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Singapore

Developing Career Pathways for Early Childhood Care and Education Workers

Country Brief Snapshot

Singapore's early childhood care and education (ECCE) sector is comprised of childcare centers and kindergartens, provided primarily by private operators. Recent policy developments have focused on efforts to: unify the sector's governance, regulations, and workforce under the auspices of the Early Childhood Development Agency; expand access and affordability; and improve the quality of early childhood centers and personnel. With more dual-income families and working grandparents, as well as growing awareness of the importance of early childhood development, there is rising demand for ECCE services and a shortage of qualified professionals. In response to this growing demand, Singapore has introduced a range of initiatives to attract, support, and retain workers to the profession. In particular, the Government has invested in new competency-based training and professional development frameworks and created pathways and incentives to support career advancement. In addition, it has launched efforts to diversify the ways individuals can enter the profession. This brief presents Singapore's approach to develop career pathways for ECCE professionals and analyses the enabling conditions and barriers to implementing this approach. Singapore's recent focus on ECCE workforce development offers lessons for other countries seeking to address recruitment challenges and ensure that those who work with young children have ongoing opportunities for professional development and career advancement.

Introduction: Increased Attention to Early Childhood Care and Education¹

Singapore has developed a world-renowned education system since gaining independence in 1965. A small, multi-ethnic society of about 5 million people, with limited natural resources, the government has invested in education as a strategy to strengthen its human capital and foster national economic development. Singapore is consistently one of the strongest performers in international large-scale assessments, such as PISA and TIMSS, and its success is often

attributed to the caliber of its primary and secondary school teachers.^{2,3} While the early years workforce has received less attention historically, the government's recent policy focus on early childhood care and education (ECCE) offers lessons for other countries seeking to address recruitment challenges and ensure that those who work with young children have ongoing opportunities for professional development and career advancement.

Overview of the ECCE sector

Currently, there are about 170,000 children attending 1,400 childcare centers and 400 kindergartens (see Table 1).⁴ The government plays a large role in governance, regulation, and financing, while the private sector – non-profit and for-profit – is the dominant service provider. For-profit operators, including some mega-sites and several chains of centers, operate about half of childcare and kindergarten provision.⁵ While childcare provision is mostly for-profit, more

than half of Singapore’s kindergarten provision is not-for-profit, including those run by religious establishments. The Ministry of Education currently runs 15 kindergartens. An estimated 21 percent of children under age 2, 79 percent of children ages 2-4, and 90 percent of children ages 5-6 attend center-based provision.⁶ Almost all children attend at least one year of childcare or kindergarten before beginning primary school at age 7.⁷

Table 1. Main forms of ECCE provision in Singapore

Childcare Centers	Kindergarten
<ul style="list-style-type: none"> • 2 months to 6 years old • Mon-Sat (year-round) • Full day, part day, and flexible options 	<ul style="list-style-type: none"> • 2 years to 6 years old • Mon-Fri (school term) • Generally 4 hours per day

Recent ECCE policy developments

After doubling investment in the early childhood sector since 2012,⁸ the Government recently announced that annual public spending is projected to double again from about US\$622 million to US\$1.24 billion over the next five years.⁹ Recent policy developments in Singapore have focused on strengthening the coherence of the early childhood care and education system, expanding access, and improving quality:

- **In 2013, the Early Childhood Development Agency (ECDA) was established as an autonomous, regulatory agency jointly overseen by the Ministry of Education (MoE) and Ministry of Social and Family Development (MSF).** Formerly, kindergartens and childcare centers fell under the auspices of the MoE and MSF respectively. The development of a single agency responsible for ECCE was a major step toward unifying the field and overcoming fragmentation of services, including greater harmonization of government regulations and common workforce development efforts.
- **In response to strong unmet demand, particularly from working parents, there has been significant**

expansion of early childhood services. Between 2008 and 2015, the number of childcare centers and kindergartens increased from about 1,200 to about 1,800 throughout Singapore.¹⁰ In 2017, the Government announced plans to increase the capacity of childcare centers by more than 30 percent, adding 40,000 new full-time places, including doubling the number of infant places to more than 8,000 by 2020.¹¹ The government targets financial support to improve affordability, especially for economically disadvantaged families.¹² For example, as part of the Anchor Operator Scheme, Singapore provides funding directly to eligible non-profit providers. In turn, these providers offer income-related, fee subsidies to about 45,000 lower- and middle-income families. The number of families benefitting from subsidized places in childcare centers and kindergartens more than doubled from 2012 to 2017.

- **Several recent government efforts target quality improvement.** In 2017, the *Early Childhood Development Centres Act* harmonized regulations for childcare centers and kindergartens by requiring all programs to be licensed.¹³ About half (880)

kindergartens and childcare centers are certified under the *Singapore Pre-school Accreditation Framework* (SPARK), which involves participation in a quality rating exercise by external assessors. This voluntary accreditation encourages providers

to exceed minimum requirements to receive a certificate and provides parents with a measure of preschool quality.¹⁴ There is also *Nurturing Early Learners* - a voluntary curriculum framework for children aged 4-6.

Policy challenges

There is growing awareness in Singapore of the importance of participation in quality early childhood care and education for children's healthy development, educational attainment, and future earnings. Despite encouraging recent policy efforts, Singapore has experienced slow workforce growth and has faced difficulties in attracting people to join and remain in the ECCE profession as a viable long-term career option. For example, only about 56 percent of new ECCE graduates remain as teachers one year after graduation.¹⁵ Low salaries, perceived low professional prestige, lack of professional autonomy, esteem,

or respect from the public, and a seeming lack of career advancement opportunities were among the reasons ECCE teachers cited for leaving the profession in a recent study.¹⁶ High demand for trained ECCE professionals also has fueled staff turnover. It is not uncommon for ECCE providers with more resources to offer good teachers a better pay package to leave their current positions. By current estimates, the ECCE sector will require 4,000 more early childhood professionals by 2020. In particular, the rapid growth of infant care will require additional staff to work with infants and younger children.¹⁷

Policy responses

In response to these challenges, Singapore has taken a multi-faceted approach to ensure that: (a) there are sufficient, highly qualified workers entering the profession and (b) current workers receive support to upgrade their skills and advance professionally. The Government provides information and options for prospective early childhood workers to enter the field and obtain the

requisite knowledge and skills to succeed in different roles. At the same time, it has created diverse options and incentives for existing workers to close skills gaps, upgrade their qualifications, and serve in different roles within the profession. The details of these comprehensive policy responses are described in more detail below.

Overview of the Early Childhood Care and Education Workforce

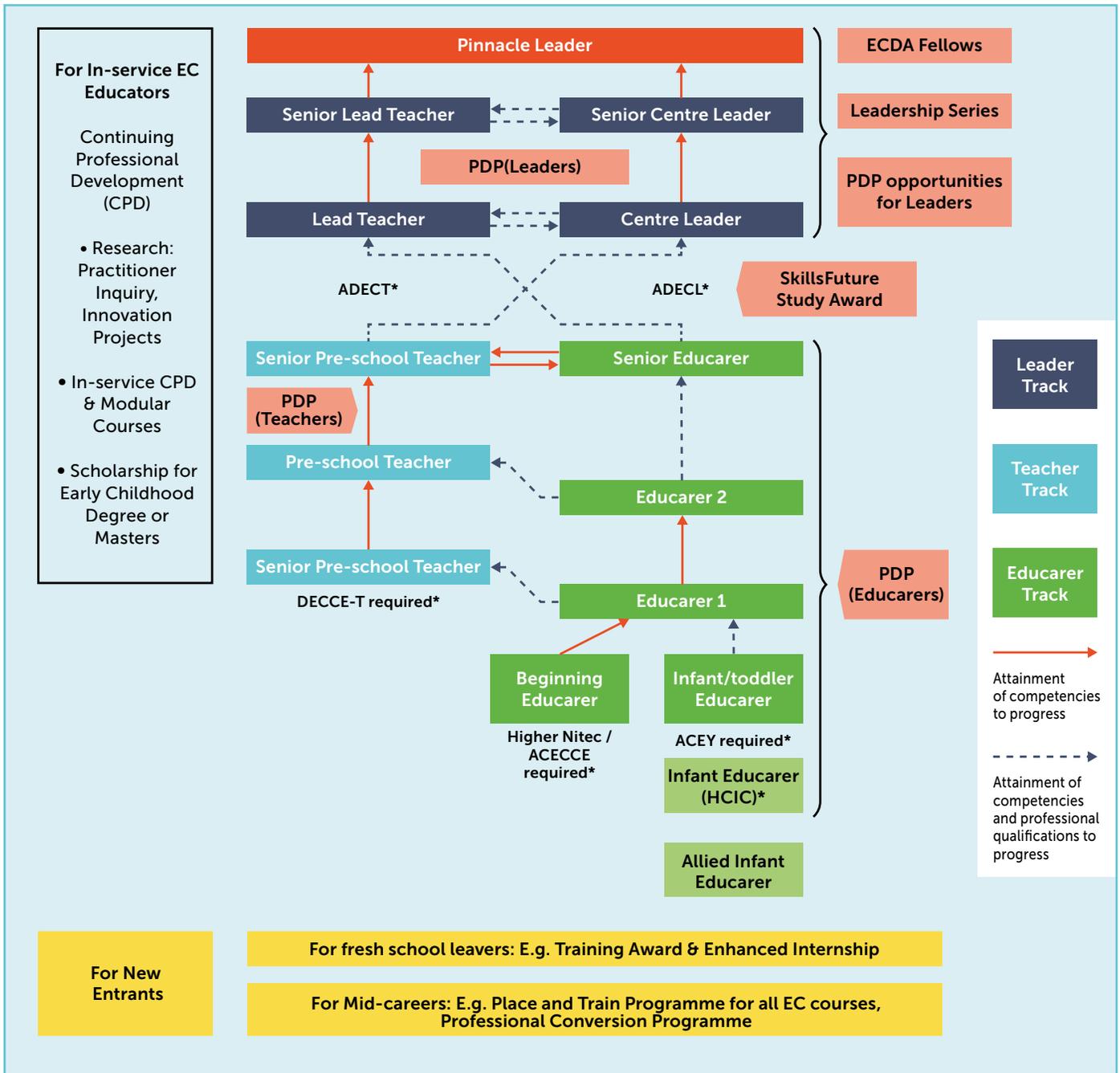
There are three career tracks for early childhood professionals: *Educators* (for children aged 2 months to 4 years), *Teachers* (for children aged 4-6 years), and *Leaders*. Currently, there are about 17,000 early childhood educators across these three tracks.

The entry qualification is at the certificate level for Educators and the diploma level for early childhood Teachers.¹⁸ With government support, training options have expanded from offerings provided only by private training agencies to full-time and part-time certificate and diploma programs at state polytechnic institutions and the Institute of Technical Education.¹⁹ In 2019, a new National Institute of Early Childhood Development

(NIEC) will roll out a diploma in early childhood education with a standardized core curriculum at Ngee Ann Polytechnic and Temasek Polytechnic that will replace three existing diplomas. To receive the new diploma from these state polytechnics, students will need to complete two practicums and a 22-week student internship.²⁰

Educators on all three tracks need to meet relevant academic, language, and professional requirements for ECDA certification.²¹ Within each track, there are multiple roles (13 positions total) with pathways for individuals to progress in their careers by attaining new competencies and qualifications (see Figure 1).

Figure 1: Pathways for Early Childhood Educators²²



Source: Adapted from ECDA. (2018). *Prospectus 2019*. Singapore: ECDA.

A Promising Approach: Paths for Workers to Enter the Profession, Upgrade Skills, and Pursue Career Advancement

Singapore has introduced several recent initiatives to support and strengthen the early childhood workforce with a focus on creating pathways for workers to enter the ECCE profession, upgrade their skills, and pursue career advancement. In 2018,

these initiatives were brought under the umbrella of the new *Early Childhood Industry Transformation Map*, with the overall aim of ensuring the growth of sustainable, quality ECCE services (see Figure 2).²³

Figure 2: Timeline of recent ECCE workforce-related initiatives



Competency-based approach to career progression

Early childhood workers are included in a broader national workforce development movement, known as *SkillsFuture Singapore*, which aims to provide Singaporeans with opportunities to develop their skills throughout their lives, regardless of their starting points.²⁴ In 2016, *SkillsFuture Singapore* and the ECDA, in consultation with unions, professional associations, and early childhood operators launched the *Early Childhood Manpower Plan*, which focuses on strengthening professional development opportunities for early childhood workers, providing more supportive working environments, and improving the status and recognition of the early childhood profession.²⁵

As part of the *Early Childhood Manpower Plan*, the *Skills Framework for Early Childhood Care and Education* seeks to attract people to the ECCE

profession by making it a more viable long-term career option, boosting the skills of new and experienced workers, and contributing to quality improvement of the sector. Within each of the four pillars (see Table 2), unique competencies, skills, and responsibilities are identified for each of the 13 early childhood roles. The Skills Framework offers clear career pathways by describing what educators can do to move laterally across tracks or advance professionally to more senior positions.²⁶ Using the framework, personnel can map their existing skills, assess any gaps, prioritize their learning needs, and plan their professional development (see *Professional Development Programme* below). The framework is meant to be used by employers to strengthen human resource policies (e.g., recruitment, performance assessments) and support career development prospects for their staff.

Table 2. Main pillars of the Skills Framework for ECCE



Another feature of the *Early Childhood Manpower Plan* is to create more opportunities for career progression. Admission criteria for training courses now recognize prior experience for

those who may not meet formal qualifications. In addition, several early childhood courses were expanded to allow participants to pursue training while working.²⁷

Support for Continuing Professional Development

The *Continuing Professional Development (CPD) Master Plan* provides a roadmap to enable current ECDA-certified workers to gain the knowledge and skills they need to progress within and across the Educarer, Teacher, and Leader tracks. The Master Plan identifies a set of core and milestone courses that are offered by training agencies, polytechnics or universities and fully or partially subsidized by the government (e.g., ECDA covers 80-100 percent of the course fee for all ECDA-certified educators who participate in short-term CPD). Core courses are mapped to the four pillars of the *Skills Framework* and milestone courses prepare educators for roles with greater responsibilities. Workers who complete 20 hours per year of CPD and gain additional years of experience are eligible for bonuses and expanded job roles. The ONE@ECDA platform helps workers register for training and track their progress.²⁸

The Government also provides financial incentives for employers to give their staff opportunities to pursue additional training and ongoing professional development. For example, *SkillsFuture* provides Absentee Payroll Funding to help employers defray

the costs incurred when they send their employees for certifiable skills training during working hours. The *SkillsFuture* Study Award for the Early Childhood Sector has supported 139 experienced educators to pursue the Advanced Diploma for Early Childhood Leadership (ADECL) and the Advanced Diploma in Early Childhood Teaching and Learning (ADECT).

Two newer initiatives aim to support professional development, improve career prospects, and reduce turnover among the ECCE workforce:

- More than 500 Educarers, Teachers, and Leaders with at least three years of experience have been nominated by their employers to participate in one of three *Professional Development Programmes* that rewards participants for completing training and professional development.²⁹
- The Government has supported two cohorts of *ECDA Fellows*: 22 “pinnacle leaders” use their leadership and practical experience to help the ECDA with quality improvements in the sector and to support current and future early childhood workers.^{30,31}

Diverse entry points to the profession

To expand the supply of early childhood workers, ECDA is currently exploring more diverse and flexible entry points to the profession that are more likely to attract individuals who are coming back to formal work or switching careers. For example, the *Professional Conversion Program for Pre-School Teachers* allows participants to “train-in-place,” that is undergo training while working and earning a salary. To recruit more staff to work with infants,

the ECDA is piloting a new Allied Infant Educarer role with an apprenticeship model; participants complete fewer classroom hours than traditional training programs and receive on-the-job coaching by experienced educators. *SkillsFuture* also offers up to a 90 percent subsidy for mid-career individuals above age 40, including early childhood workers, to take courses and upgrade their qualifications.³² Table 2 provides a summary of these recent initiatives.

Table 2. Description of key ECCE workforce-related initiatives

Initiative and Description	Increase entry points to the profession	Increased professional development opportunities	Financial incentives to pursue more training	Leadership Development	Support for career pathways
Early Childhood Manpower Plan: <ul style="list-style-type: none"> Launched in the hope of attracting 4,000 more workers to the workforce by 2020 by: <ul style="list-style-type: none"> Strengthening professional development opportunities Providing workers with a more supportive working environment, and Improving the respect and recognition of the profession. 	X	X	X		X
Skills Framework for Early Childhood Care and Education: <ul style="list-style-type: none"> Provides a common framework of skills and competencies to work in the ECCE sector. Aims to boost the skills of new and experienced workers and contribute to the quality of the early childhood sector. Supports study awards and course subsidies through the <i>SkillsFuture</i> programme. 	X	X		X	X
Continuing Professional Development Master Plan: <ul style="list-style-type: none"> Provides a roadmap to enable ECDA-certified workers to gain the skills needed to progress within the Educarer, Teacher, and Leader tracks. Identifies a set of core courses and provides incentives (e.g. bonuses and expanded job roles) to those who complete the recommended 20 hours and gain additional experience. 		X	X		X
Professional Development Programme: <ul style="list-style-type: none"> Provides Educarers, Teachers, and Leaders with 180 hours of in-service training and professional development opportunities (e.g. online communities of practice) that can be completed at their own pace over three years. Provides annual cash rewards to those who complete program milestones. 		X	X		X
ECDA Fellows initiative: <ul style="list-style-type: none"> Selects exemplary early childhood professionals with high levels of leadership and professional expertise as “pinnacle leaders” who help ECDA drive quality improvements of the sector and contribute to the professional growth of the current and future ECCE workers. 				X	
Mid-career opportunities: <ul style="list-style-type: none"> Includes Professional conversion programme for Teachers and Place and Train programme for Educarers which provide training allowances and other incentives to encourage “back-to-work individuals” and career switchers to enter the profession and attain qualifications. 	X		X		X

Results to date

Many of these initiatives to attract, develop, and retain early childhood professionals are recent, and it is expected that the effects will take more time to emerge. The Government reports that progress can be observed in the increased participation of ECCE workers in relevant training courses. For example, enrolment at polytechnic early childhood diploma courses has doubled since 2015.³³ While ECCE work remains low-paid relative to similar professions, including primary teaching, there is evidence that it has become more financially

attractive. For example, average median salaries across sectors grew by about 8 percent over the past three years, while those in ECCE grew by around 15 percent.³⁴ To gauge the effectiveness of the career pathways in the *Skills Framework*, more evidence is needed on how many ECCE centers have adopted the pathways, the extent to which workers advance within and across the three early childhood tracks, and whether there are barriers that could be addressed to better support career development/advancement.

Reflections on Implementation: Enablers and Barriers

The following section reflects on the enabling environment in Singapore for supporting the early childhood workforce and its efforts to recruit, retain, and support these personnel. It highlights factors that have facilitated the introduction of new policies and programs, as well as those that have created barriers to implementation.



Enabling Conditions

- **Strong government commitment and investment** – The Government’s recent reforms focused on increasing access, affordability and quality of the ECCE system are complemented by strong national priority accorded to human resource development across sectors. Political will and financial support have facilitated the roll out of a burst of programs in a very short period of time intended to help new and existing ECCE professionals enhance their skills and advance in their careers.
- **Unified ECCE governance to harmonize quality** – The development of unified governance of ECCE provision under one anchor agency has supported quality reforms across a system with diverse service-delivery providers. The ECDA has not only harmonized childcare and kindergarten regulations and quality assurance approaches, but also has led workforce development efforts that target ECCE personnel across settings and age groups.
- **A small country with big reforms** – Singapore is a small, densely populated country, with a high GDP per capita and a centralized government. It may be easier to implement national workforce development reforms, including those focused on ECCE, in Singapore than it would be in larger, less wealthy, and more geographically dispersed and decentralized nations.



Barriers to Implementation

- **Voluntary schemes may limit participation** – Many components of Singapore’s workforce development efforts are voluntary for the workers and their employers. For example, it is not mandatory for workers to engage in continuous professional development, and there is concern about low participation levels in training programs. A recent study found that CPD opportunities are not equitably distributed, and current working conditions do not allow adequate time for ECCE personnel to participate.³⁵ The most motivated staff and those with supportive employers are more likely to seek additional training, which can exacerbate gaps between better quality and lower quality settings.
- **Incentivizing investment in skills development in a private market** – The strong reliance on private provision means that the Government tends to use a range of incentives to encourage operators to exceed minimum requirements of quality. However, uptake of some quality improvement efforts, like center accreditation, is low. Private ECCE centers may use different tools as markers of quality to parents (e.g., corporate branding or franchise awards). Similarly, private operators are not required to invest in the professional or career development of their workers.³⁶
- **Despite improvements, status and pay are still low** – Early childhood graduates earned at least 20 percent less than graduates in other disciplines in 2013.³⁷ Although the situation has improved somewhat in recent years, the pay and status of early childhood professionals remain lower than that of primary school teachers. The Government anticipates that further expansion of the preschool sector, and greater expectations from workers will lead to continued salary growth.³⁸
- **Ensuring sufficient training capacity** – As training offerings expand and diversify in terms of content, level, and format, there is a need to ensure that there are sufficient trainers with the requisite knowledge and skills. The Government likely will need to expand the pipeline of people who can develop course materials and resources for training and professional development programs.

Policy Lessons

As countries expand ECCE services and look to develop pathways for ensuring the supply and quality of ECCE personnel, the following are lessons to consider from the Singapore experience.



Including the early childhood sector in national workforce development planning is an untapped strategy to leverage resources and increase the visibility of the profession. Given that the early childhood workforce contributes to national economic development, it is important to connect early childhood personnel to national human resources planning efforts, including those in the education, health, and social welfare sectors. The inclusion of ECCE in the *SkillsFuture Singapore* movement helped unlock new professional development opportunities and financing to make a career in ECCE more rewarding. This strategy can help raise the status of individual workers and the early childhood workforce as a whole.



Both monetary and non-monetary incentives are important for encouraging workers at all levels to upgrade their skills. Singapore has introduced scholarships for training, bonuses tied to the achievement of training milestones, and various forms of recognition for workers as they develop professionally. This combination of monetary and non-monetary incentives rewards workers – from novice educators to the most experienced leaders – who pursue further training and qualifications within and across the different career tracks. It may be appropriate to complement voluntary initiatives with a mandated minimum of annual CPD for all workers.



Creating new entry points to the profession and more flexible training pathways can increase and diversify the supply of workers. To address the shortage of ECCE workers, Singapore has sought to recruit from a more diverse pool of potential candidates, including individuals who may not be attracted to or benefit from traditional modes of training. Governments facing similar workforce supply challenges can consider alternatives – such as training-in place, accelerated training, distance learning, and onsite coaching – to recruit non-traditional workers and ensure that they have the requisite skills, knowledge, and support to succeed in their roles.



A competency-based skills framework, which recognizes prior knowledge and practical experience, facilitates career progression and prospects for a broader range of workers. Singapore has focused on improving the skills of all ECCE workers and creating opportunities for them to evolve in their roles over time, both of which are important for staff satisfaction and retention. Specifically, a competency-based approach to training and career advancement provides more opportunities for workers to progress professionally, because it recognizes prior knowledge and experience. This approach may be particularly valuable for upgrading the skills of ECCE personnel who may have worked in the field for a long time but do not have high levels of formal education and training.

Endnotes

- 1 We extend our gratitude to Dr. Chan Lin Ho (Singapore University of Social Sciences) for sharing her invaluable insights.
- 2 OECD. *Lessons from PISA for the United States, Strong Performers and Successful Reformers in Education*. Paris: OECD, 2011. <http://dx.doi.org/10.1787/9789264096660-en>.
- 3 Coughlan, Sean. "Pisa Tests: Singapore Top in Global Education Rankings." *BBC News*, December 6, 2016. <https://www.bbc.com/news/education-38212070>.
- 4 Skills Future. "Skills Framework for Early Childhood Care & Education," 2016. http://www.ssg.gov.sg/content/dam/ssg-wsg/wsq/ssg/documents/Earlychildhoodcare/WDA_SSF_EarlyChildhood_22Sept_Booklet_LR_20160922_v01final.PDF.
- 5 Lim, Sirene. "Marketization and Corporation of Early Childhood Care and Education in Singapore." In *Contemporary Issues and Challenge in Early Childhood Education in the Asia-Pacific Region*. New Frontiers of Educational Research. Singapore: Springer Singapore, 2017. https://doi.org/10.1007/978-981-10-2207-4_2.
- 6 Bull, Rebecca, and Alfredo Bautista. "A Careful Balancing Act: Evolving and Harmonizing a Hybrid System of ECEC in Singapore." Research Gate, August 2018. https://www.researchgate.net/publication/327118360_A_careful_balancing_act_Evolving_and_harmonizing_a_hybrid_system_of_ECEC_in_Singapore.
- 7 Tan, Ching Ting. "Enhancing the Quality of Kindergarten Education in Singapore: Policies and Strategies in the 21st Century." *International Journal of Child Care and Education Policy* 11, no. 1 (July 11, 2017): 7. <https://doi.org/10.1186/s40723-017-0033-y>.
- 8 Bull, Rebecca, and Alfredo Bautista. "A Careful Balancing Act: Evolving and Harmonizing a Hybrid System of ECEC in Singapore." *Research Gate*, August 2018. https://www.researchgate.net/publication/327118360_A_careful_balancing_act_Evolving_and_harmonizing_a_hybrid_system_of_ECEC_in_Singapore.
- 9 ECDA. "Key moves to further transform the Early Childhood Sector." Accessed February 15, 2019. <https://www.ecda.gov.sg/PressReleases/Pages/KEY-MOVES-TO-FURTHER-TRANSFORM-THE-EARLY-CHILDHOOD-SECTOR.aspx>.
- 10 Skills Future. "Skills Framework for Early Childhood Care & Education". <http://www.skillsfuture.sg/skills-framework/ecce>.
- 11 Bull, Rebecca, and Alfredo Bautista. "A Careful Balancing Act: Evolving and Harmonizing a Hybrid System of ECEC in Singapore." Research Gate, August 2018. https://www.researchgate.net/publication/327118360_A_careful_balancing_act_Evolving_and_harmonizing_a_hybrid_system_of_ECEC_in_Singapore.
- 12 Lim, Sirene. "Marketization and Corporation of Early Childhood Care and Education in Singapore." In *Contemporary Issues and Challenge in Early Childhood Education in the Asia-Pacific Region*, edited by Minyi Li, Jillian Fox, and Susan Grieshaber, 17–32. New Frontiers of Educational Research. Singapore: Springer Singapore, 2017. https://doi.org/10.1007/978-981-10-2207-4_2.
- 13 Skills Future. "Skills Framework for Early Childhood Care & Education," 2016. http://www.ssg.gov.sg/content/dam/ssg-wsg/wsq/ssg/documents/Earlychildhoodcare/WDA_SSF_EarlyChildhood_22Sept_Booklet_LR_20160922_v01final.PDF.
- 14 Lim, Sirene. "Marketization and Corporation of Early Childhood Care and Education in Singapore." In *Contemporary Issues and Challenge in Early Childhood Education in the Asia-Pacific Region*, edited by Minyi Li, Jillian Fox, and Susan Grieshaber, 17–32. New Frontiers of Educational Research. Singapore: Springer Singapore, 2017. https://doi.org/10.1007/978-981-10-2207-4_2.
- 15 Craig, 2013 cited in Bull, R., & Bautista, A. (2018). A careful balancing act: Evolving and harmonizing a hybrid system of ECEC in Singapore. In S. L. Kagan (Ed.), *The early advantage: Early childhood systems that lead by example* (pp. 155-181). New York and Washington, DC, 2018.
- 16 Craig, 2013 cited in Bull, R., & Bautista, A. (2018). A careful balancing act: Evolving and harmonizing a hybrid system of ECEC in Singapore. In S. L. Kagan (Ed.), *The early advantage: Early childhood systems that lead by example* (pp. 155-181). New York and Washington, DC, 2018.
- 17 Ministry of Social and Family Development. "Transforming the Early Childhood Sector to Give Every Child a Good Start in Life | Ministry of Social and Family Development." Accessed February 15, 2019. <https://www.msf.gov.sg/media-room/Pages/Transforming-the-early-childhood-sector-to-give-every-child-a-good-start-in-life.aspx>.
- 18 Tan, Ching Ting. "Enhancing the Quality of Kindergarten Education in Singapore: Policies and Strategies in the 21st Century." *International Journal of Child Care and Education Policy* 11, no. 1 (July 11, 2017): 7. <https://doi.org/10.1186/s40723-017-0033-y>.
- 19 Tan, Ching Ting. "Enhancing the Quality of Kindergarten Education in Singapore: Policies and Strategies in the 21st Century." *International Journal of Child Care and Education Policy* 11, no. 1 (July 11, 2017): 7. <https://doi.org/10.1186/s40723-017-0033-y>.
- 20 En, Siau. "New National Standard Diploma for Early-Childhood Education to Start Intake next Year." TODAYonline. Accessed February 15, 2019. https://www.todayonline.com/singapore/new-national-standard-diploma-early-childhood-education-start-intake-next-year#cxrecs_s.
- 21 ECDA. Annex. Retrieved from <https://www.ecda.gov.sg/Documents/Requirements%20for%20Teacher%20Certification.pdf>.
- 22 The following terms have been abbreviated in the figure:
ADECT: Advanced Diploma for EC Teaching & Learning;
ADECL: Advanced Diploma for EC Leadership; DECCE-T: Diploma in ECCE – Teaching; ACECCE: Advanced Certificate in ECCE; ACEY: Advanced Certificate in Early Years; PDP(T): Professional Development Programme for Teachers; PDP(E): Professional Development Programme for Educators; PDP(L): Professional Development Programme for Leaders.

- 23 Ministry of Trade and Industry Singapore. Industry Transformation Maps (ITMs), 2018. <https://www.mti.gov.sg/MTIInsights/Pages/ITM-EssentialDomesticServices-Education.aspx>.
- 24 Skills Future. "SkillsFuture - AboutSkillsFuture." Accessed February 15, 2019. <http://www.skillsfuture.sg/AboutSkillsFuture>.
- 25 ECDA. Early Childhood Manpower Plan. Retrieved from <https://www.ecda.gov.sg/growatbeanstalk/PublishingImages/In%20the%20News/ECDA%20Manpower%20Plan/EC%20Manpower%20Plan%20GBS.jpg>.
- 26 Skills Future. "Skills Framework for Early Childhood Care & Education," 2016. <http://www.skillsfuture.sg/skills-framework/ecce>.
- 27 Goy, Priscilla. "New Manpower Plan for Pre-School Sector Launched, Including Skills-Focused Initiatives." *The Straits Times*, October 1, 2016. <https://www.straitstimes.com/singapore/new-manpower-plan-for-pre-school-sector-launched-including-skills-focused-initiatives>.
- 28 South-East Asian Ministers of Education Organization and UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific. "Southeast Asian Guidelines for Early Childhood Teacher Development and Management," 2016. <https://unesdoc.unesco.org/ark:/48223/pf0000244370>.
- 29 Skills Future. "Skills Framework for Early Childhood Care & Education,," 2016. http://www.ssg.gov.sg/content/dam/ssg-wsg/wsg/documents/Earlychildhoodcare/WDA_SSF_EarlyChildhood_22Sept_Booklet_LR_20160922_v01final.PDF.
- 30 ECDA. "ECDA Fellows." Accessed February 15, 2019. <https://www.ecda.gov.sg/Pages/ECDA-Fellows.aspx>.
- 31 ECDA. "Government to set aside over \$5 million in the next three years to develop leaders in the early childhood sector." Accessed February 15, 2019. [https://www.ecda.gov.sg/PressReleases/Pages/GOVERNMENT-TO-SET-ASIDE-OVER-\\$5-MILLION-IN-THE-NEXT-THREE-YEARS-TO-DEVELOP-LEADERS-IN-THE-EARLY-CHILDHOOD-SECTOR.aspx](https://www.ecda.gov.sg/PressReleases/Pages/GOVERNMENT-TO-SET-ASIDE-OVER-$5-MILLION-IN-THE-NEXT-THREE-YEARS-TO-DEVELOP-LEADERS-IN-THE-EARLY-CHILDHOOD-SECTOR.aspx).
- 32 Skills Future. "Skills Framework for Early Childhood Care & Education," <http://www.skillsfuture.sg/skills-framework/ecce>.
- 33 ECDA. "Key moves to further transform the Early Childhood Sector." Accessed February 15, 2019. <https://www.ecda.gov.sg/PressReleases/Pages/KEY-MOVES-TO-FURTHER-TRANSFORM-THE-EARLY-CHILDHOOD-SECTOR.aspx>.
- 34 Ministry of Social and Family Development. "Transforming the Early Childhood Sector to Give Every Child a Good Start in Life | Ministry of Social and Family Development." Accessed February 15, 2019. <https://www.msf.gov.sg/media-room/Pages/Transforming-the-early-childhood-sector-to-give-every-child-a-good-start-in-life.aspx>.
- 35 Bull, Rebecca, and Alfredo Bautista. "A Careful Balancing Act: Evolving and Harmonizing a Hybrid System of ECEC in Singapore." *Research Gate*, August 2018. https://www.researchgate.net/publication/327118360_A_careful_balancing_act_Evolving_and_harmonizing_a_hybrid_system_of_ECEC_in_Singapore.
- 36 Lim, Sirene. "Marketization and Corporation of Early Childhood Care and Education in Singapore." In *Contemporary Issues and Challenge in Early Childhood Education in the Asia-Pacific Region*, edited by Minyi Li, Jillian Fox, and Susan Grieshaber, 17–32. New Frontiers of Educational Research. Singapore: Springer Singapore, 2017. https://doi.org/10.1007/978-981-10-2207-4_2.
- 37 Lim, Sirene. "Marketization and Corporation of Early Childhood Care and Education in Singapore." In *Contemporary Issues and Challenge in Early Childhood Education in the Asia-Pacific Region*, edited by Minyi Li, Jillian Fox, and Susan Grieshaber, 17–32. New Frontiers of Educational Research. Singapore: Springer Singapore, 2017. https://doi.org/10.1007/978-981-10-2207-4_2.
- 38 Ministry of Social and Family Development. "Transforming the Early Childhood Sector to Give Every Child a Good Start in Life | Ministry of Social and Family Development." Accessed February 15, 2019. <https://www.msf.gov.sg/media-room/Pages/Transforming-the-early-childhood-sector-to-give-every-child-a-good-start-in-life.aspx>.

Writer: Michelle Neuman, *Results for Development*. Contributors to development and review: Denise Bonsu, Maggie Gratz, Kavita Hatipoglu, Vidya Putcha, Mark Roland.

EARLY CHILDHOOD WORKFORCE INITIATIVE

The Early Childhood Workforce Initiative is a global, multi-sectoral effort to mobilize countries and international partners to support and empower those who work with families and children under age 8. This initiative is jointly led by Results for Development (R4D) and the International Step by Step Association (ISSA), and supported by a consortium of funders including Bernard van Leer Foundation, Open Society Foundations, and ELMA Foundation.

