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Ecology of the classroom support program in early childhood education for children with lower income family backgrounds – case Singapore

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ABSTRACT

Children from lower socio-economic status families, at times, experience particular difficulties when entering school. These children may be equipped with different skill sets not recognized at school. Many countries, including Singapore, are increasingly concerned about the quality of early education. Paramount to quality is also the inclusion and accommodation of diverse learners into the mainstream education setting. The Classroom Support Program (CSP), under scrutiny of this study, is a small-group (and one-on-one) intervention programme developed and implemented by the NTUC First Campus in Singapore. The Classroom Support Program (CSP) involves Classroom Co-Facilitators (CCFs) aiming to include and support children from lower-income family background into early learning classrooms. The objective of the study was to understand the effects of the Classroom Support Program. The results indicate that while this programme provided individualized and tailored learning experiences for these children, CCFs roles and responsibilities varied due to the lack of pedagogical leadership. The proportion of their work is on the academic preparation of the children and while they promote the holistic well-being of the children in their talk, the children spent long periods of the day in teacher directed learning.

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Introduction

Children from lower income earning families may face specific issues when it comes to academic performance. Many of them have fewer opportunities to attend activities that prepare them for school, and which may cause particular difficulties when they enter school. Singapore's education system is characterized by high academic standards and privatized early childhood education system (Lim et al., 2014). Learning standards to enter primary school are set by the children from middle and upper middle-class standards, where the learning outcomes are at least partly affected by the private tuition classes

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children attend regularly even before they start formal schooling. Providing tuition or other enrichment activities often presents serious stress for families from lower-income backgrounds.

Additionally, Singapore has adopted a bilingual education system where the official language of schooling is English, but children grow up with a preferred home language (i.e. Malay, Chinese Mandarin, Tamil, or other Indian languages like Malayalam). Some early childhood education programmes, such as the My First Skool, offer a bilingual English-Mandarin programme, leaving other official home languages with less attention especially when the enrolment numbers cannot justify the expense of including mother tongue instructors and resources. Young children in such English-Mandarin bilingual programmes whose home language is neither English nor Mandarin may be facing additional academic and social challenges. Classroom support provides any additional learning and instructional support they may require in the classroom during these critical and formative years.

Based on these factors, children with lower-income family backgrounds may start school from disadvantaged positions. NTUC First Campus is one of the government subsidized operators providing day care services in Singapore, under the My First Skool (MFS) banner. They have developed a *Classroom Support Program* (CSP), as part of a larger and holistic *Child Support Model* (CSM) programme providing various support schemes to scaffold the learning for children coming from low-income backgrounds. This paper is centred on the experiences of the Classroom Co-facilitators (CCFs) who are the heart of the CSP. The study is relevant because it seeks to understand the effects such supports have on equalizing the education system and providing further cognitive and developmental stimulus for children coming from lower-income backgrounds, whose learning may otherwise fall behind in an academically driven education system. My First Skool's CCFs are one of the pioneers in the provision of in-class support (a feature of inclusive education) in the early childhood education sector in Singapore.

Bronfenbrenner's Bio-Ecological Systems theory (Bronfenbrenner, 1989) provided the theoretical lens for the research design of the study. CSP programme is examined from an ecological viewpoint, focusing on identifying the features of the child's microsystems, - i.e. home (family) and school with different early education professionals supporting the learning and development of the children taking part in the study. One important feature in the ecological model is the mesosystemic interactions taking place within the CSP programme professionals and the role that children and families play in the system. This study further examined the way in which this programme adjusted and supported the close partnerships between the microsystems of home (family) and school. Additionally, the influence of the indirect environments, i.e. *exosystems*, e.g. education policies and social welfare provisions, was also studied so as to evaluate how the CSP responded to the needs of the families and children concerned.

Contextualising the study and highlighting key challenges

To achieve the Singapore Government's aim of having a top-rate education system (Lim-Ratnam, 2013) it is crucial to provide affordable, good quality services especially for children from disadvantaged backgrounds. Early childhood education (ECE) is by no

means unaffected by the economy focused and test-oriented education in Singapore. Singapore has adopted two year preparatory pre-primary education provided by the Ministry of Education (MOE) operated kindergartens and selected semi-governmental operators such as NTUC First Campus. Kindergarten 1 and Kindergarten 2 classrooms are offered as part of the early childhood education preparation towards primary school, setting the standards for school readiness in Singapore. Recommended teacher-child ratios vary country to country as do the forms of classroom support experienced by children with needs as well as those who come from disadvantaged backgrounds. When teacher-child ratios are high, children regardless of their background receive more individualized attention (Francis & Barnett, 2019). However, in Singapore, the child-teacher ratio by regulation is as low as 1:20 for Kindergarten 1, and 1:25 (with paraprofessionals in the classroom, it is 1:30) Kindergarten 2 (ECDA, 2020).

Historically Singapore's education system is built on the dual-track system with mainstream schools and special schools (Lim & Nam, 2000). Although the term *mainstream* is not recommended in the literature today, it is still very much used in Singapore to refer to the dual-track education system. It can be argued that the term *inclusion* in Singapore is realized in ways which can differ markedly from western notions. Due to dual track education system, socially disadvantaged families fear greatly for their children when they lag behind as they could be placed in the special schools (Teo, 2018).

Preschool children in Singapore with special needs typically access services provided by voluntary welfare organizations, family community services, moral charities, public hospitals, and private organizations (Yeo et al., 2011). The Integrated Child Care Programme (ICCP) programme is a government-funded initiative being piloted in some preschools to provide in-class support such as curriculum adaptation for children with mild to moderate level of special needs in mainstream classrooms (Poon & Yang, 2016). Through the provision of in-class support, they facilitate educational equity by replacing the traditional intervention method of pupil withdrawal, which has been cited to contradict principles of inclusion and increase pupil dependency on aid (Murawski, 2010). As a pioneer in providing in-class support in Singapore's preschools, the CSP programme and CCFs expanded such support to not just children with identified special needs but also those at risk due to environmental factors such as lower-income backgrounds. These programmes (i.e. ICCP and CSP) intend to expand the idea of inclusion of diverse learners from only focusing on those with mild or moderate special needs to better support children experiencing social disadvantages.

Scoping classroom support in the context of inclusive education

The provision of classroom support is often discussed in the context of inclusive education (Unesco, 1994). In this study, inclusion is discussed within the context of preschool education before children enter primary school or special school in Singapore. Inclusive education, as delineated by Ainscow and Miles (2008), includes altering cultures, policies, and practices, in order to transcend the mere physical presence of students with needs in mainstream classrooms, rather to integrate and prioritize their participation and achievement within the mainstream classroom. It is worthwhile to note at this juncture, that educational principles, ideologies, processes, curricula, and resources made available are located within the unique sociocultural context, and national narratives of each society. The concept of needs requires a broader definition in today's diverse climate – inclusion should refer to social inclusion of

myriad diversities that children and families inhabit and exhibit, including family backgrounds, SES levels, language, and ethnicity. It encompasses all children in learning, wherever or however they learn best (Warnock, 2008). With the dual track education system in Singapore, this study has potential to review the policies in relation to inclusive education.

What is meant by classroom support?

As classroom diversity increases with the prevalence of inclusive education, the variability of learning needs within a singular setting rises. This poses new challenges to teachers – wrestling with large class sizes and more diverse learning needs while being given the same number of instructional resources. Early childhood classroom support professionals in various countries perform both instructional and non-instructional roles, including classroom management, socialization roles, curriculum planning for children with needs, and teaching them both in class and in independent sessions (Sharma & Salend, 2016).

Classroom support professionals provide individualized academic and socio-emotional support to children. The presence of classroom support professionals benefits children with individual learning needs through direct support and assists teachers with classroom management and facilitating differentiated learning (Gottfried, 2018). These classroom support professionals typically utilize child-centred practices and work in small-group settings, both of which have proven to predict higher achievement outcomes (Dunn & Kontos, 1997). In addition to providing learning support, classroom support professionals also have a positive effect on children's socio-emotional development. This is important in countries like Singapore with academically oriented early childhood education aims. Lim et al. (2014) found in their study that the classroom support professionals in Singapore specifically gained job satisfaction by working with the students who may be marginalized in the system.

Nevertheless, there are some limitations to the work of classroom support professionals which hinder the effectiveness of their intervention efforts. Classroom support professionals experience a strong phenomenon of "shifting the responsibility" (Dreyer, 2014, p. 187). Teachers are not prepared to collaborate with classroom support professionals, whom they see as an instant solution to their "problem" of having to meet the diverse needs of children in an inclusive classroom (Strogilos et al., 2018). In Singapore's primary schools, for instance, classroom support professionals are expected to wear many different hats, including performing ad-hoc roles like stepping in as relief teachers, supervising detention class and other administrative duties out of their job scope (Lim et al., 2014). These roles sometimes contradict their official stipulated role, which is to support teachers working with students with needs, which can lead to the social isolation of children with needs. Sharma and Salend (2016) also found that less-than-competent teaching assistants exacerbated feelings of exclusion among the children they supported.

While most literature about classroom support in early childhood education surrounds the provision of support for children with special education or learning needs, the Classroom Support Program in this study serves children for support based on family income, and secondarily on learning needs. This study focused on evaluating the CSP as a part of larger scale Child Support Model (CSM) that has served some 5000 NFC children between 2016 and 2017 in Singapore and will continue to serve thousands of children each year.

The study

This study sought to contribute to the body of knowledge on evidence-based practices that support the development of the children with lower-income backgrounds in Nursery (for 4-year- olds), Kindergarten 1 (for 5-year-olds) and Kindergarten 2 (for 6-year-olds) classrooms. The aim of the study was to understand the CSP programme, the role of CCF in it, and the effectiveness of the programme evaluated by the team of early childhood education professionals. The study aimed to answer following questions:

(1) What are the roles and responsibilities CCFs take on in their everyday practices at the centres, and how do they experience them?
    -What are the features that support and hinder the delivery of the Classroom Support Programme?
(2) How do the CCFs delfine and discuss the effectiveness of the CSP programme?

Participants and data collection

The data for this study was collected mainly from the CCFs, the heart of the Classroom Support Program. The data consist of focus group interviews (FGI) of all-female 14 CCFs (4 groups) from all the centres providing this programme. In addition, five centres were selected as case study centres to collect more in-depth data from 5 CCFs. Individual interviews were conducted and one-week diary entries were collected from these 5 CCFs on their everyday roles and tasks. This study was a part of a larger scale programme evaluation study.

To be hired, CCFs need to have (a) certificate-level qualification in Early Childhood Education as a minimum qualification and (b) experience in teaching Kindergarten 1 and Kindergarten 2 children (5- and 6-year-olds). All but one CCFs serve two centres and move from one to another as part of their job scope. The children they work with are qualified for the CSP programme based on the family income, not based on any specific learning needs. The following table 1 describes the profiles of the CCFs with pseudonyms to protect the identities of the CSP professionals.

Table 1. Profiles of CCFs derived from the in-depth interviews.

CCF Pseudonym	Academic and professional certification held	Years of experience as a Preschool Teacher	Years of experience as a CCF in My First Skool
Jasmine	Early Childhood Teacher Bridging Program certificate (ECTBP)	26 years	6 years
Zoey	Diploma in Pre-school Education-Teaching (DPE-T)	5 years	4 years
Sasha	Diploma in Early Childhood Care and Education-Teaching (DECCE-T)	9 years	3.5 years
Naomi	Advance Diploma in Kindergarten Education – Teaching	10 years	1 year
Abby	Advanced certificate in early childhood care and education	9 years	2 years

During the focus group discussions (FGD), the CCFs were divided into four groups; one group consisted entirely of senior CCFs (4) while the other three groups were formed randomly, with each group being facilitated by a researcher. Senior CCFS were grouped together so as to harness their years of experience in order to gain in depth understanding of how they worked within the CSP programme. Each group was tasked to complete a series of activities and discussions surrounding their roles, practices and working relationships as a CCF.

CCFs were also asked to rank their roles in terms of their perceived importance. CCFs also noted if these roles they highlighted were seen as primary or secondary in their everyday conduct of work at the centres. Focus groups are an effective way of accessing group norms and gaining insight into the formation of views which may not be as readily achieved through individual interviews (Barbour & Schostak, 2005). It thus served as a way to attain a more general understanding of CCFs' collective views.

In addition, the five CCFs in the case study centres involved in the study were each instructed to fill in a one-week diary documenting their tasks and corresponding reflections throughout the week. The use of participant diaries in research has the advantage of eliciting sensitive information that may be otherwise undisclosed by research participants (Day & Thatcher, 2009). All the data were collected between February 2020 and October 2020. Follow-up interviews with each CCF were tailored based on the diaries to delve deeper into understanding practices and perspectives specific to each CCF.

Lastly, observations of COVID-19 measures and CCF interventions were done in Nursery, Kindergarten 1, and Kindergarten 2 classrooms in the five centres. Where necessary, researchers had informal discussions with the CCFs to learn more about their pedagogical choices and the rationale behind practices used with particular children. Additionally, any collaboration and interaction between CCFs and other staff such as teachers, principals, and Learning Support Educators (LSEds) were noted.

Analysis

The data were analysed using grounded theory processes. To be able to conceptualize the CCFs roles and effectiveness of the programme, the data was collected through various sources, such as FGIs, diaries and individual interviews, as well as observations (Strauss & Corbin, 1990). Grounded theory is often used in the area of study not so well researched yet, to conceptualize it and understand it in relation to the theory. For example, during the focus group interview, CCFs were guided to complete tasks in relation to their roles, including listing them based on the importance. When starting the analysis, first, we asked questions such as how the CCFs made sense of their everyday roles and responsibilities; what their main roles were and how they collaborated with other stakeholders such as children, teachers, principals, and parents when we familiarized with the data (Corbin & Strauss, 2008; Strauss & Corbin, 1990). Codes were created to categorize emergent concepts such as *primary roles, other roles, roles out of the scope* etc. While coding, we went through constant comparisons as a team, comparing incident with incident (as in Glaser & Strauss, 1967) to classify data. As analysis progressed, each

incident in the data was compared with other incidents for similarities and differences. Incidents found to be conceptually similar were grouped under a higher-level descriptive concept such as CCF-teacher collaboration and further features that enhance it or prevent the successful delivery of the programme. This type of comparison is essential to analysis because it allows the researcher to differentiate one code/category from another and to identify properties and dimensions specific to that conceptualization (Corbin & Strauss, 2008). After initial manual coding was completed, the data was coded by using NVivo. Emergent concepts were categorized with the research questions as primary guides and the theoretical framework as a means of eliciting meaning from the codes thus identified using grounded theory processes.

Results

"Because that is our main role, to provide support for the children" – CCF roles and responsibilities

One key aim of the FDGs and the 1-week diaries kept by the CCFs was to ascertain if the job scopes set for CCFs were actualized in their work. The analysis started by organizing the data thematically based on the roles they had identified during the FGIs. The following table describes the various tasks undertaken by CCFs, supplemented by additional data from the one-week diaries, CCF individual interviews.

The tasks taken on by CCFs were diverse. From a programme perspective, the presence of CCFs offered flexibility in terms of the centre's operations. Similar results are found in the earlier studies on allied-educators and on similar classroom support programmes outside Singapore; these professionals felt that they were an extra resource in the school. In addition, as seen from Table 2, CCFs were wearing multiple hats while navigating their roles, in many cases, in between two centres. The challenges that COVID-19 brought into enabling a safe learning environment, made it even more obvious. For example, following the circuit breaker period (April 2020 - June 2020), one CCF took on additional job scopes, including interventions, which provided a viable solution to work around COVID-19 restrictions that prohibited extra people from entering the centres.

The presence of CCFs also granted assistance to teachers with tasks that may fall out of the CCFs' official job scope whenever necessary, thus easing the workload of teachers in the classroom. This involved tasks such as answering the doorbell while the teachers were in the middle of teaching (Observation notes, 21 August 2020), or attending to a crying child so that lessons were not disrupted (CCF FGD). CCFs learnt to know the children they worked with more, and therefore were able to assist teachers with some specific needs of the children they worked with. It was seen that in addition to academic support, CCFs were also valued for the extra attention that they provided in the classroom (another pair of eyes). However, it should be noted that the flexibility in operations enabled by the CCFs' presence may also result in CCFs being seen as additional manpower in the centre to be utilized *whenever necessary*, and this practice might increase CCFs' workload and impact their ability to carry out their primary role of supporting children in their learning.

Despite the various roles undertaken by the CCFs, across the data, the CCFs reported that their main and most important role was to support the children academically. With

Table 2. CCFs' roles as described by CCFs and collected from the observation notes.

Primary role: Support and facilitate learning:	Other roles:
• Reinforce curriculum knowledge	• Redirecting attention
• Assist in curriculum tasks	• Behaviour management
• Assist in fine motor skills development	• Documentation of child's progress and CCF's work
• Learning corner activities	• Attend and record meetings in school
• Observation of children in class	• Administrative and ad hoc duties
• Build vocabulary	• Mentoring new CCFs (for senior CCFs)
• Reading with children	
• Assign take home activities	
Roles out of job scope:	**Tasks during the COVID-19 circuit breaker:**
• Support learning for children out of CSP list	• Reinforce learning for children attending school
• Support learning for younger age group	• Assist teachers with home based learning materials/ideas
• Working with children with special needs	• Sit in for Zoom lessons
• Support learning for whole class	• Communicate with teachers regarding lesson updates
• Classroom management	• Communicate with CEE regarding children
• Interact with children during transition time	• Simplify or provide additional HBL material for children
• Assist in routines	• Prepare hard-copy HBL resources for families
• Assisting teachers	• Prepare resources/support for school reopening
• Additional administrative duties	• Check on children's learning/well-being
• Additional duties issued by principal	
• Volunteer for school events	

the academic oriented focus during the early years, social learning and interactions need to be recognized as an important source for learning. Developing social interaction as a tool for learning in the early childhood classroom, should not be limited to CCF encounters but considered in overall teacher-child ratio.

Making sense of the effectiveness of the program

In this section, we answer the second research question on the effective practices in the CSP that support children in their learning. We focus on three aspects - (1) the approaches adopted by CCFs that work well with the children, (2) how the CCFs effectively conducted pedagogical scaffolding for the children, and (3) how the collaboration between CCFs and other staff was beneficial to the programme.

Approaches

Interacting and building rapport with children

CCFs actively interacted and built rapport with the children they worked with. A good CCF-child relationship helped children to not fear if they could not understand what was taught. The familiarization process with the CCF meant that the children were comfortable with her and therefore more receptive of CCF support, especially in situations where the CCF may have pulled the child out from the classroom setting to provide support on a one-on-one basis. Creating this rapport was especially important for the new batch of Nursery children every year who have not previously been exposed to the CCF's presence. Building a strong rapport with children not only created a foundation for children to be receptive to the CCF, but also allowed CCFs to better understand the needs and dispositions of the children they worked with. CCFs note that building rapport with children can be done as simply as incorporating casual conversations while assisting them in their learning. For example, while reading with children, some CCFs were observed to ask them

questions pertaining to the story, which allowed the children to in turn relate their personal thoughts and experiences to the CCF about the story. The virtue of patience, the use of encouragement and specific praise were observed to help CCFs build stronger rapport with children. For example, CCFs were observed not only to praise children's good work, but some also offered positive feedback when children remained focused or were evidently putting in effort in their work. Such practices fostered the development of a trusting relationship between the CCF and children. With big classroom sizes, teachers may not have many opportunities to praise and recognize all children in the classroom. Also, CCFs did not always feel comfortable to give feedback to teachers on curriculum delivery in the classroom. As young children learn and develop in interactions with their peers, teachers and the learning environment, the presence of a nurturing relationship with the CCF may have increased the children's willingness to ask questions, take risks and express their thinking, facilitating optimal development for the children (O'Connor & McCartney, 2007; Raikes & Edwards, 2009).

The use of small group or one-on-one instructions appeared to be more conducive to developing the vital CCF-child relationship. Children responded better to small group or one-on-one interventions as they focussed better, opened up more and were more likely to clarify any doubts that may arise (CCF FGD; CCF interviews). CCFs highlighted that the small group setting enabled them to deeply understand the child. They felt that the small group approach was more beneficial when compared to a large group or whole class setting as they could effectively assess children's needs and learning gaps. It is their contention that a whole class or large group set up exacerbates the challenges young children with needs have in grasping concepts. Thus, small group, personalized facilitation styles enabled the CCF to better align teaching practices with the specific learning needs of a child.

Some CCFs were observed to have raised their voice at the children or forcefully moved the children when they misbehaved. While such an approach, did at times, achieve the desired, immediate result of ensuring the children were safe or well-behaved, approaching the children with warmth and affection – even in situations where children misbehave – is crucial to children's well-being (Ostrosky & Jung, 2005). Such practices impact a child's sense of safety and security in their relationship with adults, as well as their ability to interact positively with peers (Twardosz, 2005).

Considering children's preferences

Another effective approach used by the CCFs was considering children's preferences in learning. CCFs shared that they did not force the children to do or complete an activity if they refused to do so. CCFs were also observed to consider children's preferences in areas such as social interaction. The following excerpt from the observation notes is an example of how the child was able to choose the materials for learning activity, and how the CCF adjusted her plan accordingly.

> They sit at the learning corner, and upon seeing the play dough at the learning corner, the child expresses interest in doing the playdough activity. CCF first says no, we are not using the playdough today, but the child keeps pleading with the CCF. CCF says ok and on-the-spot, she improvises and uses the playdough to reinforce the concept of shorter and longer. She gets the child to roll out a clump of playdough while CCF rolls out another clump. Then CCF asks the child which is shorter and which is longer. They do this a few times for about 5

> minutes before the CCF proceeds with the original activity she had planned to do with the child. (Source: Observation notes, 29 July 2020)

By acknowledging the child's wishes, CCFs showed that they respected the child's own choices, which is key in connecting with them. This also may have helped children feel more confident and competent to explore and take risks in their learning (Dombro et al., 2011).

Inclusion and involving children at individual levels

A third effective approach used by CCFs was involving children at their individual levels and being inclusive. Some CCFs adopted an inclusive approach by including children they worked with in whole class activities instead of assigning them a separate activity, even after making a judgement that the class activity might have been too challenging for them. This inclusive approach ensured that the children with a lesser grasp of the concept in question have opportunities to do activities in a small-group setting. CCFs may also make adaptations to the activity to better match the developmental level and needs of the focal child. A CCF elaborated on why and how she ensured the participation and inclusion for a child:

> I rather include them than telling them "ok you go [to the] learning corner and read". I want them to get involved. Those that really really cannot write, I ask them to draw. Like now they [are] learning about germs, I ask them to draw what germs they know. Some of them can tell me these are bacteria, you know. So to include them, make them feel more comfortable. (Source: CCF FGD)

This approach may have fostered a sense of belonging and accomplishment among children who may have a poor grasp of concepts as they were able to learn alongside their peers while still being given extra support by the CCF. This also drew parallels to the notion of inclusive education, where students who needed individually adapted guidance were welcomed as full members of the group, with their participation and achievement being prioritized (Ainscow & Miles, 2008; Anderson et al., 2007).

Selective use of high- and low-support strategies

Scaffolding is a manner of teaching whereby educators provide the necessary level and type of support with the goal of the child's acquisition of some skill or knowledge (Wood et al., 1976). In general, CCFs used a variety of *high-support and low-support scaffolding* strategies when supporting the children. *High-support strategies* included giving hints such as providing letter sounds when assisted in writing and co-participating such as counting out loud with the children when they were solving a numeracy problem. *Low-support strategies* on the other hand, were used for learners who started to show signs of maturation and involved encouraging learner independence through the provision of minimal assistance (Zurek et al., 2014).

CCFs were observed to use these high- and low- support strategies selectively for the various children they work with. This activity was demonstrated for multiple children on a one-on-one basis. This activity aimed to teach the children to add and subtract 1 from numbers 1 to 20 (Figure 1).

CCF first began by asking the children what they understood by "1 more" and "1 less" (inferential questions, link to previous knowledge). The children were able to get the gist of the meaning and give descriptions like "more means so many" and "less means a little

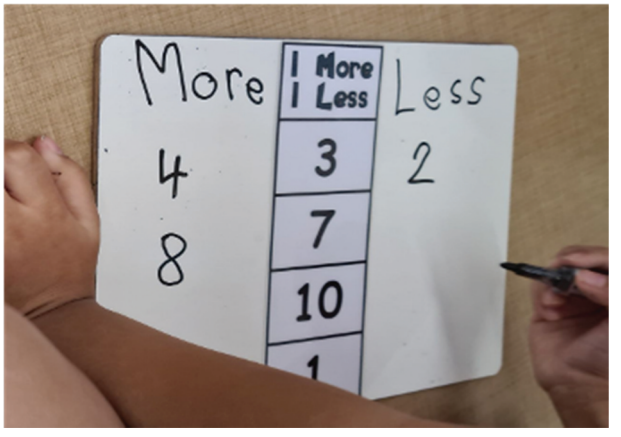

Figure 1. Example of scaffolding by CCF (source: observation notes, 23 July 2020).

bit". CCF provided a number chart (Figure 2) as a guide for the children to refer to as they add and subtract one from a given set of numbers.

CCFs provided varying extents of scaffolding for the children based on their ability. For example, CCF Naomi, instructed children with better grasp of numeracy concepts to refer to the number chart first to visualize the process of adding or subtracting numbers. After a few rounds, she took away the number chart to encourage greater independence. Such a strategy can be considered as effective, as it empowered the children by providing them sufficient foundational assistance to continue their learning (Zurek et al., 2014).

CCF Naomi was cognizant of the child's skills and needs, such as, some children needed her to point to the number chart and count aloud with them, while others could do it independently. She could provide such nuanced support for each child as she prioritized knowing the child deeply through the purposive interactions and rapport building. CCFs in this study generally showcased that they had knowledge of the level of support each

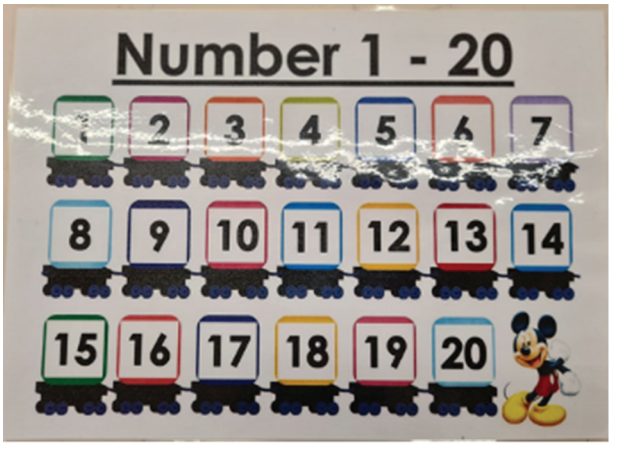

Figure 2. Number chart (source: observation notes, 23 July 2020).

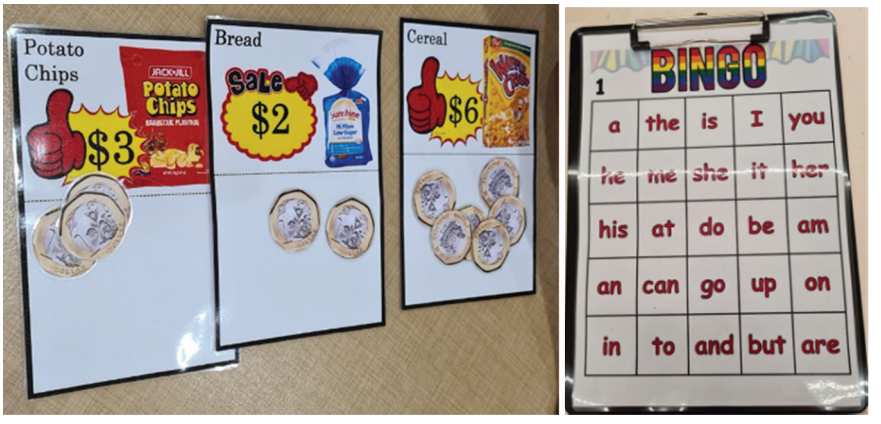

Figure 3. Example of game-based learning.

child required in different circumstances, so they could anticipate and plan scaffolding opportunities and execute appropriate strategies for them.

Use of appropriate and engaging learning resources

In addition to spontaneously scaffolding children's learning, CCFs also prepared appropriate and engaging learning resources ahead of time. Some CCFs were observed to use engaging learning resources, including game settings, to reinforce core curriculum concepts for the children. Consider the following learning resources prepared and used by CCF Naomi in small-group and one-on-one settings with the children (Figure 3).

Through the use of game-based learning, the CCF helped to scaffold children's conceptual knowledge by providing access to resources and experiences that provoke curiosity, exploration and learning. Game-based learning has been proven to improve intrinsic motivation for early learners, as the element of fun promotes desire to repeat the pleasant experience, as well as encourages them to engage in future activities in which they have no prior experience (Cojocariu & Boghiana, 2014). Game-based learning also provided a transdisciplinary approach to education, allowing children to develop multiple skills simultaneously. This game-based activity gave children an opportunity to develop literacy skills while also learning how to partake in friendly competition with their peers.

CCFs highlighted the importance of using concrete materials to make it easier for children to visualize and understand concepts (CCF interviews). This type of scaffolding was implemented in one centre after the circuit breaker period, making the learning experience more child centred. The effectiveness of the CSP programme is related to the classroom teacher's teaching style. Take for example, one Kindergarten 2 classroom which was observed to have been divided into two halves. The teacher in the one half of the Kindergarten 2 classroom conducted her lessons in a more teacher directed manner. In this context, the CCF was not able to provide as much support, as children were sitting and listening to the teacher. It was observed, that when allowed, children's interaction with objects and materials in that specific environment facilitated the learning process as the intrinsic qualities of these concrete materials sparked children's curiosity and desire to explore. This would increase the likelihood of children making observations and asking

questions, providing the CCF with opportunities to scaffold children's understanding of the concept being taught or reinforced if a more child-centred pedagogy was employed by the teachers

Relationships and collaboration between different stakeholders

Another important role of CCFs' work was the *collaboration with different stakeholders*. CCFs communicated and collaborated actively with teachers, principals, and other centre staff on a range of issues including updates on children, strategies for providing feedback on one another's teaching, and support for the children's attendance. CCF Jasmine shared an instance where the Child Enabling Executive (CEE) had encouraged her to come along on a home visit for a child with low attendance, as the CEE felt that the CCF's presence would help given that the CCF works very closely with the child. The CCF brought the child's work samples on the home visit to demonstrate the child's learning and progress and encouraged the mother to send the child to school even if it means the child may turn up late. This effort paid off as the CCF noted an improvement in the child's attendance in the following weeks, showing how a collaborative effort between CCFs and other professionals can result in concrete benefits for the children.

CCFs reported that they felt supported by the principals in some areas, for instance, being acknowledged for their work, but noted that principals did not always facilitate the collaboration between CCF and teachers actively (CCF FGD; CCF interviews). However, both CCFs and teachers mentioned that CCFs collaborated with teachers mainly on their own accord during any available pockets of time in between lessons or during children's nap time, and that this time was insufficient for effective collaboration to ensue (CCF interviews). This points out the lack of stipulated time for staff collaboration. Enabling intentional spaces and opportunities for staff collaboration is necessary. It is recommended that the CSP program consider enabling collaboration as a key area of improvement. The collaboration and communication between CCFs and teachers is crucial as it provides specific and targeted knowledge of child progress and needs. CCFs routinely provided updates on activities and strategies they administered for the children and expertly informed on each child's progress and learning gaps. Teachers benefit as such knowledge assists teachers to select the appropriate pedagogic approaches as well as use of resources to better support children in the long run. Such collaboration also positively shapes children's transition from one level to the next. CCF's sharing of observations and effective strategies for the children informed main teachers' choices of approaches with different and ensured a smoother transition to the next level for the children.

Collaboration among the multiple educational professionals that support the child has proven to be an effective way to accommodate children in inclusive education settings (Alsalman, 2014). CCFs, in their collaboration with main teachers, principals and other CSM professionals, achieved this by circulating more extensive and accurate information about the child's needs, thus facilitating more individualized and suitable accommodations to be made for the particular child by the various professionals.

However, a child's well-being and learning cannot be separated from the micro-environment where family ties are paramount. CCFs had varying experiences of collaborating with the families but they were observed not being invited, for example, in the teacher-parent meetings. This is an area that needs more attention in

multicultural and multilingual Singapore that the children can be supported based on their family backgrounds.

Conclusions

The aim of the study was to examine the provision of classroom support, specifically to understand CCF role and functions within the early childhood education setting in Singapore. First, the study focused on discussing the roles and responsibilities of the CCFs. It further presented the effectiveness of the programs experienced by the CCFs. While the CCFs saw their main role as building the relationship with children and supporting them in academic learning, they also take on various responsibilities that vary across the centres and the leadership styles they are under. In addition, their working conditions were determined by the relationships with the teachers they work with, and the demand for academic progress of children.

The study underscored the primacy of relationship building and understanding the child's experiences as being crucial in developing early childhood education curriculum. The CCFs continued to be a lifeline for children who did not necessarily have access to extracurricular activities and might lack behind the academically driven education system or children who experienced learning difficulties. Classroom support professionals were a vital component of the development of the inclusive and more child centred stance that Singapore's education landscape is taking. This is important for all the children – not only for those with low-income family backgrounds. Having discussed the broad benefits of the CCFs' roles and responsibilities within the early childhood landscape in Singapore, it is also timely to consider what was not as much emphasized by the practitioners studied. Early childhood is the stage where children learn to interact with other people as well as know themselves as individuals. As such a greater focus on social-emotional support might be even more beneficial than a targeted focus on academic success. In this, the CCFs were identified as an important resource, yet even their presence did not always guarantee emotional support and sense of security that young children need in their learning. Furthermore, the quality of the program was sacrificed by the lack of sufficient time for planning and clear pedagogical leadership between teachers, principals and CCFs.

Singapore's population density (8000 per km) is one of the highest in the world after Macao and Monaco (Ritchie, 2019). We can see the ramifications of this in the early childhood education classrooms which are ethnically diverse and big with often 30–40 children in one classroom with 2 teachers. The CCFs interviewed for this study did not mention the use of culturally or linguistically responsive teaching to assist children who may not be proficient in English and Chinese Mandarin. It is therefore vital that more attention is placed on providing effective individualized support by educators to children with needs or coming from at risk backgrounds which may compromise their learning in the long run. This necessitates examining how children from non-English and Chinese speaking backgrounds can be specifically helped to overcome the limitations that language may bear on their overall learning and development. This is a significant area that needs more targeted focus in order to provide in-depth support based on the child's own life experiences. With the classroom support programs, greater emphasis needs to be placed on the learning experiences instead of only concentrating on the child outcomes.

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