG) for pre-schools in Australia from January 2016. Most pre-school education systems in other developed world countries, namely Norway, Denmark, Sweden, Netherlands, New Zealand, Germany, Ireland, USA, and Canada [29] adopted a ratio of 1 teacher to less than 15 children in a class. If a pre-school class contains more than 15 children, an assistant teacher must be provided. The Massachusetts Department of Education, USA emphasizes the importance of the presence of at least two people, namely teachers and/or teaching assistants to care for children at all times and circumstances, as well as class sizes not exceeding 20 students. Key performance indicators (KPIs) and quality pre-school centers benchmarks are shown in Table 1.

Table 1. KPIs and quality pre-school centers benchmarks

List	KPI	Benchmarks
1	Existence of learning/student centered curriculum	Yes
2	Distribution of powers and responsibilities between central agencies and local pre-schools/education authorities	Balance
3	Reading resources and reading activities among pre-school children	120 book titles; Read 3/4 books a day; Read 3,000 words/day
4	Teaching and learning activities cover six pillars of learning as enshrined in the national pre-school standard curriculum (KSPK)	PDP is in line with KSPK's goals
5	Teaching and learning that prioritize meaningful interaction between teachers and each child	Class size=20 students; Student-teacher ratio=12: 1 At all times, one teacher, and one assistant for each class
6	Student achievement in terms of reading, writing, counting, and reasoning	100% readable; 100% can write letters; 100% can write numbers; 100% can count numbers; 100% can do basic arithmetic operations
7	Assessment for learning is done continuously using a variety of assessment tools	Every time teaching and learning; At least three assessment tools were used

Table 1 summarizes the results of the document analysis describing KPIs program in early childhood education for the quality of the pre-school center. This study found seven criteria, namely the main performance indicators that are used as a reference to measure and evaluate the quality of the early childhood education center by researchers and practitioners of pre-school education [30]. Each is accompanied by global the key indicators of pre-school quality and best practice benchmarks. The comparison of quality between pre-schools in Malaysia in the following presentation is based in part on the KPIs and benchmarks listed in the Table 1.

### 3. RESEARCH METHOD

This study applied a quantitative approach involving survey method to answer the research questions. This study designs were used to obtain comprehensive data on four key aspects involved in this study, namely key performance indicators program in early childhood education for the quality included: i) Demographic; ii) Quality ECCE-environment, facilities, and resources; iii) Teaching strategy and learning management; and iv) Observation and assessment [31], [32]. This study uses questionnaire design to assess individual perceptions or views on key performance indicators and benchmarks quality of early childhood

pre-school education in Malaysia and how this tendency varies among respondents. All data is collected using one set of questionnaires at a time. The respondents were required to answer all items in the early childhood quality questionnaire instrument [24].

### 3.1. Study participants

The number of study participants involved in the pilot study and the actual data collection for the survey method are given in Table 2. Numbers of early childhood education teacher according to the types of Pre-school/TADIKa (kindergarten). Surveys had been conducted with early childhood education (ECE) teacher at four types of TADIKa: MOE Pre-school, TABIKA KEMAS, TABIKA JPNIN and private TADIKa. The numbers of ECE teacher involved in the surveys study according to the types of TADIKa are shown in Table 2. The sample size was 1817 teachers from four types of pre-schools or TADIKa (kindergartens) that divided such as 267 (14.7%) teachers from MOE Pre-school, 432 (23.8%) teachers from TABIKA KEMAS, 59 (3.2%) teachers from TABIKA JPNIN, and 1,059 (58.3%) teachers from private TADIKa.

The field surveys were conducted nationwide starting with random sampling of groups to select representatives of the state wide zones. Each identified zone then underwent a stratified sampling method to ensure that all critical groups of informants were included (teachers/employers and supervisors), according to appropriate ratios of the pre-school types. Data collection is supported by the assistance of various agencies including the MOE, JPN, KEMAS, Department of National Unity, JPNIN, and private where the sampling distribution for pre-school is presented in Table 3. TADIKa survey population distribution and sample for TLA project (The sampling based on Krejcie and Morgan [33] with a population of 23,684 was 379 of which 2% of the sample was selected).

Table 2. Details of participants study survey method

Types of pre-school/TADIKa	TADIKa	
	n	%
MOE pre-school	267	14.7
TABIKA JPNIN	59	3.2
TABIKA KEMAS	432	23.8
TADIKa Private	1,059	58.3
Total	1,817	100.0

Table 3. Survey data sampling techniques

Zone	State	Pre-school distribution ratio				Distribution ratio				Total
		MOE	KEMAS	JPNIN	Private	MOE	KEMAS	JPNIN	Private	
North	Pulau Pinang	160	283	116	431	3	5	2	7	16
	Kedah	421	734	107	522	7	12	2	8	29
	Perlis	72	141	37	58	1	2	1	1	5
South	Johor	664	877	206	1404	11	14	3	22	50
	Negeri Sembilan	200	356	120	391	3	6	2	6	17
	Melaka	168	278	64	361	3	4	1	6	14
Central	Kuala Lumpur	130	129	132	343	2	2	2	5	12
	Putra Jaya	14	19	9	51	0	0	0	1	1
West	Selangor	508	795	182	1700	8	13	3	27	51
	Perak	515	726	164	632	8	12	3	10	33
East	Kelantan	405	713	107	217	6	11	2	3	23
	Terengganu	312	754	72	121	5	12	1	2	20
	Pahang	502	676	126	257	8	11	2	4	25
Sabah		867	991	142	369	14	16	2	6	38
Wilayah Persekutuan Labuan		14	20	25	13	0	0	0	0	1
Sarawak		1106	1076	172	407	18	17	3	7	44
Total		6058	8568	1781	7277	97	137	29	116	379

### 3.2. Profile of children by type of pre-school

Based on Table 4, total of children from four type of pre-school is 2,889 children and the distribution of the number of children by type of pre-school covers 1,134 children from private pre-schools (39.2%), TABIKA KEMAS 617 children (21.3%), TABIKA JPNIN 389 children (13.5%), and MOE Pre-school 749 children (26.0%). Based on the data, children were assessing reading, writing and arithmetic screening tests to see the achievement of children in all three forms of assessment managed by teachers.

Table 4. Profile of children by type of pre-school

Type of pre-school/Kindergartens	Children	Percentage
Moe pre-school	749	26.0
TABIKA JPNIN	389	13.5
TABIKA KEMAS	617	21.3
Private pre-school	1134	39.2
Total	2889	100.0

## 4. RESULTS

### 4.1. Demographic background of teachers

This study applied a quantitative approach involving survey to answer the research questions. The quantitative approach with a descriptive analysis. Thus, this section compares the professional qualification level of teacher, analysis of the ratio of children with teachers and children with assistant teacher, and performance of curriculum practice. The comparison was made using data from the survey.

#### 4.1.1. Professional qualification level

Table 5 shows the professional qualification of TADIKA ECCE teacher. For TADIKA in MOE Pre-school, 110 respondents (41.2%) had a degree in ECCE, followed by 55 respondents with a diploma in ECCE (20.6%). There were 60 respondents (22.5%) who did not have any professional qualification in ECCE. On the other hand, 30 respondents (11.2%) had a certificate in ECCE, 9 respondents (3.4%) had a master's degree in ECCE, and one respondent (0.4%) had a PhD in ECCE. There were 2 respondents (0.7%) did not give any information about their professional qualification related to ECCE. While TABIKA PERPADUAN, 29 respondents had a diploma in ECCE (49.2%), followed by 13 respondents (22%) with a certificate in ECCE, one respondent had a degree in ECCE (1.7%), and while 14 respondents (23.7%) did not have any professional qualification in ECCE. There were 2 respondents (3.4%) who did not provide this information.

Majority respondents in TABIKA KEMAS had a diploma and certificate in ECCE which were 192 respondents (44.4%) and 140 respondents (32.4%), respectively. There were 75 respondents who did not have any professional qualification in ECCE, 5 respondents (1.2%) who had a degree in ECCE, 2 respondents with a PhD in ECCE (0.5%), and one respondent (0.2%) had a master's degree in ECCE. There were also 17 respondents (3.9%) who did not give any information about their professional qualification related to ECCE.

Table 5. Professional qualification of TADIKA ECCE teachers

Types of TADIKA	Professional qualification	Respondents	
		n	%
MOE Pre-school	Ph.D in ECCE	1	0.4
	Master in ECCE	9	3.4
	Degree in ECCE	110	41.2
	Diploma in ECCE	55	20.6
	Certificate in ECCE	30	11.2
	Do not have any professional qualification in ECCE	60	22.5
	Not Stated	2	0.7
	Total	267	100
TABIKA PERPADUAN	Degree in ECCE	1	1.7
	Diploma in ECCE	29	49.2
	Certificate in ECCE	13	22
	Not Stated	14	23.7
	Do not have any professional qualification in ECCE	2	3.4
	Total	59	100
TABIKA KEMAS	Ph.D in ECCE	2	0.5
	Master in ECCE	1	0.2
	Degree in ECCE	5	1.2
	Diploma in ECCE	192	44.4
	Certificate in ECCE	140	32.4
	Do not have any professional qualification in ECCE	75	17.4
	Not Stated	17	3.9
	Total	432	100
TADIKA Private	Ph.D in ECCE	8	0.8
	Master in ECCE	12	1.1
	Degree in ECCE	39	3.7
	Diploma in ECCE	229	21.6
	Certificate in ECCE	215	20.3
	Do not have any professional qualification in ECCE	507	47.9
	Not Stated	49	4.6
	Total	1059	100

In addition, private TADIKA, 507 respondents (47.9%) did not have any professional qualification in ECCE. There were 229 respondents (21.6%) with a diploma in ECCE, followed by 215 (20.3%) who had a certificate in ECCE. Moreover, there were 39 respondents (3.7%) with a degree in ECCE, 12 respondents (1.1%) with a master's degree in ECCE, and 8 respondents (0.8%) with a PhD in ECCE. Other than that, there were 49 respondents (4.6%) who did not give any information about their ECCE professional qualification.

Figure 1 shows the gap analysis of child-teacher ratio and child-assistant teacher ratio obtained through analysis on the data shown differences between the agencies. Overall, the ratio of child-teacher between pre-school or kindergartens shows that the practices in MOE Pre-school, TABIKA KEMAS, and TABIKA JPNIN is the same that is one teacher is equivalent to 24-25 children in one class. Except for private pre-school or kindergartens practiced teacher-child ratio between 15-20 children equivalent to one teacher, this ratio that is practiced depends on the class size space provided by the kindergarten which is suitable for 15 children or more. The practice of teacher-child ratio in private pre-schools or kindergartens is small because most of pre-schools do not employ assistant teacher as practiced in other pre-schools. Therefore, the number of teachers will increase if the children exceed 20 or more, and the teachers-child ratio for 40 children equivalent to 2 teachers.

For the ratio of child-assistant teacher between pre-school or kindergartens shows the practices in MOE Pre-school, TABIKA KEMAS, and TABIKA JPNIN is one assistant teacher equivalent to 24-25 children in one class. Overall pre-school employee at least one assistant teacher per class except private pre-school. This ratio does not practice in private pre-schools or kindergartens because of fully use the services of teachers.

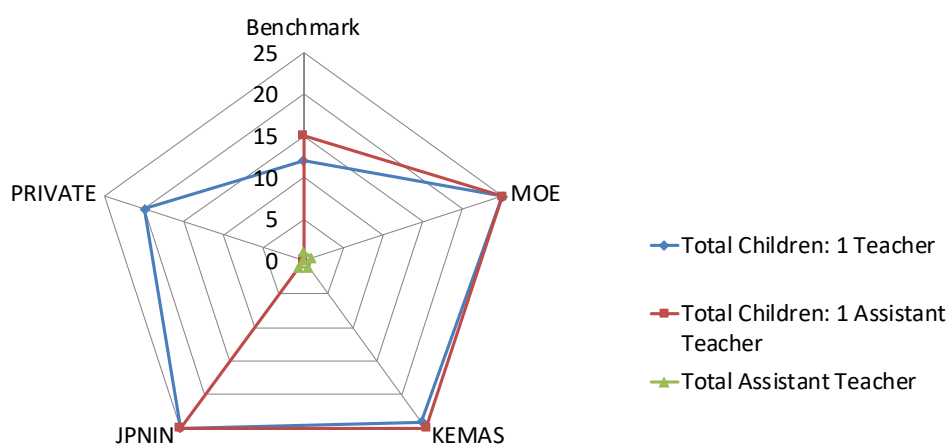


Figure 1. Gap analysis of the ratio of children with teachers and children with assistant's teacher

#### 4.2. Facilities and learning environment

Table 6 shows the comparison of basic facilities and physical environment between MOE Pre-school, TABIKA KEMAS, TABIKA JPNIN, and Private pre-schools. Basic facilities and physical environment refer to basic facilities prepared by pre-school, learning environment, learning materials in the classroom and exercise books and workbooks. For facilities and physical environment, there is a mean difference between MOE, Private, KEMAS, and JPNIN pre-schools. Mean facilities and physical environment are as: MOE=4.68; KEMAS=3.86; JPNIN=3.26; Private=2.24, and overall mean 3.45.

Findings show that MOE is at the highest level of facilities that is sufficient for children to carry out activities and followed by KEMAS, JPNIN, and private and only MOE and KEMAS are at the level of basic facilities above the mean. For a comfortable pre-school physical environment, the mean is as: MOE=4.42, KEMAS=3.86, JPNIN=2.82, and Private=1.90 and an overall mean of 3.22. The findings show that the three types of pre-schools are above the mean. Facilities and learning environment referring to learning materials in the classroom highest mean position is Private=4.15, KEMAS=3.54, JPNIN=3.19, and MOE=3.12, and an overall mean of 3.02. Meanwhile, based on Figure 2 gap analysis of the textbooks and exercise books prepared by agencies in every center, the mean of private pre-school is 4.10; MOE Pre-school=3.58; KEMAS=3.95 and JPNIN=3.58; the overall mean was 3.54.

Table 6. Facilities and physical environment

Learning environment and facilities		MOE (N=267)	KEMAS (N=432)	JPNIN (N=59)	Private (N=1,059)
Pre-schools have adequate facilities for learning	Mean	4.68	3.86	3.26	2.24
	SP	0.68	0.39	0.67	0.62
The learning atmosphere in pre-school is conducive	Mean	4.42	3.86	2.82	1.90
	SP	0.73	0.39	0.63	0.30
Complete and interesting learning materials	Mean	3.58	3.24	2.96	4.08
	SP	0.96	0.78	0.61	0.63

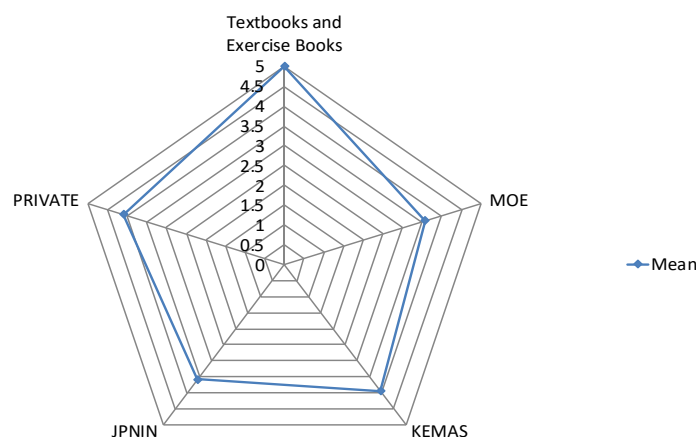


Figure 2. Gap analysis of the textbooks and exercise books

#### 4.3. Comparison of key performance indicators categories and international best practice benchmarks

Table 7 summarizes the results of a cross-distribution analysis of curriculum practice quality by pre-school agency. The agency's different pre-school achievements were compared match to six KPI categories and international best practice benchmarks. The performance indicators are: i) The existence of a child-centered curriculum; ii) The distribution of authority and responsibility for building and implementing the curriculum; iii) The number of titles of pre-school children's reading material; iv) The ratio of students to teachers; v) Class size; and vi) Children achievement [34].

Table 7. Comparison of KPI categories and benchmarks between pre-schools

KPI	Pre-school				
	Benchmark level	MOE	KEMAS	JPNIN	PRIVATE
Curriculum	Child-centered	KSPK	KSPK	KSPK	KSPK+Own
Curriculum authority distribution	Balanced	More centralized	More centralized	More centralized	More autonomy
Book titles and program	120 Title/Program	98	77	54	65
Child-teacher ratio	12:1	25:1	25:1	26:1	20:1
Class size	15 Children	25	25	25	15
% Readable	100%	85	69	83	77
% Can write letters	100%	63	43	56	61
% Can do basic arithmetic operations	100%	65	50	60	57

There are several important points shown in Table 5, First, all pre-schools use the national pre-school standard curriculum, but at different levels of use. It was found that MOE pre-schools fully use KSPK while other agency pre-schools are allowed to use additional curriculum. As such, most private pre-schools have the opportunity to operate more innovatively by formulating their own supplementary curriculum.

Based on Figure 3, the result shown all pre-schools regardless of agency showed low performance in terms of the number of reading materials and program in the form of book titles or video compared to best practices internationally. While the benchmarks best pre-school practice is to provide 120 titles of children's books or program, the average of the best book titles among MOE pre-schools is only 98 titles. However, the performance of MOE pre-schools is of good quality when compared to KEMAS pre-schools (77 titles), Private pre-schools (65 titles), and JPNIN (54 titles).



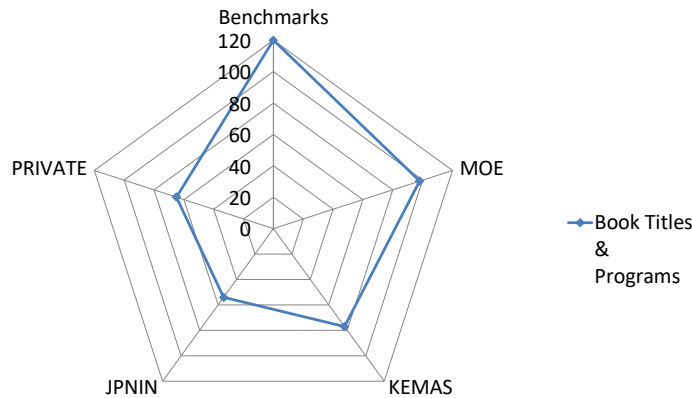


Figure 3. Comparison gap analysis of the book titles and programs

**4.4. The performance of reading, writing and arithmetic**

Based on Figure 4, the distribution of the number of students by type of pre-school covers 1,134 children from Ministry of Education Malaysia (MOE) pre-schools (26.0%), TABIKA KEMAS 617 children (21.3%), TABIKA JPNIN 389 children (13.5%), and Private 749 children (39.2%). Based on the data, children were assessing reading, writing, and arithmetic screening tests to see the achievement of children in all three forms of assessment, the following is the study report. Figure 4 shows the comparison gap analysis of children’s screening assessment. Based on children’s screening assessment data on reading, writing and arithmetic, pre-school MOE reported the percentage of children who could read (80%) was higher compared to the performance of Private (77%), KEMAS (69%), and JPNIN (65%). For the highest private writing performance (86%), it is almost the same as MOE (84%), while KEMAS (77%) and almost the same as JPNIN (74%). While the arithmetic private performance report (74%) was ahead of MOE (69%), KEMAS (62%), and JPNIN (56%). Based on the information, this study found that the performance of children's abilities in MOE and private exceeded the national standard of 76.2% national average of reading and writing, and 64.6% national average of arithmetic. However, based on the screening performance report for year 1 students found that former private kindergarten children showed higher performance when compared to MOE pre-school children.

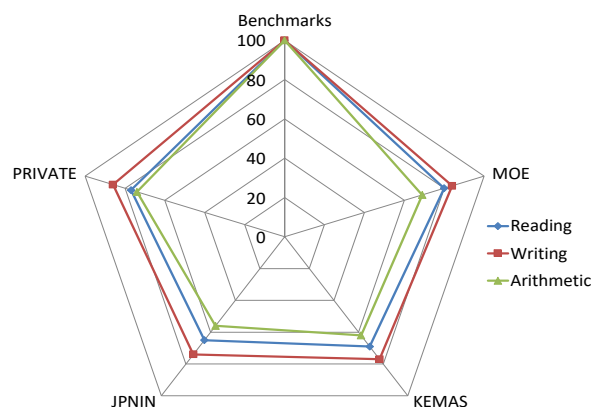


Figure 4. Comparison gap analysis of children’s screening assessment

**5. DISCUSSION**

The teachers in all pre-school agencies in Malaysia in terms of teacher qualifications have not reached the best quality benchmarks [34]. However, more than half of MOE pre-school teachers have a bachelor’s degree. The average qualification of other pre-school teachers is much lower, at less than 10% for each type of implementing agency [6]. This issue should be given attention so that the implementation strategy of education policy is achieved, such as: i) Provide adequate trained teachers for the needs of pre-school education and ii) Ensure all pre-school option teachers and early childhood education teach in

pre-school [9]. This is in line with the results of a previous study found of high quality teachers [35], namely: i) Academic qualifications; ii) Professional qualifications of pre-school teachers; iii) Work experience as pre-school educators; iv) Appointment of official duties related to early childhood education; v) Early childhood education consultants; vii) Authors, researchers, or presenters of papers related to early childhood education; and vi) Award recipients who recognize contributions to early childhood education [3]. These findings are consistent with an assessment conducted by UNESCO [22] which found that the role of pre-schools is as implementers of policies and guidelines set by the central agencies of the MOE.

Second, all types of pre-schools did not achieve a quality of practice of child-teacher ratio and class size comparable to best practice [12]. Among local pre-schools, private kindergartens have the lowest average child-teacher ratio, and class size. In this regard, private kindergartens are significantly better quality when compared to MOE pre-schools [36]. Certainly, this child-teacher ratio and class size contribute to the quality of interaction and teaching and learning process among private kindergarten children [37].

Third, teaching and learning resources among pre-schools in the country are also found to lag far behind compared to teaching and learning resources, especially children's reading materials. While the best pre-school practice is to provide 120 titles of children's books, the average of the best book titles among MOE pre-schools is only 78 titles and followed by KEMAS 77 titles. This situation certainly constrains a child's potential to achieve best practice benchmarks, where every child has to read a book of 3,000 words per day [38]. The use of technology in teaching and learning (computer, audio visual, projectors, and smart boards) in some pre-schools helps teachers teaching and learning become more engaging, thus engaging children, however not all pre-schools use this facility.

Finally, analysis of children's screening assessment MOE Pre-school reported the percentage of children who could read was higher compared to the performance of Private and others. This study found that the performance of children's abilities in MOE and private pre-schools exceeded the national standard of 76.2% national average of reading and writing, and 64.6% national average of arithmetic. However, based on benchmark 100% achievement, the screening performance report shown children far left behind.

## 6. CONCLUSION

In conclusion, these findings are important to be given attention and action in order the improvement and quality of center the physical environment in MOE Pre-school is comfortable, conducive and excellent should provide in others agencies. In line with environment, learning materials in private pre-school classroom meet the needs of quality learning, up-to-date and interesting contribute to quality learning. The emphasis on specific exercise books that are more specific to improving the level of academic achievement of children is required. using additional exercise books, reading materials and additional workbooks are used at all times. Private preschools also use serial textbooks and have easy to high levels. The use of structured text makes it easier for teachers to see children's development and mastery and saves teachers' time. In this regard, it is recommended to the MOE that the review of the governance system restructuring as proposed through the Malaysia report: education policy review also clearly defines the balanced distribution of Malaysia education policy review between central agencies, district education office, and pre-school. The use of various approaches in children's activities. A child and materials-centered approach is the primary method used as meeting needs in the private pre-school curriculum. Each child is provided with materials to create activities and exercises.




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