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Early Childhood Education in Asia: Singapore

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Early Childhood Education in Singapore

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Introduction

Singapore is a small and compact city that has a total land area of 718km² and a population of 5.5 million comprising approximately 76% Chinese, 15% Malays, 7% Indians, and 2% Others (Singapore Department of Statistics, 2015). Being a multicultural country with no natural resources other than its people, the Singapore government has placed great emphasis on building an educated workforce to drive its economy. Government expenditure on education in 2015 was S\$12.1 billion which was the second highest after defence (Singapore Budget, 2016). Hence, education is highly valued in Singapore, starting from pre-school.

Like many developed countries in the world, the population growth rate in Singapore has fallen in recent years, prompting the government to promote pro-family policies such as longer maternity leave, paternity leave, higher tax reliefs for children, baby bonus, and infant-care/childcare subsidies. These pro-family policies also support the government's economic policies to attract and retain women in the workforce. As a result, many parents have turned to infant or child care centres to care and educate their children.

Pre-school Education in Singapore

Formal schooling is compulsory in Singapore and it begins when children are admitted to Primary One at age seven years. Prior to that, it is common for children to attend a pre-school (childcare centre or kindergarten), although pre-schooling is not compulsory in Singapore. Some parents may enroll their children in a child care centre (for a full day or half a day) to care and educate their children while they are at work. Other parents may enroll their children in a kindergarten (for 3 or 4 hours) if they have grandparents, relatives or maids to care for their children after their children return home from the kindergarten.

While infant/toddler care is for children aged 3 years and below, nursery is for 4 year-olds and kindergarten is for 5- and 6- year-olds. The pre-schools are categorized as follows: government, government-funded, not-for-profit and commercial. These pre-schools vary in their programmes offered, fees charged, and location. The pre-schools are located all over the island - void decks of blocks in Housing and Development Board (HDB) estates, private landed property (semi-detached or bungalow houses), places of worship (churches, mosques, or temples), workplace premises, etc. These pre-schools have either adopted or are inspired by the early childhood care and education (ECCE) programmes such as Montessori, Reggio Emilia, High-scope, Waldorf, Project- or Inquiry- based Learning.

The pre-school sector in Singapore began when the first crèche was set up by the then Ministry of Social Affairs (MSA) back in 1949 (MCYS, 2008). Since then several

child care centres and kindergartens were set up to provide low cost ECCE services. Subsequently, in 1980, the then Ministry of Community Development (MCD) supported the government's initiative to attract more women into the workforce by setting up more child care centres to provide caregiving services while mothers were at work (MCYS, 2008). Many private operators were involved in the expansion and soon, kindergartens and child care centres began to mushroom all over Singapore. Today, there are currently more than 1196 child care centres and 499 kindergartens (Skoolopedia, 2015). There also are infant care centres located on their own or within the child care centres. These infant care centres have also increased from only 25 in 2004 to about 393 in 2015 (Skoolopedia, 2015).

Realizing that pre-schooling is important and contributes to later development, learning, and behaviour, the Singapore government has considered pre-school education as an important part of the education system and increased its attention given to the pre-school sector in recent years. Hence, the introduction of new policies, measures and initiatives over the years has pushed the pre-school sector forward in making changes for the provision of quality pre-school education in Singapore.

Waves of Change

In 1999, a Steering Committee headed by Dr. Aline Wong, then Senior Minister of State (Education), was set up to improve/enhance the pre-school sector in Singapore. Four areas were identified – regulations, curriculum, training, and research (Leong, 1999). Additionally, increasing demands from parents for higher quality care and education for their children, as well as the release of the Starting Well Report by the Lien Foundation which ranked Singapore 29 out of 40 countries (Economic Intelligence, 2012), made it necessary for the government to expedite the implementation of changes in the pre-school sector.

In 2013, the Early Childhood Development Agency (ECDA) was set up by the two ministries, Ministry of Social and Family Development (MSF) and Ministry of Education Pre-school Branch (MOE PEB), to become a one-stop body to oversee the pre-school sector. Many changes were introduced in various areas of the pre-school sector during this time.

Regulations

While the kindergartens were regulated under the Education Act 1958, childcare centres were regulated under the Childcare Act 1988. Until 2013, kindergartens and child care centres used to come under the purview of the MOE PEB and MSF respectively. The MSF was previously known as Ministry of Community Development (MCD) and then, Ministry of Community Development, Youth and Sports (MCYS).

While the MSF had put in place licensing guidelines to regulate the child care centres, it was only from 2000 that MOE PEB drew up licensing guidelines for kindergartens. Operators had to meet these guidelines which stipulated the criteria for setting up the pre-school (e.g. physical environment, staff-to-child ratio, and teacher qualifications and training). Licenses were issued to the operators for a period of 2 or 3 years, depending on whether all the criteria were met. It was believed that these licensing

guidelines would ensure that the pre-schools were providing at least a minimum quality of care and education to young children in Singapore.

Singapore Pre-school Accreditation Framework

In 2010, the Singapore Pre-school Accreditation Framework (SPARK) was introduced to recognise and support pre-schools in their efforts to improve their quality in order to enhance the holistic development and well-being of young children (ECDA, 2014). Under SPARK, an instrument called the Quality Rating Scale (QRS) comprising seven criteria (Leadership, Planning and Administration, Staff Management, Resources, Curriculum, Pedagogy, and Health, Hygiene and Safety), is used for Self-evaluation and assessment of pre-schools and their programmes.

Currently, about 350 or more pre-schools have undergone and been awarded the SPARK accreditation, which lasts for a period of 2 years (and renewable after 2 years). Some pre-schools have voiced that, although the accreditation is beneficial in improving process in the pre-school and indicating to parents that they have achieved the quality benchmark, the whole process is time-consuming and involves much effort and manpower, which poses a challenge to pre-schools facing a current shortage of teachers.

Kindergarten Curriculum Framework 2008

In 2003, the MOE PEB launched the Kindergarten Curriculum Guidelines (KCG) aimed to ensure that children receive the “same quality of learning” across different age groups and settings (Tan, 2007, p.39). To ensure the smooth transition from pre-school to primary school, the MOE PEB formulated a set of Desired Outcomes of Pre-school Education which aligned with the set of Desired Outcomes of Primary Education as follows:

- Know what is right and what is wrong
- Be willing to share and take turns with others
- Be able to relate to others
- Be curious and able to explore
- Be able to listen and speak with understanding
- Be comfortable and happy with themselves
- Have developed physical co-ordination and healthy habits
- Love their families, friends, teachers and school

This set of outcomes, which underlie the KCG, focused on the holistic development of the child. Previously, the curriculum in many pre-schools focused on preparing children for primary school rather than for life-long learning and on developing academic competencies rather than the social and emotional competencies of the child. As it was not mandatory for pre-schools to adopt the KCG, some pre-schools continued to focus on developing children’s reading, writing and arithmetic skills. This Framework was revamped in 2008 to meet the changing needs of the pre-school sector.

In 2011, the MSF launched the Early Years Development Framework (EYDF). While the KCG provides guidance for the nursery and kindergarten programmes, (4 years to 6 years), the EYDF provides guidance to the infant/toddler programmes (birth to 3

years). Teachers and parents welcomed the EYDF as it recognized the infant/toddler care services as an important part of the pre-school sector. Additionally, it emphasized that infants/toddlers require both care and education.

Nurturing Early Learners Framework 2012

The MOE has continuously reviewed and enhanced the kindergarten curriculum to ensure the quality of pre-school education in Singapore. In 2013, the MOE launched the Nurturing Early Learners (NEL) 2012, a refreshed version of the Kindergarten Curriculum Framework 2008. As with previous versions, the NEL Framework 2012 is not mandatory for the pre-schools to adopt. However, the ECDA provided training for pre-school leaders and teachers on the use of the NEL 2012 in their pre-schools.

The NEL Framework 2012 aimed to balance the provision of core knowledge with the need to nurture children’s creativity, as well as integrate the various learning areas - aesthetics and creative expression, discovery of the world, language and literacy, numeracy, motor skills development, and self and social awareness (MOE, 2013). It focuses on purposeful play which ensures that there are clear objectives and outcomes in the activities planned for the children. As shown in Figure 1, the iTeach principles are supposed to guide the teacher in planning activities which help develop the child holistically.

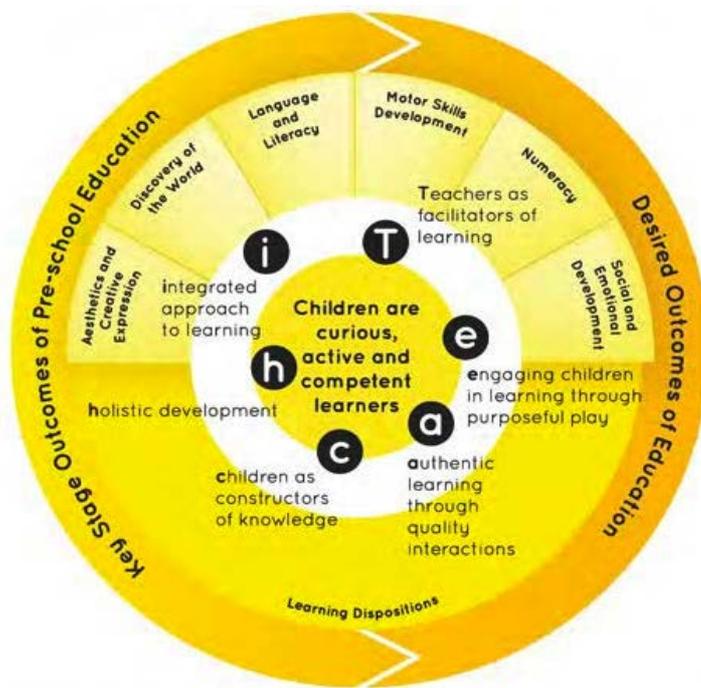


Figure 1: MOE Kindergarten Curriculum Framework 2012

This play-based curriculum is in line with the view that children are spontaneous and imaginative and can construct knowledge through purposeful play (e.g. songs, rhymes, stories, games, and group activities) and can develop life-skills (e.g. problem-solving and creative and critical thinking skills) through less formalized and structured

programmes. However, not many pre-schools are ready or share this view and they continue to focus more on developing children's academic skills in order to meet parents' requests in preparing their children for the perceived academic rigors of primary one.

Pre-school Qualifications Accreditation Committee

One of the key driving forces behind high quality pre-school education is high quality teacher-training and a high level of professionalism in the early childhood workforce (OECD, 2011). In 2001, a Pre-school Qualifications Accreditation Committee (PQAC) was jointly set up by the MOE PEB and then MCYS to assess and approve the training programmes, course content modes of assessment, trainer qualifications, training facilities and resources.

Under the teacher-training framework introduced by the PQAC, a common training path for pre-school (childcare & kindergarten) teachers was mapped out. The minimum professional qualification for pre-school teachers was a Certificate in Pre-school Teaching (CPT) (470 hours). By 2006, all principals had to complete a two-tier diploma training to attain a Diploma in Pre-school education – Teaching (DPET) (700 hours) and a Diploma in Preschool Education – Leadership (DPEL) (500 hours). In addition, MOE announced that by January 2008, one in four teachers had to possess a DPET and all other teachers had to be at least certificate-trained.

Over time, entry requirements for candidates entering the pre-school sector were also reviewed and gradually raised, and a training pathway was clearly mapped out. In 2011, the PQAC reviewed and changed the minimum professional qualification for pre-school teachers and principals (ECDA, 2011). By 2013, all teachers must complete a DPET to be able to teach all levels. Teachers with a CPT could only teach children aged 3 years and below (MCYS, 2009).

In 2012, the Early Years Qualifications Accreditation Committee (EYQAC) was set up to review the teacher-training requirements for candidates working with children aged 3 years and below. As a result, the Advanced Certificate in Early Childhood Care and Education and Certificate in Early years were introduced alongside the Certificate in Infant Care (MCYS, 2012.).

Subsidies and Financial Schemes

In order to level the playing field in the primary schools, the government has introduced subsidies and financial schemes to help low-income families enroll their children in pre-schools (ECDA, 2016). Working mothers can enjoy a subsidy of \$150 for a half-day and \$300 for a full-day programme at a childcare centre. There are also financial assistance schemes for low-income families to defray the cost of childcare fees (Childcare Financial Assistance Scheme) or kindergarten fees (Kindergarten Financial Assistance Scheme) in not-for-profit pre-schools (ECDA, 2016). Additionally, the government has also set up the Child Development Accounts (CDAs) for every Singaporean child aged six years and below to help families pay for pre-school fees (Singapore Budget, 2015).

Two not-for-profit operators or anchor-operators (AOPs) namely, the PAP Community Foundation (PCF) and NTUC (now known as My First School) were identified and funded by the government to provide low-cost pre-school education to families from low-income families. While both are major players in the pre-school sector, PCF runs mostly kindergartens and MFS runs only child care centres. The number of AOPs has increased from 2 to 5 in 2014. The 3 new AOPs are Eton House International's E-bridge Pre-school, Kinderland Consortium's Skool4kidz and Metropolitan YMCA's MY World Pre-school (ECDA, 2015).

The government has also introduced the Partner Operator (POP) scheme to complement the AOP scheme so that parents can benefit from low fees and higher quality child care (ECDA, 2016). Child care operators in this scheme will have to commit to keeping fees affordable, developing their teachers and enhancing quality. However, some parents tended to associate low fees with low quality and preferred to enroll their children in pre-schools which charged high fees which ranged from S\$1000 to S\$2000 per month. Pre-schools which charged higher fees were able to recruit teachers with higher qualifications and teacher-training and pay them higher salaries which could have had an impact on their morale and performance.

Teacher-training and professional development

As research indicates that qualifications and teacher-training have an impact on the quality of pre-school education, the government has continuously reviewed and raised the teacher requirements. In 2013, the PQAC and EYQAC together instituted the following changes. Candidates working with children were grouped according to two tracks – educator track and pre-school teacher track. The educator track is further divided into three sub-groups based on the children's age – para-educator (2 months to 3 years), infant educator (2 months to 18 months), and early years educator (2 months to 3 years). The pre-school teacher track is also further divided into three sub-groups based on the children's age – para-educator (5 years to 6 years), pre-school teacher (18 months to 4 years), and pre-school teacher (18 months to 6 years). Each group of candidates has its own set of entry requirements, qualifications and training. Candidates working as Leaders in the preschool (Principal, Directors or Supervisors) also have their own set of entry requirements, qualifications and training. Please refer to Appendix 1 for details.

In 2012, a Continuous Professional Development (CPD) programme was instituted to provide in-service training to teachers to continue upgrading their knowledge and skills to ensure the provision of high quality pre-school education. Generous funding and time-off for training were also made available for teachers and leaders to grow and develop in their profession.

While the entry qualifications and training requirements of the pre-school leaders and teachers were raised, it appeared that the younger children were cared for by teachers who had lower qualifications and teacher-training. However, research seem to indicate that younger children need teachers of more or at least the same qualifications and teacher-training as older children.

Research and development

Research is important as it informs policy, training and practice. However, there is a dearth of research conducted in the field of early childhood care and education in Singapore. The National Institute of Education (NIE) is one of the key organisations that is currently helping to develop and build a research base for the pre-school sector. The ECDA has set up the Early Childhood Research Fund to provide grants (up to S\$8000) for teachers, educators and academics to conduct research. There is also another source of funding for research provided by the MCYS Family Research Fund (FRF) but grants are larger and usually taken up by academics.

While efforts are being made to encourage pre-school teachers and leaders to embark on research or action research, the take-up rate has been slow and low. Reasons given include lack of manpower, time, and other more urgent priorities.

Policies and guidelines

Studies have shown that early education provide the foundation for all future learning and development (Arnett, 2012). Given the benefits of pre-school education, the ECDA is determined to get as many of the children from lower-income families as possible to participate in pre-school education in order to help level up opportunities early in life. As more than 99% children are attending pre-schools, Prime Minister Lee Hsien Loong announced in his National Day Rally Speech that the government will invest substantial resources in pre-school education and play a more active role (Lee, 2012).

Many studies have shown that high quality early education enhances school readiness and achievements among various social and cultural groups. Hence, it has become important to make pre-school education accessible, available and affordable to all children including vulnerable and at-risk children because of their higher returns on public investment (Karoly & Bigelow, 2005). Some studies in the United States such as the Abecedarian (Cambell et al, 2002) and the Perry School Project (Scwinhart et al., 1993; Schwinhart, 2005) reported long-lasting positive effects of early intervention. Other studies in the United Kingdom such as the Effective Provision of Preschool Education (EPPE) Project also show that high quality ECE programmes have resulted in positive child outcomes (Sylva, Melhuish, Sammons, Siraj-Blatchford, Taggart, 2004).

Despite the government's increased attention and investment in the pre-school sector, there is still a gap in the development and learning among children from lower and higher income families in Singapore. Parents from higher income groups tend to pay much more attention to their children, stimulating their development or providing early intervention, if necessary. Hence, the social divide between the families that 'have' and 'have not' continue to result in achievement gaps for their children in the primary schools.

Unique features

Intervention programmes

In March 2007, MOE announced a framework to enhance school readiness of pre-school children through a targeted and 3-pronged approach that involves the following (MOE, 2007):

- Identifying children with a weak language foundation and providing focused language assistance while they are in pre-school
- Identifying 5-year old children not attending pre-school and making it possible for them to attend pre-school
- Identifying 6-year old children not attending pre-school during registration for Primary One and encouraging them to attend pre-school so as to gain exposure to the English Language and school socialization

One of the initiatives was the introduction of a project called the Focused Language Assistance in Reading (FLAIR) in neighbourhood kindergartens in 2007. Under the FLAIR project, selected K2 children would be provided with intensive assistance to help them in the English Language (listening, speaking, reading, and writing skills) through dedicated time on a one-to-one basis or in small groups (MOE, 2007). In addition, MOE and ECDA worked with community-based organisations in conducting outreach programmes that focus on reaching out to lower-income families to send their children to pre-school.

In 2013, ECDA rolled out the Development Support Programme (DSP) in the pre-schools to support children with mild developmental delays (ECDA, 2013). The DSP aims to provide early intervention to children who have been diagnosed by a medical doctor to have mild developmental conditions (e.g. learning difficulties, speech and language delays, and behavioural problems) to overcome their mild developmental conditions and make a smoother transition to mainstream primary schooling. Through timely intervention delivered via learning support packages, Learning Support Educators work with pre-school teachers, family members, and therapy teams where necessary, to provide the children with support to address their mild developmental needs. Children who require specialised intervention may be referred for therapy. Learning Support Educators are trained pre-school staff, and they provide appropriate development and learning support to the children in one-to-one or small group settings within the pre-school. They continue to provide classroom support for these children after the completion of the intervention packages.

The fees for the programme are determined by the type of intervention recommended for the child. The MSF subsidies are available, with higher levels of support provided to lower income families. This is a big step in caring and providing for children with mild developmental delays.

MOE Kindergartens

In 2013, the government decided to set up 15 kindergartens (5 per year over 3 years) to begin to cater to children from the lower middle- and lower-income families to support the government's 'no child left behind' policy (MOE, 2016). These MOE

kindergartens were opened between 2014 and 2016. They were also set up as ‘test-beds’ to try out ideas to enhance the quality of care and education for young children. Good ideas and practices generated in these kindergartens will be shared with other pre-schools.

Issues & Challenges

Like many countries in the world, Singapore is faced with issues and challenges related to attracting and retaining teachers in the pre-school and pre-school sector. Another issue and challenge is striking a balance in the focus of the pre-school education between developing academic skills and social skills. Finally, it is important to ensure that teacher-education and professional development focuses on developing a pre-school teaching force that is effective in working with young children and their families.

Attracting & retaining the best teachers

Currently, the key challenge in the pre-school sector is the shortage of teachers in the pre-schools. It is believed that the poor image of the teacher and low salaries of the teacher have been making it difficult to attract and retain teachers in the pre-schools. While the entry qualifications and entry qualifications of the pre-school leaders and teachers were raised, it appeared that the salaries of teachers did not commensurate with the higher entry requirements and teacher-training. Hence, the pre-school sector continues to experience a shortage of teachers in terms of attracting and retaining them.

In order to fill the vacancies due to low poor image, salaries and increase in the number of pre-schools, foreign teachers have been recruited. At the same time, workers from the other sectors who are making a career switch have also been brought in to solve the manpower shortage. The Institutes of Technical Education (ITEs) and Polytechnics (namely Ngee Ann Polytechnic and Temasek Polytechnic) have also been approached to increase their intake of pre-school student teachers for the sector (Teng, 2015). These Institutes of Higher Learning (IHLs) have also been asked to review their programmes in view of the career and training path drawn up by the ECDA for the pre-school sector. These measures have certainly helped but the challenge still remains to attract and retain good staff in the sector.

ECDA has developed a training pathway that will create more career opportunities for individuals who are interested to undergo professional training and join the sector. The training pathway allows for the WDA Employability Skills certification as an alternative entry requirement to ‘O’ level academic results (WDA, 2015). Besides the training pathway, ECDA also works closely with the WDA and sector partners to attract, develop and retain teachers and other personnel for the child care sector. These initiatives include subsidised early childhood training courses, scholarships to attract new entrants, and upgrading opportunities for existing professionals. They will continue to monitor the manpower situation closely to ensure an adequate supply of appropriately qualified professionals is available.

A balance between academic and soft skills

Pre-school education in Singapore has become more academic. If formal schooling and expectation for acquisition of academic skills is pushed down to age 5 or 6 years, there is a real danger that this push will backfire. Many children are struggling and the earlier formal school is introduced, the more support the child needs. Children need an “exceptionally high quality instructional and emotional support from teachers if they are to have a chance at success” (Marcon, 2012, p.159).

One of the reasons for this could be that Singapore has been ranked among the top in the world in mathematics and science on the Trends in International Math and Science (TIMSS) in 2007; and in reading, mathematics and science scales in the Program for International Student Assessment (PISA) in 2009 (OECD, 2011). This has had an impact on pre-school education in Singapore.

However, early childhood professionals and experts in Singapore believe that everything needs to be developmentally appropriate for the early years as well as for the individual needs and well-being of the child. An overly didactic approach to teaching with an emphasis on rote memorization and correctness does little to develop children’s higher order thinking. When it is embedded within a meaningful context and used carefully, didactic teaching can help children acquire discrete skills. There must be time for teaching and scaffolding that begins with the child’s interest and builds upon the child’s understanding in order to expand ideas and perceptions (Marcon, 2012). It is argued that it is important to:

- maintain a good balance across developmental domains for each age group as well as each individual child
- ensure that play remains an essential framework for learning and developing skills across cognitive, social and physical domains

Studies provide evidence that both social-emotional and academic development can be enhanced within the same instructional model (Lonigan et al., 2015). The type of support children need to succeed in school depends on what skills children bring with them to school. Two elements on academic skill acquisition are:

- whether the skills developed early in their educational experiences are important for their later development
- whether focused instruction or early intervention that targets these skills changes the developmental course of children’s outcomes

According to Lonigan et al (2015), children from high-poverty homes have significantly less well-developed language skills (oral language, phonological awareness, and print knowledge) than do their peers from high socio-economic homes. This slower development, coupled with the substantial continuity of these abilities, put children with lower-SES background on a path toward early and enduring difficulties in school.

Hence, the government, together with various grassroots organisations, is continuously exploring new activities and programmes to identify and assist children from low-income families as early as possible. While some success has been achieved, a consolidated and systemic approach needs to be taken to manage these activities and programmes.

Critical thinking & reflection

Working with young children and their families in Singapore has become very challenging. Pre-school staff (teachers and leaders) are seeing themselves as facilitators of children's development, learning, and behaviour. It has become increasingly crucial for pre-school staff to make important choices, decisions and judgments regarding children. Hence, teacher-education and professional development must prepare pre-school staff to take on the important role and responsibilities of caring for and educating young children.

Research shows that pre-school staff's level of qualification/training exerts a strong influence on their epistemological beliefs and this in turn, affects their abilities to provide quality interactions and programming which will promote positive development, learning, and behavior among young children (Brownlee, Berthelsen & Segaran, 2009). Practice is often borne out of the values and beliefs that are held. Pre-school staff would have to be reflective about the processes of teaching and learning and on evidence-based practices. Their beliefs need to be more evaluativistic, that is, underpinned by more sophisticated epistemologies that view knowledge about practice as complex, evolving, tentative, and evidenced-based (Kuhn & Weinstock, 2002), and involving a critique of multiple perspectives (Brownlee, Berthelsen & Segaran, 2009; Berthelsen, Brownlee & Karuppiah, 2011).

Summary

We have come to a crossroads in early childhood care and education in Singapore. Competition and challenges arising from globalization and a knowledge-based economy has made it necessary to equip young children with relevant knowledge and skills as well as good values and dispositions. It has also made it necessary for children to be prepared for a smooth transition from the home to pre-school, and from the pre-school to primary school. The MOE PEB and ECDA have continuously reviewed and enhanced the pre-school curriculum and quality of pre-school principals/supervisors and teachers. They have also introduced financial assistance and intervention programmes to help pre-school children succeed in school and later life. However, the gap in development and learning among children from different socio-economic groups still exists despite government policies, measures and initiatives introduced to bridge the gap. Although much progress has been made over the last few decades, a consolidated and systemic approach involving all the relevant stakeholders would be required to resolve the issues and challenges which continue to exist in the pre-school sector in Singapore. Much work involving changing mindsets and reviewing the goals of pre-school education in Singapore would be top priority in the next wave of change.

Questions

1. To what extent is academic skills acquisition important in pre-school education?
2. What do pre-schoolers need to succeed in school and later life?
3. How appropriate are 21st century knowledge, skills, and dispositions for pre-school teachers and children?
4. What should 21st century pre-schools look like?
5. What are the issues and challenges facing the pre-school sector today and how can they be resolved?

References

- Brownlee, J. Berthelsen, D. & Segaran, N. (2009). Child care worker's and centre director's beliefs about child care quality and professional training. *Early Child Development and Care*, 179(4), 453-475.
- Berthelsen, D., Brownlee, J.. & Karuppiah, N. (2011). Multicultural education of preschool teachers in Singapore. *Australian Journal of Early Childhood Education*, 36(4), 38-42.
- Cambell, F.A., Raimey, C. T., Pungello, E., Sparling, J. & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian project. *Applied Developmental Science*, 6, 42-57.
- Early Childhood Development Agency (ECDA) (2011). *New training and certification pathway for early years educators*. Retrieved 23 February 2016 from <https://www.ecda.gov.sg/PressReleases/Pages/New-Training-and-Certification-Pathway-for-Early-Years-Educators.aspx>
- Early Childhood Development Agency (ECDA) (2013). *Rollout of early intervention programme in pre-Schools to support children with mild developmental delays*. Retrieved 23 February 2016 from <http://app.msf.gov.sg/Press-Room/Development-Support-Programme-in-pre-schools>
- Early Childhood Development Agency (ECDA) (2016). *Subsidies and Financial assistance*. Retrieved 4 April 2016 from https://www.childcarelink.gov.sg/ccls/home/CCLS_HomeParentsSubsidies.jsp
- Early Childhood Development Agency (ECDA) (2014). *Singapore pre-school accreditation framework: Quality rating scale (SPARK)*. Singapore: ECDA.
- Early Childhood Development Agency (ECDA) (2015). *Government selects three new pre-school anchor operators*. Retrieved 23 February 2016 from <https://www.ecda.gov.sg/pressreleases/pages/Government-Selects-Three-New-Pre-School-Anchor-Operators-.aspx>
- Early Childhood Development Agency (ECDA) (2016). *Partner operator scheme*. Retrieved 23 February 2016 from <https://www.ecda.gov.sg/Pages/POP.aspx>
- Economist Intelligence Unit: The Economist (2012). *Starting well: Benchmarking early education across the world*. Commissioned by Lien foundation: Economist Intelligence Unit Limited.
- Karoly & Bigelow (2005). *The economics of investing in universal preschool education in California*. Santa Monica, CA: Rand Corporation.
- Kuhn & Weinstock (2002). What is epistemological thinking and why does it matter? In B. Hofer & P. Pintrich (Eds.), *Personal epistemology: the psychological beliefs about knowledge and knowing*. Mahwah, NJ: Lawrence Erlbaum.

- Lee, H. L. (2012). *Prime minister's national day rally speech 2012*. Retrieved 4 April 2016 from <http://www.pmo.gov.sg/mediacentre/prime-minister-lee-hsien-loongs-national-day-rally-2012-speech-english> Leong, W. K. (14 November 1999). *Panel to look into pre-school education*. Singapore: The Straits Times. p.27.
- Lonigan, C. J., Phillips, B. M., Clancy, J. L., Landry, S. H., Swank, P. R., Assel, M., Taylor, H. B., Klein, A., Starkey, P., Domitrovich, C. E., Eisenberg, N., de Villiers, J., de Villiers, P., Barnes, M. and The School Readiness Consortium (2015), Impacts of a Comprehensive School Readiness Curriculum for Preschool Children at Risk for Educational Difficulties. *Child Development*, 86: 1773–1793. doi: 10.1111/cdev.12460
- Marcon (2012). The importance of balance in early childhood programs. In S. Suggate, & E. Reese (Eds.), *In Contemporary debates in childhood education and development*. Abingdon, UK: Routledge. p.10.
- Ministry of Community Development, Youth and Sports (MCYS) (2008). *Child care in Singapore: Waves of professionalism*. Singapore: Author.
- Ministry of Community Development, Youth and Sports (MCYS) (2009). *Teacher certification for childcare centre personnel: Improving the quality of pre-school education*. Retrieved on 4 April from https://www.childcarelink.gov.sg/ccls/uploads/Teacher_Certification_website__19Nov10.pdf
- Ministry of Community Development, Youth and Sports (MCYS) (2011). *Early years development framework for child care centres*. Singapore: MCYS.
- Ministry of Community Development, Youth and Sports (MCYS) (2012). *Accreditation standards for early years training course*. Retrieved on 4 April from https://www.childcarelink.gov.sg/ccls/uploads/eyqac_accreditation_standards.pdf
- Ministry of Education (MOE) (2007). *Leveling Up Opportunities: Improving the quality of pre-school education and increasing participation in pre-schools*. Retrieved 23 February 2016 from <https://www.moe.gov.sg/media/press/2007/pr20070307c.htm>
- Ministry of Education Preschool Education Branch (MOE) (2013). *Nurturing early learners: Kindergarten curriculum guide*. Singapore: MOE.
- Ministry of Education (2016). Pre-school: MOE kindergartens. Retrieved 23 February 2016 from <https://www.moe.gov.sg/education/preschool>
- Ministry of Manpower (MOM) (2013) *Marriage and parenthood (M & P) package*. Retrieved 23 February 2016 from <http://www.mom.gov.sg/newsroom/Pages/HighlightsDetails.aspx?listid=149>

- Organisation for Economic Co-operation and Development (OECD) (2011). *Singapore: Rapid improvement followed by strong performance*. Retrieved from <http://www.oecd.org/pisa/48758240.pdf>
- Singapore Government (2016). Budget 2016: *Partnering for the future – Analysis of revenue and expenditure: Financial year 2015 and 2016*. Retrieved 5 April 2016 from http://www.singaporebudget.gov.sg/data/budget_2016/download/FY2016_Analysis_of_Revenue_and_Expenditure.pdf
- Singapore Department of Statistics (2015). *Population and land area*. Retrieved from <http://www.singstat.gov.sg/statistics/latest-data#14>
- Schwinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993). *Significant benefits: The HighScope Perry preschool program*. (Monographs of the HighScope Education Research Foundation, 11). Ypsilanti, MI: HighScope Press.
- Scwinhart, L.J., Monie, J., Xiang, Z., Barnett, W. S., Belfield, C. R., & Nores, M. et al. (2005). *Lifetime effects: The HighScope Perry Preschool study through age 40*. (Monographs of the HighScope Education Research Foundation, 11). Ypsilanti, MI: HighScope Press.
- Singapore Workforce Development Agency (WDA) (2015). *Early childhood care and education*. Retrieved from <http://www.wda.gov.sg/content/wdaweb/L207-AboutWSQ/L301-WSQIndustryFramework-EarlyChildhoodCareandEducation.html>
- Skoolopedia (2015). *Preschool landscape in Singapore*. Retrieved 24 March 2016 from <http://skoolopedia.com/preschool-singapore-2015-infographic/>
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2004). *The effective provision of pre-school education (EPPE) project: Findings from pre-school to end of key stage 1*. Nottingham, UK: DfED Publications.
- Tan, C. T. (2007). Policy developments in pre-school education in Singapore: A focus of the key reforms of kindergarten education. *International Journal of Child Care and Education Policy*, 35 (1), 35-43.
- Teng, A (27 August 2015). 300 gain entry to early childhood courses before exams. Retrieved 25 March 2016 from <http://www.straitstimes.com/singapore/education/300-gain-entry-to-early-childhood-courses-before-exam>

Training Pathway & Requirements

Candidates working with children aged 3 years and below must have at least any of the following:

Position	Age-group of Children	Training in EC	Entry Requirements
Childcare Teacher	18 months to 4 years	Certificate in Early Childhood Care & Education (<i>CECCE</i>) OR ITE Certificate in Early Childhood Education (<i>CECE</i>)	3 GCE 'O' levels with credit in EL 1 or MTL (<i>Mother Tongue</i>)
Educarer	2 months to 3 years	WSQ Advanced Certificate in Early Years (<i>ACEY</i>)	Secondary 4 with WPL average SOA of 5 & credit in EL1 or IELTS 5.5 or SOA 5 in WPL (written)
Educarer	2 months to 18 months	WSQ Certificate in Infant Care (<i>CIC</i>)	At least Secondary 2 with Fundamentals in Early Childhood Care and Education (<i>FECCE</i>) & WPL SOA 4

Candidates working with children aged 4 to 6 years, on the other hand, must have at least any of the following teacher-training:

Position	Age-group of Children	Training in EC	Entry Requirements
Childcare Teacher	4 years to 6 years	WSQ Professional Diploma in Early Childhood Care & Education (<i>PDECCE/CC</i>) OR Advanced Diploma in Kindergarten Education – Teaching (<i>ADKET</i>)	3-year Polytechnic Diploma with credit in EL1 or Degree in other disciplines
		Diploma in Early Childhood Care & Education –Teaching (<i>DECCE-T</i>)	5 GCE 'O' levels with credit in EL1 or MTL

Candidates as Leaders in the preschool (Principal, Directors or Supervisors) must have at least any of the following:

Position	Age-group of Children	Training in EC	Entry Requirements
Leader	18 months to 6 years	Specialist Diploma in Early Childhood Care & Education (<i>SDECCE</i>)	3-year Polytechnic Diploma with credit in EL1 <i>or</i> Degree in other disciplines
		SDECCE – Leadership Components	WSQ Professional Diploma in Early Childhood Care & Education (<i>PDECCE/CC</i>) OR Advanced Diploma in Kindergarten Education – Teaching (<i>ADKET</i>) & 3-year Polytechnic Diploma with credit in EL1 <i>or</i> Degree in other disciplines
		3 YR FULL-TIME DIPLOMA IN EARLY CHILDHOOD EDUCATION (Teaching & Leadership)	5 GCE ‘O’ levels with credit in EL1 <i>or</i> MT (<i>Mother Tongue</i>)
		Diploma in Early Childhood Care & Education – Leadership (<i>DECCE-L</i>)	Diploma in Early Childhood Care & Education – Teaching (<i>DECCE-T</i>) & 5 GCE ‘O’ levels with credit in EL1 <i>or</i> MT (<i>Mother Tongue</i>)

Source: Early Childhood Development Agency (ECDA) (n.d). A career guide for early childhood professionals. Retrieved from https://www.ecda.gov.sg/Documents/EC%20Career%20Guide_final_web.pdf

Training Pathway & Requirements

Candidates working with children aged 3 years and below must have at least any of the following:

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Position	Age-group of Children	Training in EC	Entry Requirements
Childcare Teacher	18 months to 4 years	Certificate in Early Childhood Care & Education (<i>CECCE</i>) OR ITE Certificate in Early Childhood Education (<i>CECE</i>)	3 GCE 'O' levels with credit in EL 1 or MTL (<i>Mother Tongue</i>)
Educarer	2 months to 3 years	WSQ Advanced Certificate in Early Years (<i>ACEY</i>)	Secondary 4 with WPL average SOA of 5 & credit in EL1 or IELTS 5.5 or SOA 5 in WPL (written)
Educarer	2 months to 18 months	WSQ Certificate in Infant Care (<i>CIC</i>)	At least Secondary 2 with Fundamentals in Early Childhood Care and Education (<i>FECCE</i>) & WPL SOA 4

Candidates working with children aged 4 to 6 years, on the other hand, must have at least any of the following teacher-training:

Position	Age-group of Children	Training in EC	Entry Requirements
Childcare Teacher	4 years to 6 years	WSQ Professional Diploma in Early Childhood Care & Education (<i>PDECCE/CC</i>) OR Advanced Diploma in Kindergarten Education – Teaching (<i>ADKET</i>)	3-year Polytechnic Diploma with credit in EL1 or Degree in other disciplines
		Diploma in Early Childhood Care & Education –Teaching (<i>DECCE-T</i>)	5 GCE 'O' levels with credit in EL1 or MTL

Candidates as Leaders in the preschool (Principal, Directors or Supervisors) must have at least any of the following:

Position	Age-group of Children	Training in EC	Entry Requirements
Leader	18 months to 6 years	Specialist Diploma in Early Childhood Care & Education (<i>SDECCE</i>)	3-year Polytechnic Diploma with credit in EL1 or Degree in other disciplines
		SDECCE – Leadership Components	WSQ Professional Diploma in Early Childhood Care & Education (<i>PDECCE/CC</i>) OR Advanced Diploma in Kindergarten Education – Teaching (<i>ADKET</i>) & 3-year Polytechnic Diploma with credit in EL1 or Degree in other disciplines
		3 YR FULL-TIME DIPLOMA IN EARLY CHILDHOOD EDUCATION (Teaching & Leadership)	5 GCE ‘O’ levels with credit in EL1 or MT (<i>Mother Tongue</i>)
		Diploma in Early Childhood Care & Education – Leadership (<i>DECCE-L</i>)	Diploma in Early Childhood Care & Education – Teaching (<i>DECCE-T</i>) & 5 GCE ‘O’ levels with credit in EL1 or MT (<i>Mother Tongue</i>)