

The Quality of Overall Planning and its Influence on Overcrowding in Malaysian Preschools

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Abstract

Overcrowding in Malaysian preschools is concerning and can be attributed to inadequate building size and poor planning. Sufficient space for learning activities is crucial for children's development. This study examines and proposes recommendations to improve the overall planning of 26 public Ministry of Education (MOE) preschools in Klang Valley. The Children's Physical Environment Rating Scale was used to assess planning aspects including building size, indoor activity spaces, classroom enrolment, and modules. Most assessed MOE preschools lacked space and the average quality of overall planning was rated Fair. Recommendations are hoped to promote better planning for public preschools in Malaysia.

Keywords: preschool planning; preschool size; preschool overcrowding; children education

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1.0 Introduction

Children have a crucial role to play in society – they are our future leaders. The importance of ensuring that young children have access to high-quality early childhood education is paramount. As with many other countries, public preschools in Malaysia are designed to both ensure that enrolment rates are maximized and that high-quality education is afforded to all children (MOE, 2020). According to the Malaysia Education Blueprint 2013-2025 (MEB 2025), preschools are required to ensure that the national education syllabus is fully implemented to maximize children's development.

The necessity for high-quality learning experiences at the preschool level is mainly attributed to young children's susceptibility to the surrounding environment as compared to adults. Young children perceive their environment differently. Their experiences and interactions with the physical environment during childhood will significantly affect their development and influence the way they conduct themselves later in life (Raghubar & Barnes, 2017).

In Malaysia, the issue of overcrowding in preschools and inappropriately designed preschool buildings are increasingly worrying (Mohidin *et al.*, 2015). These issues have been consistently highlighted in recent literature (Abbas *et al.*, 2016; Azhari *et al.*, 2015; Shaari *et al.* 200). But to no avail, they continue to be overlooked. Glaringly, there appears to be an assumption that preschool design is not as important as the quality of pedagogy – as seen in the MEB 2025, where no emphasis is given to highlight the need for improvements (Shaari *et al.*, 2020). A lack of public awareness of what constitutes a good quality preschool design to accommodate children learning and development is suspected.

With regards to the design of learning environments for children, many important aspects determine the quality of preschool buildings to accommodate pedagogy and learning activities for children. One of them is overall planning; which often influences building capacity. Because overall planning is crucial to determine size allocations for space and activity areas, poor overall planning of preschools is commonly associated with inadequate space and subsequent overcrowding.

It is well established that preschools that lack ample space, often with high teacher-child ratios, negatively impact children's behavior, attention during formal learning, cognitive development, and academic achievement (Moore, 2012). Swift actions to improve preschool overall planning and reduce overcrowding are needed to ensure that children are afforded the best possible start in life. Failure to do so will jeopardize their learning processes and limit their developmental potential to partake in more complex learning as they progress in life.

Hence to address this, the current study aims to investigate the current status of overall planning among Ministry of Education (MOE) preschools and propose appropriate improvements to hopefully overcome overcrowding issues in Malaysian public preschool buildings. We also propose appropriate design recommendations to better improve preschool capacity through building sizes, activity spaces sizes, and modules.

2.0 Literature Review

When it comes to learning spaces, many aspects of the surrounding physical environment can influence children's behavior, and how well they acquire knowledge (Abbas et al., 2016). Many aspects of the preschool physical environment can directly affect the child's behavior and developmental trajectory by reinforcing their learning experiences (Moore, 2012). Given that preschools are intended to maximize children learning, play, and development, designers must understand what constitutes well-designed learning spaces from the child's perspective (Barblett et al., 2016; Samuelsson, 2020).

The ages of 4 to 6 years are a crucial period for children's development. This is a period when a child's personality and their physical, emotional, social, and cognitive abilities develop exponentially (Blair & Raver, 2015). Within this short time, children are akin to a sponge, whereby all the experiences they gain throughout their early life are absorbed and used as crucial foundations for them to participate in more complex learning. Therefore, to support their developmental processes at the preschool level, preschool experiences must be maximized and given priority (Christensen et al., 2014). Failure to do so will result in poor children's development in the long run and can be detrimental to society.

For preschools to maximize children's development, learning programs must be supported by a properly designed physical learning environment. Ample space must be provided for learning activities to ensure that academic teaching and its impact on children is maximized. This is of utmost importance as space is a prerequisite for the appropriate design of other elements in the preschool environment (Shaari et al., 2020).

Speaking of size, overall building size, and size of activity spaces are two crucial aspects to be considered in the design of preschool buildings. For example, in bigger childcare centers, children aged two (2) to four (4) years old were found to feel intimidated by the overall building size and the number of people present at a particular time during formal learning (Berris & Miller, 2011). Conversely, while parents often assume that bigger preschool sizes are generally better, children may not share the same perspective.

Moreover, teachers have also reported how overall preschool size can be both encouraging and intimidating at the same time to children (Berris & Miller, 2011). Further, big classrooms will provide children with adequate room to work, helps dilute noise, and allow easier visual supervision by teachers but can also overwhelm them and lead to anxiety (Berris & Miller, 2011). This is because spaces that are too large can confuse children as more unnecessary stimuli are not shielded. For learning spaces to reinforce positive stimuli, they must be designed to also limit distractions that can be detrimental for children.

Conversely, when taking into account the benefits of smaller classroom sizes and the overall cost involved to construct them, centers of 60 to 75 children are considered optimal for both the preschool child and the staff (Moore, 2012). Overall building sizes for the preschool should be at least 11 m² for each child, and another 9 to 10 m² per child for outdoor play yards, driveways, drop-offs, and set-backs to allow ample space for all activity areas (Moore, 2012). Given the importance of these areas' informal learning, the dimensions mentioned above for preschool areas must be prioritized.

Additionally, in another aspect of preschool design, a “module” is defined as a set of physically and functionally separated spaces for a group of children along with teachers or educators. It relates to the part of the preschool building where children spend most of their time in. As such, it also encompasses areas where most of the children’s functional needs and primary child-focused teaching-learning activities occur. According to Moore (2012), smaller centers may have just one or two modules while much larger centers may and should have a larger number of modules to keep groups of children sizes to a minimum.

Moreover, modules can also be interconnected, semi-detached, or as entirely free-standing parts of the preschool building. Hence, modules can be manipulated to maximize preschool spaces when faced with issues such as limited building site to work with. Nevertheless, the bottom line is, the exact purpose of modules is to make sure that children’s group sizes are minimized to promote better learning experiences in preschools. Thus they should be put to full use.

In highlighting the importance of overall space and building size, these aspects have long been implemented in preschools of developed countries but have often been overlooked in the design of public preschools in Malaysia (Abbas & Othman, 2012). More emphasis is needed to improve overall planning and quality of design among preschools in Malaysia to ensure that overcrowding can be overcome. Moreover, given this much-overlooked aspect, it is unsurprising that the cognitive level and academic achievements of most Malaysian pre-schoolers in public preschools were only found to be average when compared to international standards (Shaari et al., 2020). The fact that there is a lack of awareness of the importance to address this issue tells us that there is a dire need to investigate the current status of public preschools in terms of quality of building design.

Finally, in terms of evaluating these crucial aforementioned aspects, the Children’s Physical Environment Rating Scale (CPERS) offers an ideal tool for this purpose. Compared to other available assessment tools, CPERS allows us to accurately assess preschool physical aspects concerning their capability to promote cognitive development among preschool children. Because the MOE envisions preschools to maximize cognitive development among preschool children, this is most appropriate for the study (MOE, 2020).

3.0 Methodology

3.1 Research Design

The current study employed a set of methodology that was adopted from previous other similar studies on the assessment of preschool physical environments (Abbas et al., 2016; Azhari et al., 2015). To accurately assess the preschool children in their natural preschool setting, the fieldwork was conducted throughout the formal academic calendar year. The study was done by using the Children’s Physical Environment Rating Scale (CPERS), which is a 5-point rating scale designed to assess the quality of all physical aspects of the preschool environment. Here, the independent variables were the preschools being selected for the study. Because this study is part of an overall preschool physical

environment study, the dependent variables of this study were confined to the CPERS (Part A: Planning – Subscale 1) scores.

3.2 Location

Compared to previous studies, which were all conducted in Selangor, this research is distinctive as it spanned a larger region in Malaysia – the Klang Valley region. Klang Valley consists of the federal territory of Kuala Lumpur and four areas of Selangor – Petaling, Klang, Hulu Langat, and Gombak. Hence, by selecting this area for the study, both urban and non-urban areas of Klang Valley were included for comparative purposes.

3.3 Study Sample

This study was conducted at Malaysia's Ministry of Education (MOE) public preschools. By definition, MOE preschools are preschools annexed within the vicinity of public primary schools. They serve children aged five to six years old, especially from low-income families. However, to ensure that the study could be fitted within the time of the study, the sampled preschool population was narrowed down to preschools that serve six-year-old children and built from 2002 to 2016. For this particular study, 26 out of 30 preschools are assessed upon approval and willingness to participate.

3.4 Limitation

This study is limited to preschools with the above criteria (the type of preschool, location, built year, and age of children served); thus, other unrelated preschools were excluded. Thus, findings obtained from this study could not be generalized to other preschool populations of types. However, other studies to explore the different sets of criteria could be done in the future. Additionally, only one evaluator was employed in this study to evaluate all recruited preschools. Although best efforts were made to maintain assessment consistency, biasness could still be present in the evaluation process. Moreover, this study is only interested in overall planning quality, thus, only (Part A: Planning) of CPERS is used. Other parts (Part B, Part C, and Part D) of CPERS will be examined in other following studies.

3.5 Procedure 1: Consenting

The study worked to establish five stages of the consenting process before the start of the field study as illustrated in Figure 1.

Upon gaining approval from the abovementioned authorities, floor plans for all preschool buildings were requested from the principals of participating preschools. However, the researchers prepared the measured drawings of preschools without floor plan drawings before the assessments. To further record details for the preschools, preschool background information forms were distributed for preschool teachers to complete. Teachers were requested to fill in the information form with particulars such as preschool name, address, name of the principal, contact details, current enrolment, built year, and built purpose. The forms were returned and collected towards the end of the study period.

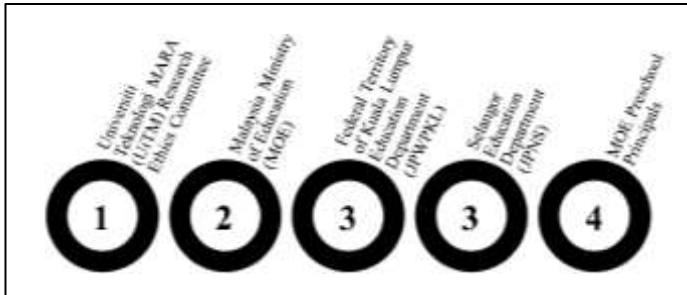


Fig. 1: Research Consenting Stages
(Source: Author)

3.6 Procedure 2: Pilot Study

The study first conducted a pilot assessment before the actual field study to establish self-acquaintance of the proposed instrument – CPERS, and its assessment procedure. It was also done to predict and address any potential issues with the proposed tool and method before commencing the actual field study.

3.7 Procedure 3: Data Collection (Actual Assessment)

The 26 selected preschool buildings were individually surveyed and assessed using the CPERS (Part A: Planning). The preschools were scored according to the existence of particular items as stipulated in Part A of CPERS, and how well the quality of the individual elements was. The duration of assessment for each preschool varied between 1 and 2 hours depending on the availability of floor plans before the field study, size, and complexity of the preschool buildings.

3.8 Procedure 4: Data Analysis

Every item and overall raw scores of CPERS (Part A: Planning) of all enrolled preschools were gathered, calculated, finalized, and coded in the Statistical Package for the Social Sciences (SPSS). The scores were then statistically analyzed to measure the individual and the average quality of overall planning of the 26 studied preschool buildings (Field, 2017). To propose design improvement recommendations, the individual and average quality of each item in the CPERS (Part A: Planning) of the 26 studied preschool buildings were also analyzed.

4.0 Results

The quality of overall planning of the MOE preschools was assessed using the first part (Part A) of CPERS. The four aspects of planning, namely the Building Size, Useable Indoor Activity Space Size, Enrolment, and Modules, were evaluated in each preschool to determine the quality. Different scores indicate different levels of quality, as follows:

- i. 3.01 – 4.00 = Excellent
- ii. 2.01 – 3.00 = Good
- iii. 1.01 – 2.00 = Fair
- iv. 0.00 – 1.00 = Poor

4.1 CPERS Part A: Planning

Table 1 shows us that the Mean score of CPERS (Part A) for all the assessed preschools (N = 26) is 1.52. This infers that the average quality of overall planning of MOE preschools in Klang Valley falls under the Fair category, as shown in section 4.0. Moreover, the minimum and maximum scores further reveal that some of the preschools were given scores as low as 0.00 and as high as 2.67, respectively.

Table 1: Average CPERS (Part A: Planning) Score

| PART A: PLANNING | N | Range | Min. | Max. | Mean | Quality |
|-----------------------------------|----|-------|------|------|------|---------|
| Subscale 1: Center Size & Modules | 26 | 2.67 | 0.00 | 2.67 | 1.52 | Fair |

(Source: Author)

Table 2 shows the distribution of the CPERS (Part A) scores for all the studied preschools (N = 26) depending on their quality levels. Here we can see that none of the preschools scored Excellent for planning quality. Table 2 shows that 26.9% (N = 7) of them obtained Good quality, half or 50% (N = 13) of them received Fair quality, while the remaining 23.1% (N = 6) were found to be of Poor quality.

Table 2: Distribution of CPERS (Part A: Planning) Scores by Quality

| PART A: PLANNING Subscale 1: Center Size & Modules | Overall | Distribution of Scores by Quality | | | |
|--|---------|-----------------------------------|-------------------|-------------------|-------------------|
| | | Excellent 3.01-4.00 | Good 2.01-3.00 | Fair 1.01-2.00 | Poor 0.00-1.00 |
| % | 100 | 0 | 26.9 | 50 | 23.1 |
| N | 26 | 0 | 7 | 13 | 6 |

(Source: Author)

4.2 Planning Aspects: Building Size, Useable Indoor Activity Space Size, Number of Enrolment, and Number of Modules

Table 3 shows that the building sizes (total gross areas), useable indoor activity space sizes, number of enrolment (maximum number of children attending at a given time), and the number of modules for each assessed preschool. Overall, we can see that preschools' building sizes ranged between 95.04 m² and 652.88 m². Additionally, their useable indoor activity areas ranged between 60.00 m² and 226.80 m². Meanwhile, the maximum number of enrolment ranged between 25 and 75 children per preschool during the formal preschool session. Moreover, out of all assess preschools, only six preschools were designed to accommodate two modules, while the other preschools were built with only one module in place.

Table 3: Building Size, Useable Activity Area, Enrolment, and Module Number of Studied Preschools

| Preschool (N = 26) | Building Size (m ²) | Size of Useable Indoor Activity Spaces (m ²) | Number of Enrolment | Number of Module |
|--------------------|---------------------------------|--|---------------------|------------------|
| 1 | 652.88 | 139.40 | 50 | 1 |
| 2 | 315.54 | 60.00 | 25 | 1 |
| 3 | 305.51 | 160.00 | 50 | 1 |
| 4 | 174.75 | 63.98 | 25 | 1 |
| 5 | 236.35 | 157.00 | 25 | 2 |
| 6 | 216.53 | 119.70 | 25 | 1 |
| 7 | 220.90 | 142.68 | 25 | 1 |
| 8 | 481.18 | 226.80 | 75 | 1 |
| 9 | 562.27 | 212.34 | 75 | 1 |
| 10 | 184.60 | 130.29 | 25 | 1 |
| 11 | 153.10 | 73.79 | 50 | 1 |
| 12 | 230.28 | 163.52 | 25 | 2 |
| 13 | 390.22 | 182.40 | 75 | 1 |
| 14 | 254.82 | 179.08 | 50 | 1 |
| 15 | 130.00 | 82.94 | 25 | 1 |
| 16 | 123.12 | 65.13 | 25 | 1 |
| 17 | 235.60 | 162.75 | 25 | 2 |
| 18 | 732.20 | 159.60 | 50 | 1 |
| 19 | 149.10 | 61.97 | 50 | 1 |
| 20 | 112.47 | 72.80 | 25 | 1 |
| 21 | 286.45 | 133.70 | 50 | 1 |
| 22 | 249.50 | 120.90 | 50 | 2 |
| 23 | 95.04 | 63.83 | 25 | 1 |
| 24 | 131.40 | 63.00 | 25 | 1 |
| 25 | 256.85 | 165.86 | 25 | 2 |
| 26 | 263.53 | 160.00 | 25 | 2 |

(Source: Author)

Moving on, Table 4 demonstrates the Mean scores of each CPERS (Part A) items, which are Items 1.1- 1.6 of the studied MOE preschools. The Mean scores for Items 1.1- 1.3 were obtained from all (N = 26) the studied MOE preschools. However, for Items 1.4- 1.6, the Mean scores were only obtained from 6 preschools, as the items were only relevant to preschools that have more than 1 module.

From Table 4, we can see that the Mean score and average quality of building size and the useable indoor space size of the studied preschools were rated as Poor. However, the average quality of Enrolment among the assessed preschools was found to be Excellent. For the preschools with more than 1 module, the average quality ratings of having their entrances and play yards for each module were Excellent and Good respectively. However, the average quality rating of having a clear separation between modules was only rated as Fair.

Table 4: Average Score of CPERS (Part A: Planning) Items

| PART A: PLANNING | N | Range | Min | Max | Mean | Quality |
|-----------------------------------|----|-------|-----|-----|------|---------|
| Subscale 1: Center Size & Modules | | | | | | |
| Item 1.1 Building Size | 26 | 4 | 0 | 4 | 0.46 | Poor |

| | | | | | | |
|---|----|---|---|---|------|-----------|
| Item 1.2 Useable Indoor Activity Space Size | 26 | 4 | 0 | 4 | 0.54 | Poor |
| Item 1.3 Enrolment | 26 | 4 | 0 | 4 | 3.15 | Excellent |
| Item 1.4 Modules – Own Entrances | 6 | 2 | 2 | 4 | 3.33 | Excellent |
| Item 1.5 Modules – Own Play Yards | 6 | 4 | 0 | 4 | 2.33 | Good |
| Item 1.6 Modules – Separation | 6 | 4 | 0 | 4 | 1.83 | Fair |

(Source: Author)

As per previous studies, it has been established that the ideal size for preschool buildings should be greater than 11m² per child (Moore, 2012). However, Table 5 below shows that only 11.54% (N = 3) of preschools were found to have achieved this. Whilst all the other preschools had a building size of less than 9m² per child. This is a worrying issue and further confirms our previous argument that public preschools in Malaysia often lack space.

Furthermore, as for useable indoor activity spaces, it is most ideal for preschools to have an area with a size of greater than 4m² per child. But, only 11.54% (N = 3) of the studied preschools achieved this. The majority of the assessed preschools, or 84.61% (N = 22) of them, had useable indoor activity spaces sized less than 3m² per child. Conversely, only one preschool (3.85%) has an area sized between 3.5m² and 4.0 m² per child.

In terms of module enrolments, the majority of the assessed preschools or 69.23% (N = 18) served less than 40 children per module at one time. Only five preschools (19.23%) served between 40 to 50 children, and the remaining three preschools (11.54%) served more than 50 children at one time. This demonstrates the distribution and nature of modules in MOE preschools, which could relate to the overall building size assessed earlier.

Additionally, of preschools that had more than one module, it is imperative to ensure that all of the modules have their respective entrance, play yard, and can easily be seen and identified as being separate sections of the preschool building. As previously demonstrated, only 6 out of 26 studied preschools had more than one module, meaning 20 preschools were run on two modules. Given this, it is interesting to see whether these modules were properly designed.

Finally, Table 5 further shows that 4 out of 6 preschools had an independent entrance for each module. 3 out of 6 preschools have separate play yards that are directly accessible from the interior of each module. But, only one preschool had a clear separation between modules and can be recognized easily as separate sections of the preschool building.

Table 5: CPERS (Part A: Planning) Detailed itemized Scores

| PART A: PLANNING | | Score | % | N | |
|-----------------------------------|--|---------------------------------|---|-------|----|
| Subscale 1: Center Size & Modules | | | | | |
| Item 1.1 | Building Size per Child (m ² /child) | Less than 9m ² | 0 | 88.46 | 23 |
| | | Between 9m and 11m ² | 2 | 0 | 0 |
| | | Greater than 11m ² | 4 | 11.54 | 3 |
| Item 1.2 | Useable Indoor Activity Space Size per Child (m ² /child) | Less than 3.5m ² | 0 | 84.61 | 22 |

| | | | | | |
|-----------------------------------|--|--|-------|-------|----|
| | | Between 3.5m ² and 4.0 m ² | 2 | 3.85 | 1 |
| | | Greater than 4.0m ² | 4 | 11.54 | 3 |
| Item 1.3 | Enrolment per Module (children/module) | Greater than 50 | 0 | 11.54 | 3 |
| | | Between 40 and 50 | 2 | 19.23 | 5 |
| | | Less than 40 | 4 | 69.23 | 18 |
| PART A: PLANNING | | | | | |
| Subscale 1: Center Size & Modules | | | | | |
| | | | Score | % | N |
| | | | | 100 | 26 |
| | | Not Met | 0 | 0 | 0 |
| | | | 1 | 0 | 0 |
| Item 1.4 | Modules – Own Entrances | | 2 | 33.33 | 2 |
| | | | 3 | 0 | 0 |
| | | Fully Met | 4 | 66.67 | 4 |
| | | Not Met | 0 | 33.33 | 2 |
| | | | 1 | 0 | 0 |
| Item 1.5 | Modules – Own Play Yards | | 2 | 16.67 | 1 |
| | | | 3 | 0 | 0 |
| | | Fully Met | 4 | 50 | 3 |
| | | Not Met | 0 | 33.33 | 2 |
| | | | 1 | 16.67 | 1 |
| Item 1.6 | Modules – Separation | | 2 | 0 | 0 |
| | | | 3 | 33.33 | 2 |
| | | Fully Met | 4 | 16.67 | 1 |

(Source: Author)

5.0 Discussion

From our study and the data we have presented, due to the only Fair average quality, we highly suggest that the overall planning of MOE public preschools in Malaysia is in dire need of immediate improvements. Based on our recommendations, Figure 2 illustrates the priority for improvements of the four aspects of overall planning being assessed (Building Size, Useable Indoor Activity Space Size, Enrolment, and Modules). The recommendations were made based on the CPERS (Part A) Subscale Items (Items 1.1-1.6) Mean scores shown in Table 4 whereby items with the lowest Mean score are recommended first in the improvement rank and so forth. This is because aspects that were the worst should receive the most attention and allocation for improvements to ensure that issues of poor overall planning could be mitigated and overcrowding could be minimized.

As we can see in Figure 2 below, the MOE preschools' Building Size per Child demonstrated the lowest Mean score. Thus, it should be promoted as the aspect ranked first and needs immediate improvement. The implementation of such enhancements could then be done to affect the elements of Useable Indoor Activity Space and Enrolment. This is because building size is crucial in ensuring that other important activity areas have ample

space to be designed appropriately. Without adequate space of the overall building, initiatives to improve Useable Indoor Activity Spaces and Enrolments become size-limiting and could not be maximized (Moore, 2012).

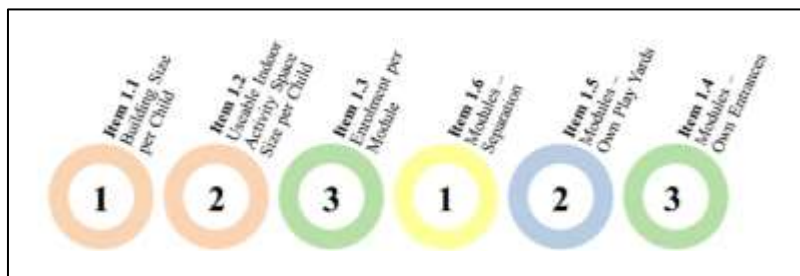


Figure 2: Recommended Rank of Improvement for Aspects of Overall Planning
(Source: Author)

Furthermore, more emphasis should be given to preschools with more than one module as additional improvements are needed given the more complex design and spatial layout of such preschools. Rightly so, the element of Separation between Modules demonstrated the lowest Mean score. This is because most modules were incompletely designed at MOE preschools. This is disappointing as separations between modules are crucial to properly define the modules to serve its purpose. Given this shortfall, we recommend that this aspect be given more attention compared to other aspects. Hence, this aspect was ranked as the first aspect requiring improvements.

Additionally, improvements should also be made towards aspects of preschool Play Yards and module Entrances to provide a more conducive module for each group of preschool children. As modules are meant to be a complete system for children learning within preschool spaces, Play Yards, and module Entrances should also come hand in hand (Moore, 2012).

In terms of the allocation of space for preschool pedagogy and children learning activities, preschools should be equipped with the right capacity to accommodate formal activities based on the syllabus set by the MOE (Moore, 2012). In principle, preschools with more enrolments should be larger in terms of size and vice versa. When taking learning and other common activities during preschool time into account, the ideal preschool building size should be greater than 11m² per child, as often recommended in other countries (Moore, 2012). Conversely, building sizes that are less than 9m² per child is considered too small and inadequate to cater to all preschool activities.

Several children's activities such as activities involving physical and pretend play often require larger spaces than others. However, the importance of activity spaces being kept to a low teacher-child ratio is also well-documented (Shaari et al., 2020). With low teacher-child rations during formal teaching, teachers are allowed to implement more stimulating, supportive, responsive, and encouraging interactions with pre-schoolers; which in turn

encourages more direct one-to-one educational activities. Activity spaces higher than 4m² per child are strongly recommended whereas spaces lower than 3.5m per child should be avoided as they are considered too small and inconvenient. Children often avoid conducting activities and learning in spaces that are too small as they often appear unfavorable (Mohidin et al., 2015).

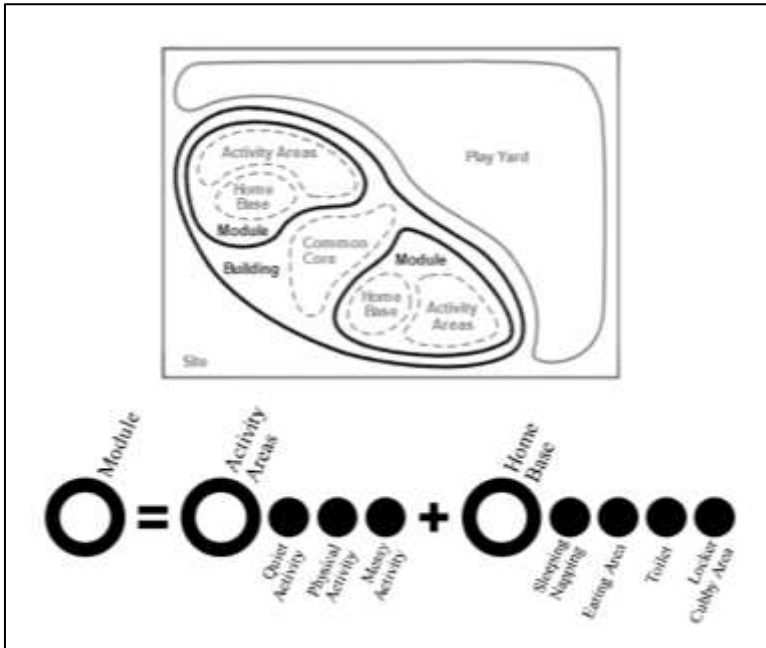


Figure 3: Preschool Module
(Source: Moore, 2012)

In principle, preschool modules are intended as separate purposeful building units that cater to the majority of children’s functional (eating, sleeping, toilet) and developmental (play activities) activity and needs. Here we demonstrate the organization of a typical preschool module in Figure 3. The employment of modules in preschools helps to keep the teacher-child ratio to a minimum as fewer preschool children are allocated to a set of activity clusters at any given time.

Ideally, the smaller the building size and the fewer children being served at one time, the better. Hence, for preschools with a low number of preschool children, often 1 module is enough. But, more modules are required in highly dense preschools. To ensure that children have access to all activity spaces with adequate room to move around and play, instead of catering children in one large building, the preschool center should be physically

divided into smaller units or modules so that children can enjoy the same benefits of learning in a smaller and lower density preschool.

This maximizes the child's exposure to stimuli and elements that promote effective learning. Conversely, when space is limited and access to crucial learning elements and tools are restricted, children tend to be competitive with each other to feed their curiosity. This can result in some children being overwhelmed and left out, further limiting their learning process.

Although module numbers are important, each module should be designed to be of high quality. This can be generally described as having an entry (so that the children, staff, and parents can directly access each module without the need to traverse through the rest of the preschool), own play yards that are easily accessible from the inside of the preschool, and be explicitly separated with other architectural elements within the preschool building (spatial arrangement, rooflines, porches, or other easily identifiable parts of buildings). Thus, it is imperative that for preschools to be properly designed and for overcrowding to be reduced in Malaysian MOE preschools, the use of modules should be maximized to enable adequate allocation of functional space to preschool children.

6.0 Conclusion

Taken together, from the data we have presented, the overall planning of preschool buildings needs careful consideration as it was found to contribute to overcrowding in MOE preschools. To adequately accommodate preschool children and to conduct effective preschool programs, designers need to ensure that preschool buildings have enough space. Hence, decisions on overall building sizes, size of activity spaces, and the number of modules allocated within each preschool should be made concurrently in tandem with the number of enrolments. The Fair rating and Mean score of CPERS (Part A) for Overall Planning seen in this study indicates that the overall planning of the MOE preschools need urgent attention as more improvements are needed. Particularly, aspects of planning with lower quality ratings such as Building Size, Useable Indoor Space Sizes, and Module Separation also need further improvements. Conclusively, the study hopes that recommendations made for building planning of public MOE preschools, as discussed in this study, will help stakeholders to address overcrowding and improve the quality of public preschools in Malaysia for the benefit of the future generation.

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Paper Contribution to Related Field of Study

This study confirms that public preschools in Klang Valley Malaysia are indeed overcrowded. In enabling the initiatives of the MOE under MEB 2025, this study helps to highlight the glaring issue plaguing most public preschools in Malaysia. With the recommendations made, we hope to create more awareness on the importance of proper overall planning in the design of preschools in Malaysia.

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