An Evaluative Study on the Effectiveness of the Pilot Project on Tier 1 Support Services in Kindergartens / Kindergarten-cum-Child Care Centres

Final Report

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Chapter 1

Executive Summary

1.1 In the Policy Addresses of 2018 - 2021, it was announced that the Social Welfare Department (SWD) would launch the "Pilot Project on Tier 1 Support Services in Kindergartens / Kindergarten-cum-Child Care Centres" (hereinafter the "Pilot Project") in August 2020 through the Lotteries Fund, with six project teams from six respective non-governmental organisations (NGOs), at approximately 80 kindergartens/ kindergarten-cum-child care centres (hereinafter schools) participating in the "On-site Pre-school Rehabilitation Services" (OPRS) to provide early intervention services for children, who were awaiting assessment by Child Assessment Centres (CACs), or assessed by CAC to have borderline developmental problems (i.e. Tier 1 children), so as to help them successfully transition to mainstream primary schools and to provide support to their parents and teachers.

1.2 The Social Welfare Department commissioned a research team headed by City University of Hong Kong to conduct an evaluative study on the service delivery model and effectiveness of the "Tier 1 Support Services", recommend an effective and feasible service delivery model, and explore the feasibility of integrating the Pilot Project with OPRS, currently provided for Tier 2 children (i.e. children with mild disabilities as assessed by medical or other professional assessments), so as to support pre-school children with different levels of special needs (SN).

1.3 This effectiveness evaluative study covers the following: evaluating the mode of service operation of the Pilot Project by the project teams, and the cost-effectiveness and efficacy of different components of the Pilot Project to address the diverse needs of children; recommending key parameter, service scope, and essential output and outcome indicators to be adopted for the service models(s) if regularisation of the Pilot Project is to be considered, and exploring the feasibility and recommend the service mode of merging the Pilot Project and OPRS to provide comprehensive and support for children with various levels of special needs at different stages. The research method includes longitudinal tracking of the development of the children participating in the Pilot Project; questionnaires and interviews with relevant stakeholders (teachers, parents and professionals from service operators) to collect views and opinions on the Pilot Project, in order to ascertain key successful components; assessing and analysing the special features of the service delivery mode of the various service operators; and exploring the mode of collaboration between the service operators and the schools and its effectiveness and efficacy. There is also a literature review which draws reference from local and overseas experience in service policies and modes of support in providing Tier 1 support for children with special needs and their parents.

1.4 Evaluation results indicated children's significant improvement in all domains, which evidenced that the Pilot Project could effectively help improve their abilities in all developmental domains. Parents expressed that the Pilot Project helped them alleviate parental stress and foster better general health. Parents said that the Pilot Project helped

them understand their children's behavioural outcomes and learn parenting strategies, which on one hand boosted up their confidence in giving home training for children, and on the other hand facilitated parent-child relationship and easing parenting stress. With regard to teachers' teaching efficacy, principal and teacher interviewees stated that the Tier 1 Support Services teams provided targeted training for teachers which facilitated teachers in establishing a constructive classroom environment.

1.5   With regard to recommending effective and practicable service delivery mode, including major service scope as well as output and outcome standards: despite the impact of COVID-19, the six project teams have achieved the Output Standard 1 (OS1) of the Pilot Project of providing support services to 3,931 target children by August 31, 2023. The other three output standards were also met, including services provided by psychologists (OS2), services provided by special child care workers (SCCWs) (OS3), and services for parents/guardians/carers (OS4). The two service outcome indicators were also achieved, namely, parents/guardians/carers' satisfaction towards the services (OC1), and teachers/school workers' satisfaction towards enhancement of their catering for the diversity of young children (OC2). As indicated by results of the parent survey, parents were highly satisfied with the quality of the professionals and services provided by the service operators. In respect of service delivery mode, classroom observations conducted by professionals were deemed very important and highly commended by parents as parents would then be more receptive to their children's use of the related services. Overall, quantitative and qualitative results showed that parents were generally satisfied with the service delivery mode and efficacy of the Pilot Project, and they agreed that those services could achieve the effectiveness of early intervention. Besides, principals and teachers affirmed the positive impact of the Pilot Project on children, parents and teachers. Schools were also willing to continue to participate in Tier 1 Support Services.

1.6   Information from the service operators in general suggested that the mechanisms for children to be admitted to and be discharged from the Pilot Project were operating well. In order to identify the learning and adaptation needs of Tier 1 children more effectively, the research team, having consulted the SWD, the Education Bureau (EDB) and related units, formulated the Child Observation Checklist (COC) with tested reliability and validity to screen the special needs of the children. The research team assessed 1,085 children through their teachers with COC from 70 schools participating in the Pilot Project Tier 1 Support Services, and established the sensitivity and specificity to identify children who may need support services. The validity and the screening utility of the instrument were validated, and a norm table was constructed for reference and comparison of the characteristics or situations of children of different grades. The analysis of the service delivery mode and efficacy of the Pilot Project can be found in Chapter 3.

1.7   Recommendations on practicable service delivery mode are building on routine-based learning, reinforcing support for children in large class teaching environment and strengthening the catering for young children's diversity. To provide inter-disciplinary professional training and therapy to cater for children's needs in specific developmental domains in order to foster their holistic development. To implement a school-based comprehensive support model to provide more comprehensive, flexible and sustained support to the needs of children with diverse special needs at different stages. The

implementation of the Pilot Project and OPRS by the same service operator in the same school will help create synergy in terms of resource sharing, school coordination, professional support, and administrative support. The analysis of practicable service delivery mode is detailed in Chapter 4.

1.8 Regarding the feasibility of integrating the Pilot Project and OPRS, the research team reckons that Tier 1 Support Services are short-term interventions that mainly involve classroom learning processes and behavioural support in order to facilitate children's holistic development. In comparison, Tier 2 support services under OPRS are long-term interventions, being school-based and centre-based. Both Tier 1 and Tier 2 services will conduct formative assessment for children on biannual basis to continually review the progress, the data of which will also serve as reference for children to enter or transfer to services of another tier. In the long run, after integrating Tier 1 and OPRS, further exploration on how to optimize manpower and resources should be made whenever feasible, with reference to school-based and integrated approach to offer comprehensive and flexible support and services to young children with various severity level of SN in Kindergartens / Kindergarten-cum-Child Care Centres. For detailed analysis of integrating the Pilot Project and OPRS, please refer to Chapter 5.

1.9 As indicated by the literature review, Australia and the U.S. have arrangements for trained officers and teaching staff to provide learning and behavioural support for cases suspected with SN even before the cases are confirmed. In Australia, Singapore and the U.S., the screening procedures and support services for young children diagnosed with SN are all led by professionals who provide individualised services programmes for the children. Generally speaking, services provided by the current Pilot Project in Hong Kong are similar to those in the three countries in that trained officers and teaching staff provide learning and behavioural support for children suspected with SN. The detailed literature review can be found in Chapter 6.

1.10 Based on the findings of the three research questions mentioned above and the literature review, the research team makes the following recommendations on the planning of Tier 1 and Tier 2 services. (1) Not only should the target group of Tier 1 services include Tier 2 children, but it should also cover children suspected with SN (Target Group 1), children awaiting assessment (Target Group 2), children diagnosed as having single disability (Target Group 3). (2) All Tier 2 children in OPRS, when admitted to the service, will simultaneously be provided with Tier 1 Support Services. Not only will such design help provide comprehensive support for parents and teachers, but it will also enable parents to understand the two-tiered design of services and that children enter Tier 1 service or Tier 1 cum Tier 2 services according to their special needs, progress of development and outcomes, learning and social adjustment. To enhance child outcomes in all developmental domains effectively, the research team agrees that inter-disciplinary services are needed. Inter-disciplinary teams shall include SCCWs, psychologists, professional therapists and social workers (SWs). This composition of a support team will enable parents and teachers to deepen their understanding of children with SN and master the related educational skills, so as to adjust the home and classroom environments and the related schedules and processes to meet the learning, social and adjustment needs of those children. Detailed recommendations on service regularization can be found in

Chapter 7.

1.11 At the early stage of the Pilot Project, schools and parents only had a shallow understanding of Tier 1 Support Services. It is recommended that promotion for the Project be strengthened in future so as to enrich parents and teachers' understanding of the rationales, purposes, modes and even target users of the services. In addition, parenting education and support are particularly important for parents of children with SN which will help reinforce family-school collaboration and concertedly support children with SN.

Chapter 2

Research Methodology and Results of the Evaluation Study

Introduction

2.1 This study aimed at examining the development of pre-school children beneficiaries after joining the "Pilot Project on Tier 1 Support Services in Kindergartens / Kindergarten-cum-Child Care Centres" (hereinafter the "Pilot Project") launched by the Social Welfare Department (SWD) in August 2020, as well as the effectiveness of the "Pilot Project". The target group was mainly children from schools participating in the Pilot Project, awaiting assessment by Child Assessment Centres (CACs), or assessed by CAC to have borderline developmental problems ("children with special needs"), together with their parents/carers and teachers/child care workers. Project teams operated by six non-governmental organisations (NGO) provided early intervention and support services. The progress of research can be found in Annex A.

Timeframe and Sampling Method

2.2 This study was conducted over two time points: Time 1 from November 2020 to January 2022 and Time 2 from February to July 2022. Random sampling method was adopted to recruit: "assessment group" – children from the experimental group who were recruited for assessment as well as their parents; "experimental group" – from schools participating in the Pilot Project and receiving Tier 1 Support Services; and also "control group" – from schools not participating in the Pilot Project or receiving Tier 1 Support Services. The data are summarised as follows:

Stakeholder	Item (Target No.)	Time 1 (11/2020 – 1/2022)		Time 2* (2/2022 – 7/2022)	
		Experimental Group	Control Group	Experimental Group	Control Group
Children	1. "Child Development Rating Scale" to be completed by parents (200)	208	183	170	179
	2. "Teacher Observation of Classroom Adaptation – Checklist" to be completed by teachers (200)	191	177	163	167
	3. Child assessment (100)	106	N/A	102	N/A
Parents	Parent questionnaire (200)	247	219	172	179

Teachers	Teacher questionnaire (200)	233	83	178	98
	Interview	0	0	1	1
Service Operators	NGO questionnaire	16	N/A	6	N/A
	Interview	12	N/A	2	N/A

* Due to the fifth wave of COVID-19, data collection was suspended for a month in February 2022. Data collection for Time 2 was resumed in March 2022.

Evaluation of Child Outcomes

2.3 According to the descriptive data of children, parents and teachers submitted to the SWD on October 10, 2022, about 70% of the participating children showed improvement in relevant developmental domains (including cognition, language, social interaction, fine muscles, gross muscles, and self-care) after receiving the early intervention services, and 10% to 20% of the children showed significant improvement in the relevant developmental domains. Parents indicated that the training provided by the Pilot Project had helped them build up positive parenting knowledge, relieve stress and enhance their skills in training their children. Details finding can be found in Annex B2. For children of the assessment group who joined both Time 1 and Time 2, distributions of their types of SN as reported by parents are listed in Annex B1 Table 1. The present study adopted a standardised instrument "The Hong Kong Comprehensive Assessment Scales for Preschool Children" (HKCAS-P, Department of Health, HKSAR, 2014). In Time 1, children of the assessment group were still at kindergarten stage, with mean age of 4.86, aged 3 to 6.5. The data indicated that children's outcomes in all developmental domains were at moderate levels. In Time 2, some children of the assessment group had already been promoted to primary school for approximately a year, with mean age of 5.35, aged 3.42 to 7.58. As indicated by the research findings, their developmental domains still remain at moderate levels. Table 2 lists out the means and standard deviations of assessment group children in all developmental domains of the HKCAS-P.

2.4 For children who were below the minimum age of 3 years 4 months required for the use of HKCAS-P in Time 1, the "Vineland Adaptive Behaviour Scale, Third Edition (Chinese Version): Young Children Version (for Age 2 to 5)" (Vineland-3; translated by Chang et al., 2020) was adopted by the research team to evaluate children's outcomes. The younger the children were in the Pilot Project, the lower were their outcome scores, which indicated their greater need for support services (see Table 3). In comparison to Time 1 scores, assessment group children had significant improvements in all developmental domains in Time 2: moderate in cognition, language and fine motor abilities and slight in social cognitive and gross motor abilities. This indicated that the abilities of children with SN improved with age in all developmental domains. For means and standard deviations of children's abilities in all domains, please refer to Table 4.

2.5 For the types of SN among children of the experimental group, please refer to Table 5. In Time 1, children were still at kindergarten stage, with mean age of 4.39, aged 2 to 6.67. In Time 2, some of the children had already been promoted to primary school for

approximately a year, with mean age of 5.13, aged 2.83 to 7.33. In comparison to Time 1, experimental group children had significant increases in scaled scores in all developmental domains in Time 2, with moderate improvements in cognition, language and fine motor, and slight improvements in social cognition, gross motor and self-care abilities. This indicated that the abilities of children with SN improved with age in all domains. For means and standard deviations of children's outcomes in all domains of the "Child Development Rating Scale", please refer to Table 6.

2.6   For the age distribution of the control group in Time 1 and Time 2, please refer to Table 7. In Time 1, children of the control group were still at the kindergarten stage, with most of them aged 4 to 5. In Time 2, some of the children had already been promoted to primary school for approximately a year, with most of them aged 6 or above. When compared to the evaluation in Time 1, children of the control group significantly improved in all developmental domains in Time 2, with moderate improvements in cognition, language, fine motor and self-care abilities, and slight improvements in social cognition and gross motor. For means and standard deviations of children's abilities in all domains of the "Child Development Rating Scale", please refer to Table 8. This showed that the abilities of typical children improved with age in all domains.

2.7   Children's Outcomes in All Developmental Domains: Comparison between the Experimental and Assessment Group and the Control Group: In Time 1, children of the control group were higher than their experimental and assessment group counterparts in the level of development in cognition, language and social cognition, with larger differences in the language domain. This showed that the developmental outcomes of children of the experimental and assessment group were relatively weak and they needed support services. In Time 2, while children of the experimental and assessment groups showed improvements in developmental outcomes, they were still weaker than the control group in the developmental levels of cognition, language, social cognition, fine motor and self-care abilities, with greater differences remaining in the language domain. This indicated that children of the experimental and assessment group still needed rehabilitative services to enhance their outcomes in all developmental domains, and in particular, the developmental domain of language. For details, please refer to Table 9. For children aged 4 to 4 years 11 months in Time 2, please refer to Table 10 for the means of the two groups at two times.

2.8   Comparison of the Experimental and Assessment Group and the Control Group by Age Groups and across Age Strata. Children were divided into five groups. In Time 1, all age groups of the children of the experimental group showed significant differences with an increased age. With the passage of time, they improved in all developmental domains of the "Child Development Rating Scale" such as cognition, language, social cognition, gross motor, fine motor and self-care abilities. The most noticeable progresses were found in cognition, language, social cognition, fine motor and self-care abilities. The major age difference was found in social cognition on HKCAS-P and the effect size was great, while the effect on gross motor was moderate. Please refer to Table 11 for Time 1 statistics.

2.9   In Time 2, children of the assessment group by age groups showed significant age differences in developmental domains. Children had improvements in all developmental domains of the "Child Development Rating Scale" such as cognition, language, social

cognition, gross motor, fine motor and self-care abilities with an increased age, and the effects in all domains were great. Regarding HKCAS-P, the major age differences were found in cognition, language and social cognition and the effect size was great. Please refer to Table 12 for Time 2 statistics. In Time 1, children of the experimental group by age groups showed significant age differences in three domains, including cognition, fine motor and self-care abilities of the "Child Development Rating Scale". Their developmental outcomes improved with age, with great effect size in cognition and fine motor and small effect size in self-care abilities. For details, please refer to Table 13. In Time 1, children of the control group by age groups showed significant age differences in developmental domains. With the passage of time, they improved in domains such as cognition, language, social cognition, gross motor, fine motor and self-care abilities and the effect size was great. See Table 14 for the statistics. In Time 2, children of the control group by age groups showed significant age differences in all developmental domains of the "Child Development Rating Scale". With the passage of time, they improved in domains such as cognition, language, social cognition, gross motor, fine motor and self-care abilities, and the effects were great. As indicated in the analysis of children by age groups, both the experimental and assessment group and the control group had significant age differences. With an increased age, they made improvements in all domains and the effect size was great. See Table 15 for the statistics.

2.10   Comparison of the Target Groups of the Pilot Project in the Assessment Group. The research team evaluated the ability diversity levels of the participants of the Pilot Project, with statistics in Table 16. In Time 1, significant differences among the target groups of the Pilot Project were found in two domains, with moderate effects in cognition and self-care abilities of the "Child Development Rating Scale". With regard to cognition, the children diagnosed by CAC as having borderline developmental problems or single disability but not yet eligible for awaiting Tier 2 support services had the highest outcomes, whereas those suspected with SN had the lowest. On self-care abilities, the children diagnosed by CAC as having borderline developmental problems or single disability but not yet eligible for awaiting Tier 2 support services scored the highest, whereas those awaiting Tier 2 support services scored the lowest.

2.11   The children diagnosed by CAC as having borderline developmental problems or single disability but not yet eligible for awaiting Tier 2 support services had the highest outcomes among the four target groups. The results echoed with the needs of this target group who did not have to await Tier 2 support services mainly because of their better abilities. More concern should be given to the self-care abilities of the children awaiting Tier 2 support services. In addition, there was no significant difference in Time 1 among the four target groups of the Pilot Project in all domains on HKCAS-P, indicating that the children of the four target groups were quite similar in terms of outcomes and special needs. As Time 2 data of the assessment group showed no significant difference, details are not shown here.

2.12   Interaction Effects of Time and Group in Children's Classroom Adaptation in the Experimental Group and the Control Group. The research team used mixed-design ANOVA to analyse the main effects of testing times (i.e., Time 1 and Time 2), the main effects of the two groups of children in the following domains, and the interaction effects (i.e., time by group). As shown in Table 17, the main effect of time was only found in the domain of disruptive behaviour and the effect was moderate. In other words, there were significant differences between Time 1 and Time 2 in the means of teacher observed

disruptive behaviour among the children of the experimental group and the control group. Regarding children's classroom adaptation, this was a positive result as it revealed that the experimental group and the control group showed less disruptive behaviours over time.

2.13   For the control group, the main effects of group were found in all domains, with large effect size in concentration behaviour. In other words, children of the control group outperformed the experimental group in all domains. In addition, the interaction effects of time and group were found in the domain of concentration behaviour. This indicated that the experimental and assessment group and the control group had varying levels of change in this domain over time. Children of the experimental and assessment group made significant improvements in concentration in Time 2. Although they were still outperformed by the control group, differences between the two groups were diminishing. This implied that Tier 1 Support Services could effectively help enhance concentration of the children with SN. See Table 17 for the statistics.

Evaluation of Parent Outcomes

2.14   This study evaluated the data from the experimental and assessment group regarding parents' self-efficacy, parental stress, parenting anger, general health and parenting self-efficacy for early intervention in Time 1 and Time 2. As indicated by the results, no significant difference in self-efficacy, parental stress, parenting anger and general health was found in the assessment group, the experimental group and the control group between Time 1 and Time 2 (see Table 18). For the evaluation of parenting data between the experimental and assessment group and the control Group, in Time 1, parents of the control group had more parental stress than the experimental and assessment group, and the effect size was small. In Time 2, the general health of parents of the experimental and assessment group was better than the control group. The higher the score, the more distressed is the person and the worse is the general health condition. The results were positive which confirmed that the support for parents provided by the Pilot Project could alleviate parenting stress and foster general health. For details, please refer to Table 19.

2.15   The research team used mixed-design ANOVA to analyse the interaction effects of testing times (i.e., Time 1 and Time 2) and groups (i.e., experimental and assessment group versus control group) (for main effects of time in all groups, please refer to the t-test statistics mentioned above). Interaction effects of time and group on parenting were found in the following paired age groups. For children aged 5 years to 5 years 11 months in Time 2, significant interaction effect was found in their parents' general health, with small effect size. The results indicated that parents of the 5-year-olds of the experimental and assessment group had improvement in general health in Time 2. In contrast, parents of the control group were getting worse in their general health in Time 2. The higher the score, the more distressed is the person and the worse is the general health condition. For means of the experimental and assessment group and the control group at the two time points, please refer to Table 20.

2.16   For children aged 5 years to 5 years 11 months in Time 2, there was significant interaction effect in their parents' parental stress and the effect size was moderate. The results indicated that parental stress of parents of the 5-year-olds of the experimental and assessment group significantly increased in Time 2, whereas parents of the control group

had no notable change in parental stress in Time 2. This revealed that parents of K3 children of the experimental and assessment group needed support services to ease their stress. For means of the two groups at the two time points, please refer to Table 21.

2.17   Regarding qualitative findings, there were 136 parents giving detailed feedback in the questionnaire. Parents pointed out that the Pilot Project provided services in places with which the children were familiar (i.e., schools), and professionals would enter children's classrooms to observe and help the children and provide related training. Parents reckoned that such arrangements were conducive to children's learning and could help children adapt to classroom routines. The children would gradually learn to follow teachers' instructions in joining classroom activities.   The parents also pointed out that after participating in the Pilot Project, the children improved in learning, social, behavioural and emotional domains such as thinking, concentration, communication, self-confidence and gross and fine motor functions.

2.18   Besides, many parents said that the Pilot Project helped them understand their children's abilities and reasons behind their behavioural outcomes so that they could spot and discern their children's problems and needs as early as possible, and respond and help as appropriate. Through the support provided by the project teams under the Pilot Project, parents learned about the needs of children with developmental problems, and acquired some skills and techniques of home teaching and counselling their children. They became more confident in giving home training to their children. The knowledge and skills also helped facilitate parent-child interaction, establish harmonious relationship, and alleviate parenting stress. For related details, please refer to excerpt 2.01. Parents generally agreed that the Pilot Project had positive impacts on children's learning, social, behavioural and emotional domains, etc. Through counselling, consultation, small group and activities under the Pilot Project, parents developed positive attitudes and effective parenting skills to cater for children's special needs. For the related details, please refer to excerpt 2.02.

Evaluation of Teacher Outcomes

2.19   In April 2022, the research team conducted a focus group interview with principals and teachers of the experimental group under the Pilot Project. There were 5 interviewees including 3 principals and 2 teachers from four schools. For their background information, please refer to Table 22. The principals and teachers of the experimental group who joined the interview found the overall effectiveness of Tier 1 Support Services satisfactory, with 3 principals rated 8 and 2 teachers rated 8 to 9 on the level of satisfaction.

2.20   Regarding child outcomes, an interviewed principal observed that children improved in learning outcomes and proactiveness after the use of Tier 1 Support Services. After classroom observation and assessment, educational psychologists (EPs) and SCCWs would make individualized recommendations to teachers on adjusting the classroom environment, teaching materials and class activities according to the child's individual learning needs, which helped children acquire knowledge and skills in class gradually. For the related details, please refer to excerpt 2.03.

2.21   With regard to its outcomes in teaching efficacy, the principals and teachers in the interview said that under Tier 1 Support Services, school teachers could implement

effective strategies in the daily classroom such as the setup of the classroom environment, adjustment of homework and exercises, class activities and process arrangement. Having observed and assessed the child in school, psychologists and SCCWs would organise a consultation meeting for principals and teachers and brief them on the child's conditions, such as the child's type of SN, the level of severity, the need for referral for further assessment and the need for classroom adjustment, if any.

2.22   The project teams provided specific training for teachers. Based on the child's needs, psychologists would accordingly provide training for teachers on pedagogical skills of boosting the child's learning interest and improving the child's outcomes. SCCWs would also demonstrate classroom management skills and strategies during the lesson. In terms of classroom support, SCCWs would sometimes collaborate with the teacher and demonstrate how to lead classroom activities so that the teacher could observe and learn how to use visual or verbal cues to aid the child with needs. For the related details, please refer to excerpt 2.04.

2.23   Due to the large number of children in need of support, the course and teaching adjustments recommended by the project teams were very much individualized and sometimes might have not taken into consideration that teachers also had to take care of other children in class at the same time. Some strategies, therefore, might not be fully applicable to large class teaching. To sum up the views of the principals and teachers, the Pilot Project could enhance the children's learning outcomes and proactiveness, and extend the skills of increasing their learning interest and outcomes to the home environment. The Pilot Project could also support the teachers in the daily classroom effectively and provide them specific training. Regarding the Pilot Project's room for improvement, manpower was not sufficient. Some adjustment recommendations might not be applicable to large class teaching. For the related details, please refer to excerpt 2.05.

Evaluation of Service Operator Outcomes

2.24   Regarding quantitative and qualitative evaluation of the service operators, the research team covered eight domains: leadership (6 items), assessment (3 items), environment (4 items), family (4 items), instruction (4 items), interaction (4 items), teaming and collaboration (5 items) and transition (2 items). Each item was rated on a seven-point scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = strongly agree). The Cronbach's alpha was 0.934, with satisfactory reliability. For the statistics, please refer to Table 23. With regard to the quantitative results, higher ratings of 6 or above were found in assessment, interaction, family, transition, leadership and instruction but lower ratings were found in teaming and collaboration as well as environment. This revealed that the challenges of the Pilot Project were to facilitate collaboration of schools, families and project teams and to provide Tier 1 Support Services in an inclusive environment.

2.25   In April 2022, the research team conducted focus group interviews with 8 EPs and 16 SCCWs of the six service operators respectively. For their background information, see Table 24. EPs and SCCWs who joined the interview found the overall effectiveness of Tier 1 Support Services satisfactory.

2.26 Regarding child outcomes, SCCWs, as major project officers who arranged and provided classroom support for children, had views similar to school principals and teachers. They observed that children improved in learning abilities and adaptability after receiving Tier 1 Support Services. Their outcomes in class improved and they could blend into the large class teaching environment. The main reason was the inclusion of early identification in Tier 1 Support Services which enabled children who needed but had not yet received any formal support to receive early support. These support services could intervene early by recommending appropriate curriculum adaptations and dealing with children's behavioural and emotional problems so as to enhance their learning outcomes. For the detailed details, please refer to excerpt 2.06.

2.27 The interviewed frontline SCCWs said that parents improved in their parenting skills, discernment of and receptiveness to the child's SN after receiving Tier 1 Support Services. A major reason was that Tier 1 Support Services put a strong emphasis on catering for learner diversity. At the start of early identification, formal assessment by CAC was yet to be included which minimized the possible labelling effect. Parents were therefore more receptive to the support team's description of the child's learning needs and were more willing to accept the arrangements of learning support services for the child. Besides, SCCWs would keep liaising and communicating with parents, guide them on how to integrate parenting skills and techniques into their daily living and home schedule and how to conduct home training for the child. EPs would organize talks and workshops on home training and parenting skills. By so doing, parents could learn parenting skills and methods as well as home training that could facilitate child development, and integrate these methods and skills in daily living and home schedule. For the related details, please refer to excerpt 2.07.

2.28 In terms of supporting teachers, EPs and SCCWs in the interview said that Tier 1 Support Services improved teachers' understanding of and attitude to children with diverse needs. Teachers' competence in discerning student needs was enhanced and they became more sensitive to the learning needs of children. Teachers' receptiveness to and understanding of children with SN education was also enhanced. EPs and SCCWs observed that teachers' skills and strategies of as well as confidence in catering for learner diversity were strengthened. On the whole, the teachers became more ready to accept and apply SN teaching skills so that their teaching could more easily meet children' diverse needs.

2.29 Measures that facilitated effectiveness included frequent school visits, consultation service, and in-class support. Under Tier 1 Support Services, project teams made more frequent school visits. In addition to EPs' regular visits, SCCWs visited the school even more frequently, which increased the opportunities of communication between teachers and the project teams, enabled teachers to express their views and thus enhanced communication. With increased interactions, teachers' understanding of SN education was enhanced too. Consultation services allowed teachers to consult the project teams on the child's problems and outcomes and the related plans. In the process, the project teams would provide concrete coping strategies. For example, for the child with lower copying and writing abilities, the project teams would advise the initial use of fluorescent markers and the gradual transition to the use of pencils. With SCCWs' in-class support, teachers' problem of lack of time to deal with the needs of children with SN in class could be handled. Further, SCCWs could directly demonstrate in class how to implement practices

recommended by EPs and apply the related teaching skills or strategies. For the related contents, please refer to excerpt 2.08.

2.30 Support by professional therapists was not included under the current Tier 1 Support Services so that children with some specific types of SN might not be able to get the needed support, in particular, the Target Group 3 in the Pilot Project, the children diagnosed by CAC as having borderline developmental problems or single disability but not yet eligible for awaiting Tier 2 support services. There is a need to include consultation services provided by professional therapists in the Project. In providing Tier 1 Support Services was that the school's level of receptiveness to SN education and support would affect the level of intervention that the project teams could provide. By strengthening the school's understanding of SN education and support, the school might be more willing to accept the support teams' recommendations and interventions. For the related contents, please refer to excerpt 2.09.

Research Limitations

2.31 The school year 2020/21 was so severely affected by upper respiratory tract infections and COVID-19 that EDB announced on 12 November 2020 the suspension of face-to-face classes in schools. On 5 February 2021, EDB announced that all Kindergartens / Kindergarten-cum-Child Care Centres can arrange children of any individual level to return to schools in the morning to attend no more than half-day face-to-face classes and should be capped at one third of the total number of children of each session after the Chinese New Year. Subsequent to the development of the pandemic, EDB announced on 2 August 2021 that all schools continued to have face-to-face classes on a half-day basis in the remaining school year of 2021/22. On 11 January 2022, EDB announced a suspension of class for all Kindergartens / Kindergarten-cum-Child Care Centres , then on 28 February 2022, EDB announced that all schools had to start the special vacation from 7 March 2022, connecting the Easter Holiday, to the last day of the Easter holiday originally scheduled by individual schools.. After that, EDB announced on 11 April 2022 that all school could resume half-day face-to-face classes in phases, most of the schools resumed half-day face-to-face classes only in mid-May 2022. As a result, the progress of research was severely affected. Data collection was affected by the epidemic and the arrangement of half-day face-to-face classes. The collection of child, parent and teacher data in Time 1 was postponed from November 2020 to January 2021 originally scheduled, to January 2022 finally. Time 2 data collection and analysis was postponed to the period of February to July 2022. In addition, with the approval of SWD, the expected completion time of the study was postponed from March 2022 to July 2022. The progress of research and the completion of final report was correspondingly postponed due to be the changed time of data collection affected by the pandemic.

2.32 The study also had the following constraints: (1) From August 2020 to March 2022, there were 1,875 children participating in the Pilot Project. In this study, there were 208 children together with their parents in the experimental group which were only about 11.09% of all participants and they came from 64 schools, i.e., 78% of the participating schools. (2) In Time 1, as 13 children were below the minimum age of 3 years 4 months required for the use of HKCAS-P, Vineland-3 was adopted alternatively. After these children reached the minimum assessment age of HKCAS-P in Time 2, HKCAS-P was used instead. (3) Some of the children have exceeded the applicable age of the assessment tools, due to school suspension in connection with societal and pandemic factors. (4) The inferences

of this study were applicable to the children of the Pilot Project, but might not be applicable to children of other pre-school rehabilitation services.

Conclusion

2.33   In terms of child outcomes, the Tier 1 Support Services could effectively help enhance children's competence in all developmental domains. The Pilot Project also helped alleviate parenting stress, fostering their general health, helped parents understand reasons behind behavioural outcomes of children, learn strategies of teaching their children. Parents became more confident in giving home training to their children. In terms of teachers' teaching efficacy, principal and teacher interviewees said that the project teams provided specific training for the teachers so that teachers could establish a constructive classroom environment.

Chapter 3

Analysis of Service Delivery Mode and Effectiveness of the Pilot Project

Introduction

3.1   The government has been collaborating through various government departments to provide a range of services for children with special needs or developmental delays. The Department of Health and Hospital Authority arrange assessments and diagnosis for children with developmental disabilities, as well as make referral for them to receive rehabilitation services. The Social Welfare Department offers pre-school rehabilitation services for children with special needs aged from birth to six years old who have not yet started primary education, and assists their families in caring for their special needs. Since the 2017/18 school year, EDB has implemented the Kindergarten Education Scheme (Scheme), and the teacher-student ratio for participating Kindergartens / Kindergarten-cum-Child Care Centres has been improved from 1:15 (including the principal) to 1:11 (excluding the principal).   This allows teachers to have more capacity for various professional activities, including collaboration with interdisciplinary service teams providing on-site pre-school rehabilitation services. The Education Bureau also provides training for kindergarten teachers to enhance their ability to cater to children with different special needs.

3.2   The "Pilot Project on Tier 1 Support Services" was launched in Aug 2020 upon Lotteries Fund allocation. The purpose was to provide short-term support for Tier 1 children, in terms of learning, social interaction, behaviour and emotions; to provide teachers and child care workers with training and suggestions on identification, teaching methods and curriculum adjustment to meet the diverse needs of children. Also, to provide training and support to parents to develop positive attitudes and effective parenting skills. The Pilot Project was originally scheduled for completion in March 2022, but during the pandemic, since it was not possible to screen and assess children in the classroom as originally planned, the project team needed time to design new service delivery models (including online assessment/training or electronic study). The research team also needs more time to analyse the tools used by the project team to screen and identify Tier 1 children, intervention models, and the feasibility of integration with On-site Pre-school Rehabilitation Services (OPRS). In this regard, the Social Welfare Department allocated again the Lotteries Fund in November 2021 to extend the "Pilot Project on Tier 1 Support Services" by 17 months for it to operate till August 2023.

3.3   The research team evaluated the service delivery model and performance of the "Pilot Project on Tier 1 Support Services" including service scope, essential output, and outcome indicators, to recommend effective and feasible service delivery models. The team explored the feasibility of integrating the "Pilot Project on Tier 1 Support Services" with the OPRS currently provided for Tier 2 children (i.e. children with mild disabilities as assessed by medical or other professional assessments) in order to support pre-school SN children with diverse needs.

3.4   Six project teams organized by six NGOs were required to provide individual or group assessment/consultation/counselling services for young children, teachers and parents/carers, training sessions for teachers/school officers on enhancing their skills of

catering for young learner diversity, including consultation on classroom management, curriculum adaptation, teaching strategies and teacher development programme, and training services and parenting education for parents/carers. Each project team could employ 1.25 clinical/educational psychologists (thereafter "psychologists"), 3 senior special child care workers and 3.5 special child care workers (hereinafter "SCCWs") with allocation from the Lotteries Fund. The six project teams were required to achieve a set of four essential output standards and two essential outcome standards in the Pilot Project according to the service agreement, see Table 25.

Table 25

Essential Output and Outcome Standards under the Pilot Project

Essential Output Indicators	**Minimum Level**	**Per project team**
1. 37 months of service places for children (OS1)	3 840	640
2. Number of sessions in the form of individual or group assessment/consultation/counselling provided by EPs for (1) school officers (principals and teachers), (2) young children, or (3) parents/carers of schools within 37 months (OS2)	14 040	2 340
3. Number of sessions in the form of individual or group assessment/consultation/counselling provided by Senior SCCWs/SCCWs for (1) teachers, (2) young children, or (3) parents/carers of schools within 37 months (OS3)	86 400	14 400
4. 37 months of training and educational programmes for parents/guardians/carers within 37 months (OS4)	48	8
Essential Outcome Indicators	**Minimum Level**	**Per project team**
1. Rate of parents/guardians/carers who are satisfied with the overall provision of services for children (OC1)	80%	80%
2. Rate of teachers/school staff who are satisfied with the training in enhancing their skills of catering for young learner diversity (including consultation on classroom management, curriculum adaptation, teaching strategies and teacher development programme) (OC2)	80%	80%

Evaluation of Output and Outcome Standards

3.5 For a total of 37 months in the Pilot Project, the average achievement rate was 102.4% (OS1, $M = 102.40$, $SD = 0.35$), that is, on average each project team served 655, indicating that project team achieved the service target.

Service Output Standards - 37 months of service places for children (OS1)

3.6   The 6 project teams were required to achieve a set of four essential output standards and two essential outcome standards. The evaluation showed that the six project teams had effectively provided individual or group assessment/consultation/counselling services to children, teachers and parents/carers in different service areas. Regarding service output standards and outcome standards, this research report uses data from August 2020 to August 2022 (37 months of the Pilot Project), showing that the pilot project has provided services to a total of 3,931 children in need in 87 schools, providing Tier 1 Support Services to children, supporting their parents/carers and teachers/childcare workers.

3.7   The four target groups of children, in percentage of total, served by the Pilot Project were: 66% were children suspected with SN (Target Group 1); 13% were children awaiting assessment by CAC (Target Group 2); 4% were children diagnosed as having single disability but not yet eligible for awaiting pre-school rehabilitation services (Target Group 3); and 17% were children awaiting subsidized pre-school rehabilitation services (Target Group 4). There was no significant difference in Time 1 among the four target groups of the Pilot Project in all domains on HKCAS-P. This indicated that children of the four target groups had different levels of special needs because the children of Target Group 3 and Target Group 4 had already been assessed by CAC and diagnosed with SN while Target Group 2 had been awaiting assessment by CAC.

3.8   From August 2020 to May 2022, 76 children were transferred from one target group to another, totalling 3.8% of the sample. 32 children originally suspected with SN (Target Group 1) were referred to awaiting CAC assessment (Target Group 2), totalling 1.6%. 6 children originally suspected with SN (Target Group 1) were diagnosed as having single disability but not yet eligible for awaiting pre-school rehabilitation services (Target Group 3), totalling 2.7%. 22 children originally suspected with SN (Target Group 1) were transferred to awaiting subsidized pre-school rehabilitation services (Target Group 4), totalling 1.1%. 2 children originally awaiting CAC assessment (Target Group 2) were diagnosed as having single disability but not yet eligible for awaiting pre-school rehabilitation services (Target Group 3), totalling 0.1%. 10 children originally awaiting CAC assessment (Target Group 2) were transferred to awaiting subsidized pre-school rehabilitation services (Target Group 4), totalling 0.5%.

3.9   The research team also collected information on children discharged from the Pilot Project. According to the data from August 2020 to February 2022, 1,020 children were discharged mainly for the following reasons: 373 (36.6%) were transferred to Tier 2 services; 331 (32.4%) had been promoted to primary school; 194 no longer had SN symptoms (19%); and 122 (12%) for other reasons (departure from school, emigration, withdrawal of their parents' own accord).

Output Standard 2 (OS2) – Number of sessions in the form of individual or group assessment/consultation/counselling provided by EPs for (1) school officers (principals and teachers), (2) young children, or (3) parents/carers within 37 months

3.10 The average achievement rate for psychologists to provide 2340 individual or group assessment/consultation/counselling sessions for (1) school staff (principals and teachers),

(2) young children, or (3) parents/carers within 37 months was 128.9% (OS2, M = 128.9, SD = 14.86). This was equivalent to providing 18,093 sessions for 3,931 children in 3.08 year, indicating that all service operators could achieve OS2. Out of these sessions, 10,748 (59.40%) were assessment/consultation/training and counselling for teachers, 5,653 sessions (31.24%) were assessment/consultation/training and counselling for children and 1,692 sessions (9.35%) were assessment/consultation/training and counselling for parents.

3.11   According to the focus group interview with school staff, Tier 1 Support Services provided by psychologists included classroom observation, consultation on classroom management, curriculum adaptation, teaching strategies and delivery of parent talks and teacher training which helped schools to enhance their skills of catering for young children's diversity. According to the focus group interview with psychologists, in addition to the classroom support mentioned above, they also designed identification procedures and used screening tools for preliminary and formal assessments. The use of standardised assessment tools to evaluate children individually and identify those with developmental problems could only be conducted for a small number of K3 children progressing to primary school.

Output Standard 3 (OS3) – Number of sessions in the form of individual or group assessment/consultation/counselling provided by Senior SCCWs/SCCWs for (1) teachers, (2) young children, or (3) parents/carers within 37 months

3.12   The average achievement rate for SCCWs from project teams to provide 14,400 individual or group assessment/consultation/counselling sessions for (1) teachers, (2) young children, or (3) parents/carers within 37 months was 150.1% (OS3, *M* = 150.1, *SD* = 24.74). Out of these sessions, 86,476 (66.67%) were assessment/ consultation/ training and counselling for children, 28,219 sessions (21.75%) were assessment/ consultation/ training and counselling for teachers and 15,027 sessions (11.58%) were assessment/ consultation/ training and counselling for parents.

3.13   According to the focus group interview with school staff, Tier 1 Support Services provided by SCCWs mainly included classroom observation, on-site demonstration of teaching strategies in the classroom, provision of classroom management strategies, consultation on curriculum adaptation, design of learning support for children in the classroom according to the principle of routine-based intervention, and assisting in the delivery of parent talks and teacher training which helped schools to enhance their skills of catering for young children's diversity. Teachers reckoned that in-class support was helpful for children with special needs and teachers alike. SCCWs played the role of a coach/worker who demonstrated various teaching strategies, guided teachers to the related use, and designed classroom processes to make the best of Tier 1 support. According to the focus group interview with SCCWs, schools deemed that the provision of learning support for children with special needs according to the principle of routine-based intervention was useful.

Output Standard 4 (OS4) – Training and educational programmes for parents/guardians/carers within 37 months

3.14   The output standard of training and educational programmes for parents/guardians/carers within 37 months was 8 (OS4). The largest difference among the service operators lay in

this output standard, with the highest average achievement rate (M = 258), the largest standard deviation (SD = 2.79), and the largest range of differences (M = 825; M = 125). Parents participated in 5 (minimum) to 33 (maximum) of the training/activities. All service operators could achieve OS4. This reflected the painstaking efforts of the service operators to provide training for parents/carers and the family-centred principle of the operators in allocating resources to early intervention to support parents/carers.

Outcome Standard 1 (OC1) – The satisfaction rate of parents/guardians/carers on overall services

3.15   The satisfaction rate of parents/guardians/carers on overall services was 125% (OC, M = 125, SD = 0.03), far exceeded the target of 80%. The low value of standard deviation indicated not much differences in parents' satisfaction towards different operators. This essential outcome indicator served as a platform for parents/guardians/carers to evaluate the outcomes of the service operators in providing Tier 1 support under the Pilot Project. This result was consistent with paragraph 3.21, i.e., the result of the questionnaire on parents' level of satisfaction towards the Pilot Project.

Outcome Standard 2 (OC2) – The rate of teachers/school officers who were satisfied with the training in enhancing their skills of catering for young learner diversity

3.16   The rate of teachers/school officers who were satisfied with the training in enhancing their skills of catering for young learner diversity (OC2) was 100% (OC, $M = 100$, $SD = 0$), higher than the target of 80%. This essential outcome indicator served as a platform for teachers/school officers to evaluate the outcomes of the service operators in providing Tier 1 Support Services under the Pilot Project. This result was consistent with paragraph 3.45, i.e., the result of the questionnaire on teachers and school officers.

3.17   Overall, regarding the mode of service under the Pilot Project, the essential output and outcome standards were achieved. Some of the output standards could be adjusted. It is recommended that for the assignment of service places for children, an integrated school-based model can be applied. It is also recommended that the number of service sessions for children, teachers and parents provided by psychologists and SCCWs be increased, so that professionals could formulate identification procedures and use screening tools, and customise learning support for children according to the principle of routine-based intervention, with a view to helping schools and families to enhance their efficacy of catering for children with special needs.

Quantitative Findings from Parents/Carers

3.18   The scale designed by the research team was used to collect parents/carers' opinions on the Pilot Project's mode of service as a whole. Items included parents' level of satisfaction towards services and support provided by service operators and schools under the Pilot Project. Each item was rated on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree) and the option of "not applicable" was also provided. Parents could respond according to the services under the Pilot Project as appropriate.

3.19   The descriptive analysis of parents' views and evaluations of the mode and efficacy of services and support provided by the psychologists/SCCWs of the service operators can

be found in Table 26. Parents generally thought that assessment, individual training, classroom observation and classroom adjustment conducted by psychologists/SCCWs were beneficial to their children's development. In general, parents also indicated high level of satisfaction towards the quality of the various professionals ($M = 5.95, SD = 1.01$) and services provided by the service operators ($M = 5.80, SD = 1.02$).

3.20   The descriptive analysis of parents' feedback on the support provided by schools can be found in Table 27. Parents generally reckoned that school policies, environment and teachers could provide adequate support for their children. They were particularly satisfied with teachers' operation in the Pilot Project.

3.21   In general, parents had a reasonable understanding of the contents of the Pilot Project ($M = 5.06, SD = 1.37$) and found the Pilot Project very satisfactory ($M = 5.66, SD = 1.03$). According to the results of the bivariate analysis, there were positive correlations between their overall satisfaction towards the Pilot Project and their feedback on the children's development in different domains. In other words, the higher the parents' overall level of satisfaction towards the Project, the higher level of progress they perceived in their children. Among the developmental domains, the highest correlation was found between parents' overall satisfaction and their perceived development of cognition in their children ($r(123) = .51, p < .001$) (see Table 28).

Qualitative Findings from Parents/Carers

3.22   In the parent questionnaire, there were three open-ended questions to collect parents' views on the Pilot Project, including advantages of the Project, room for improvement and other opinions. 136 parents gave detailed feedback in the questionnaire and shared their views on the mode and efficacy of the Pilot Project.

3.23   Parents opined that the Tier 1 Support Services were very much needed to complement the existing pre-school rehabilitation services. For parents whose children had been awaiting assessment by CAC or pre-school rehabilitation services, they pointed out that the Pilot Project could provide early intervention services for their children. With the provision of professional support and related training during the critical period of child development, the possibilities of missing the optimal time for intervention due to the long waiting time for assessment or rehabilitation services, and the consequent deterioration of the children's condition or increased difficulties in treatments in future, could be prevented. Parents also commented that the Pilot Project were also suitable for children diagnosed as having borderline developmental problems or single disability who could then receive corresponding support in the classroom which would facilitate their adaptation to the teaching and learning progress in the classroom. In addition, some parents pointed out that the Pilot Project could help school teachers care for and respond to children's diverse needs in the classroom. (For the related contents, please refer to excerpt 3.01.)

3.24   In terms of the mode of service, parents put a very high value on classroom observation conducted by professionals and the arrangement of identifying children with developmental issues. Parents thought that they might not be able to discern their children's individual needs, and the Pilot Project could help identify children's problems and arrange corresponding early intervention services for the children to facilitate their adaptation to school life. Besides, parents found it agreeable that the training could be

implemented in school and the related support and adjustments could be adapted in the children's classroom. Parents would then be more receptive to their children's use of the related rehabilitation services. It would also be easier for the children to adapt to the intervention services provided. (For the related contents, please refer to excerpt 3.02.)

3.25 Although parents were generally positive to the support and help under the Pilot Project for children, some parents had other views and opinions on support services, including (1) frequency of service, (2) services by professional therapists, and (3) communication with parents. In respect of service frequency and services provided by professional project teams, parents opined that the existing services mainly focused on classroom observations conducted by SCCWs and classroom adjustments, and expected that more intensive training could be provided for children, and in particular, those awaiting pre-school rehabilitation services. Parents also thought that the current support services could be improved with the participation of professional therapists who could then provide more specific consultation and training for the needed children and their parents. (For the related contents, please refer to excerpt 3.03.)

3.26 In terms of communication with parents, some parents pointed out that the project team would inform them of the child's adaptation and developmental progress in the classroom on regular basis and would provide them with some home training information. However, some parents mentioned that the project team seldom communicated with them, so they did not have a clear idea of what kind of support or training the child was provided. They expected more timely and frequent mutual communication and suggested the use of phones, brief notes, short videos, etc., to update them on the child's developmental progress and provide guidance on the related home training. This was particularly important during class suspension owing to the COVID-19 pandemic situation. (For the related contents, please refer to excerpt 3.04)

3.27 To conclude, the quantitative and qualitative results indicated that parents generally found the service delivery mode and efficacy of the Pilot Project satisfactory, and agreed that the services could achieve the goal of early intervention. Parents' feedback also revealed their positive attitude to the caring of children's developmental needs. They expected to obtain more information from the project team about their children's learning and developmental progress and how to support their children, in order to adapt in the home environment. This evidenced the positive impact of the Pilot Project on children and their parents.

School Opinions on the Pilot Project – Quantitative Findings

3.28 To evaluate teachers and administrative officers' perceived effectiveness of the Pilot Project and their level of satisfaction towards the Project, the research team compiled a questionnaire on the service delivery mode and effectiveness of the Pilot Project, with items on their views on children's progress in different developmental domains, effective mode of service, support provided by service operators and schools, and the overall experience of the Pilot Project. Each item was rated on a seven-point Likert scale from 1 (lowest rating) to 7 (highest rating).

3.29 "Professional Support Scale" (Soukakou et al., 2014), comprising four parts including school system, teachers, parents and children, and school officers, was adopted to evaluate the professional support provided under the Pilot Project. For the evaluation of

professional support in terms of the school system, there were four items to solicit participants' views on the various support provided for children with SN, case referral system as well as curriculum development (original study: α = .76; current report: α = .86). Regarding professional support provided for teachers, there were five items to evaluate the support that teachers received on teaching skills, managing children's emotional/behavioural problems, implementation of individual training plan, as well as the provision of talks/case seminars/workshops (original study: α = .82; current report: α = .85). There were six items to evaluate the professional support provided for parents and young children under the Pilot Project such as briefing on the progress of training and provision of school-based recommendations (original study: α = .89; current report: α = .94). Finally, the overall professional support for school officers under the Pilot Project was also evaluated with two items (original study: α = .54; current report: α = .86). Each item was rated on a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). The higher the score, the more positive the respondent was to the professional support. The scores range from 18 to 90 according to the original scoring scheme. In the present study, means of each of the four parts were adopted for analysis. The Cronbach's alpha of this scale was .98.

3.30   The research team also collected the views of the teachers and administrative officers of the schools participating in the Pilot Project on effectiveness of the Pilot Project and their level of satisfaction. The descriptive analysis of each of the items can be found in Table 29.

3.31   According to the results, school teachers and administration officers perceived that the children made the greatest progress (i.e., highest scores) in the domains of social and emotional management (M_1 = 5.66; M_2 = 5.45) and language (M_1 = 5.58; M_2 = 5.52) after participating in the Pilot Project, and the smallest in gross motor functions (M_1 = 5.27; M_2 = 5.22). Services in the form of individual consultation/counselling (M_1 = 6.08) and group training (M_2 = 6.03) conducted by SCCWs and EPs were considered to be most effective in fostering child development. Regarding the support for children given by professionals under the Pilot Project, school teachers and administrative officers indicated that SCCWs gave the most support to the children (M_1 = 5.90; M_2 = 6.04). In general, they were highly satisfied with the services provided by the service operators (M_1, M_2 = 6.08).

3.32   The questionnaire also collected school teachers and administrative officers' views on their overall experience of participating in the Pilot Project. As indicated by the results, they generally found the Pilot Project satisfactory (M_1 = 5.99; M_2 = 5.98). They had a clear understanding of the differences between the Pilot Project and other pre-school rehabilitation services. They agreed that they became more confident of coping with developmental needs of the children after participating in the Pilot Project (see Table 30).

School Opinions on the Pilot Project – Qualitative Findings

3.33   Results include: The school questionnaire in Time 1 included open-ended questions on Tier 1 Support Services provided for school teachers, children with special needs and their parents under the Pilot Project, difficulties and challenges of implementing the Pilot Project, and other opinions on the Pilot Project. The school questionnaire in Time 2

included open-ended questions on the effectiveness of the Pilot Project in supporting children and teachers and its room for improvement. There are also results of the Focus Group Interview with Principals and Teachers of the Experimental and the Control Groups.

3.34   With regard to the mode of service and efficacy of Tier 1 Support Services under the Pilot Project, qualitative data were collected from principals and teachers of the experimental group in the focus group interview. The questions were mainly on the mode and procedures of the existing Tier 1 Support Services, service items provided by support teams for children, parents and teachers, communication and operation between service operators and schools, as well as the division of work between service operators and schools in supporting children.

3.35   According to the principal and teacher interviewees, Tier 1 Support Services mainly focused on providing classroom support. Support teams would consider it their primary goal to identify children with special needs and improve their learning outcomes in class. They said that the mode, procedures and support services of the existing Tier 1 services included parent meetings, screening for children with special needs, consultation, support and adjustment, teacher training and value-added services, etc.

3.36   Before or at the beginning of school term, support teams would organise parent meetings to enhance their understanding of SN and receptiveness to support services and the related training. In the parent meeting, support teams would introduce milestones in child development and share with parents some parenting skills. They would also introduce to parents the various support services for SN, in particular, the coverage of Tier 1 Support Services.

3.37   With regard to screening procedures, school teachers would conduct a preliminary screening for children with symptoms of SN and nominate the suspected cases for the support team's further observation and assessment. Based on their observation of the child's behavioural outcomes in the past, schools would compile a name list of children with special needs for the support team's further observation and assessment at the beginning of the school term. The support team would then liaise with teachers for the arrangement of classroom observation and for understanding developmental conditions and needs of the children on the list. For classes conducted online during the pandemic, support teams would join the online classes to conduct observation. During formal observations and assessments, support teams would prepare written record for the child's behaviour in class. After classroom observation, they would contact the parents to gather information about the child's behaviour and condition at home, and then conduct a simplified version of assessment of the child.

3.38   After conducting observation and assessment, support teams would have a consultation meeting with school teachers to discuss the conditions of the child nominees, and confirm the list of children to be included in Tier 1 Support Services. In the meeting, EPs would explain in detail the types of SN that the child recipients of Tier 1 Support Services had and the corresponding classroom adjustments required. In the occasion of the meeting, teachers would also describe the student's current behaviour and outcomes in class and seek EPs' professional advice. For the child from more complicated family background, the school-based SW would also share their views and seek EP's advice. To follow up, EPs would review the developmental progress of the child and the effectiveness of the

classroom adjustment measures with school teachers in the form of consultation meeting or individual consultation on a regular and continual basis.

3.39   Classroom support, as the primary Tier 1 Support Services, was provided and followed up by SCCWs. The provision of classroom support mainly included assisting teachers in setting up a SN-friendly classroom environment, preparing adapted teaching materials, adjusting class activities, providing classroom support and conducting teaching demonstration in class. In addition, SCCWs would also keep regular contact with the parents to follow up on the child's condition at home.

3.40   Teacher training: In line with the classroom support of Tier 1 Support Services, EPs would provide training for school teachers on class management skills and teaching strategies so that teachers could learn how to put the skills and practicable methods of catering for learner diversity into classroom practice.

3.41   Value-added services: For certain children, support teams would provide value-added services in addition to classroom support, i.e., support services beyond the original scope of classroom support. There were mainly three types of these special children: Type 1 – children from more complicated family background; Type 2 – children with severe level of SN; Type 3 – children in need of consultation services of professional therapists. For Type 1 children with no school-based SW to follow up, support teams would provide individual consultation services for their parents and follow up on the child's conditions at home on a regular basis. In addition to conducting in-depth assessment and making referral for Type 2 children, EPs would also liaise with parents and teach them how to conduct home training for the benefits of the child. SCCWs would also make arrangement for the child to participate in group training, should there be vacancies. In accordance with Type 3 children's needs, SCCWs would seek advice from professional therapists of other voluntary service programmes to provide specific and targeted training for the child.

3.42   According to the principals and teachers in the interview, the primary role of the support team in the existing mode of support services was to assist and teach the teachers. In the form of consultation and demonstration, they imparted professional knowledge to the teachers, assisted the teachers to identify children with special needs, and helped them explain the service details of the Project to parents. It was the school's role to implement and to learn. They learned from the support team the knowledge and skills of supporting children with special needs, and put the support team's recommendations into classroom practice. With the emphasis on classroom support, this service delivery mode could effectively help ease teachers' burden of supporting children with special needs in the classroom and enhance their teaching quality.

3.43   In respect of communication and cooperation between schools and project teams, school principals or administrative officers were responsible for liaising with the support team and making arrangement for the support team's visits and support services. For the support team, SCCWs served as the major contact person as they had to enter the school to provide frontline support services on a regular and weekly basis. In comparison, EPs and Senior SCCWs only visited the school to provide consultation and services on an irregular basis. On the whole, principals and teachers indicated that with an increased number of school visits by Tier 1 support teams, the schools and support teams had more frequent communications and their mutual communication and cooperation could be strengthened. (For the related contents, see excerpt 3.05.)

3.44 Effectiveness in supporting children: SCCWs provided in-class support or even individual and group training for children with special needs to enhance the children's overall learning abilities. They observed that the children improved in their concentration behaviour in class, particularly in doing writing exercises. The children also had significant improvements in communication, fine motor development and emotion management, etc.

3.45 Effectiveness in supporting teachers: After conducting classroom observation, EPs and SCCWs would arrange consultation for teachers to give them a better understanding of the child's conditions and the teaching strategies that could be used in the classroom to help the child with needs, so that the teachers' competence in identifying young children's individual problems and their concern for children with SN could be enhanced. In addition, to support the teachers, SCCWs would have collaborative lesson planning with the teachers, such as assisting in the adjustment of the classroom environment, provision of visual cue cards, rearrangement of timetable, arrangement of classroom routines and activities. Not only could these reduce teachers' stress, but they could also enhance their teaching skills.

3.46 The three key successful components of the overall service were: (1) Tier 1 Support Services could provide professional assistance for teachers and children with special needs. EPs and SCCWs could make concrete, specific, pragmatic and targeted plans and recommendations. (2) Under Tier 1 Support Services, the experienced support teams conducted frequent classroom observations to keep track of the child's condition and have close communication with teachers and parents. By ensuring mutual cooperation and communication among the three parties, the child could be cared and supported comprehensively. (3) SCCWs provided in-class support for teachers and assisted them in the classroom, which improved the teacher-student ratio and enabled teachers to take care of both children with special needs and other children at the same time.

3.47 Regarding the room for improvement of the Pilot Project, due to the large number of children with special needs, the support time that the support team could allocate to each of the children and their teachers was not sufficient. It is recommended that the number of school visits, the time for support and the number of support team members be increased.

3.48 Regarding teaching adjustments, it is recommended that the time for collaborative lesson planning with SCCWs be increased and the required teaching aids and materials be provided for teachers so as to facilitate routine-based interventions.

3.49 In terms of parental support, it is recommended that family education be strengthened and home training demonstration be provided for parents to help them train their children at home, hence strengthening the effectiveness of training.

3.50 In April 2022, the research team had a focus group interview with principals and schools of the control group, i.e., schools not participating in the Pilot Project. There were 6 interviewees from 5 schools of the control group, including 4 principals and 2 teachers. See Table 22 for details. The interview focused on the following three areas: (1) number of children with symptoms of SN in school and their conditions (Table 31); (2) school approach to handle and support children with symptoms of SN, including mechanism,

strategies and actions for screening and identifying children with diverse levels of SN, school policies on and perceptions of catering for children with symptoms of SN, as well as difficulties and challenges of implementing inclusive education with the whole-school support approach; and (3) views on and perceptions of Tier 1 Support Services. There were 8 open-ended questions to collect views and opinions of principals and teachers of the control group.

3.51 Regarding children with special needs for support, an average of 7.2 children per control school had needs in learning, social, behavioural and emotional domains. There was an average of 4 children per control school awaiting assessment by CAC. As regards the children diagnosed by CAC as having borderline developmental problems or single disability but not yet eligible for awaiting subvented pre-school rehabilitation services, two of the three nurseries interviewed (School A and School B) reported having these cases in school currently, whereas the two schools interviewed reported no such cases in school currently.

3.52 For school principals and teachers' opinions on children with potential needs for support in school, school views on dealing with and supporting children with symptoms of SN and the related screening and identification mechanism, as well as school policies on and perceptions of catering for children with symptoms of SN, please refer to excerpt 3.06.

3.53 Principals and teachers in the interview mentioned that schools' current constraints in manpower, venues and funding resources made it difficult for schools to implement inclusive education. In the provision of support services, it was necessary to evaluate the practicability in consideration of the lack of manpower, venues and funding. In recent years, there has been an increase in the number of children diagnosed with SN or having symptoms of SN, leading to an increasing number of classes with children with SN, and the subsequent lack of human resources. It was difficult for a teacher to cater for the needs of children with SN and typical children simultaneously during lessons. Therefore, schools had to arrange two teachers for each class, with one responsible for supporting children with SN, and the other one for class teaching.

3.54 According to the principals and teachers in the interview, provision of learning support for children with SN could only be possible with parents' consent and cooperation. Parents' views on and perceptions of SN support might hinder their children's receipt of the SN support. Therefore, effective parent education and communication with parents was also important for the provision of SN support. The related challenges faced by the schools included parents' insufficient understanding of SN and parents' unreadiness to collaborate on supporting the children.

3.55 Although parents' receptiveness to SN was enhanced, their understanding of types and characteristics of SN was still insufficient. Even though the parents accepted the reality of their children's SN, they were still discontented with some SN related outcomes of their children. Subsequently, teachers had to explain to the parents and manage their expectations of their children. A principal interviewee mentioned that supporting children with SN was not merely a matter of providing appropriate adjustment and training during learning in the school, but it also required parents' corresponding support and adjustment made at home. By so doing, children could be effectively and comprehensively supported. (Please refer to excerpt 3.07 for the related contents.)

3.56 According to the principal and teacher interviewees, teachers' current understanding of SN was limited to the knowledge acquired from the college and they were still not familiar with the types and characteristics of SN. For teachers with less teaching experience, their experience and skills of coping with and supporting children with SN were not adequate. They would face challenges of identifying children with SN and ascertaining their needs and would also have difficulties of supporting the children and handling their learning, emotional and behavioural problems. They might also find it hard to communicate and discuss the related issues with the parents. In view of this, a principal suggested that case studies be included in teacher training so that teachers could apply their knowledge and theory on the ground. (For the related contents, please refer excerpt 3.08.)

3.57 According to all of the principal and teacher interviewees in the Control Group, despite their lack of understanding in Tier 1 Support Services, they were willing to participate in Tier 1 Support Services Project. They expected that Tier 1 Support Services Project could solve the problems the schools encountered in the provision of SN support, and could assist the schools in supporting children with SN. Below are the principals and teachers' recommended support for schools and teachers:

3.58 A principal said that the number of children with various types of SN varied from year to year and the school subsequently had to adjust its amount of support for children with SN every year. It was recommended that the SN support be school-based so that the school could have more flexibility and autonomy in the operation and allocation of resources in accordance with the number of children with SN and their specific needs in the year. (For the related contents, please refer to excerpt 3.09.)

3.59 The principal and teacher interviewees pointed out that manpower support was very important. It was difficult for teachers to accommodate the needs of both children with SN and typical children in the classroom at the same time. Should there be additional manpower for in-class support, teachers could respond to the needs of children with SN and typical children timely in class. Their stress of caring for both types of children in class could be alleviated. (For the related contents, please refer to excerpt 3.10.)

3.60 Both principal and teacher interviewees said that teachers, particularly those with less learning experiences, needed suitable and effective training in the knowledge and skills of supporting children with SN. The current teacher training covered a large variety of SN and support which, however, could not facilitate teachers in providing suitable support for children with specific needs. Therefore, they reckoned that the contents of teacher training should be adjusted according to the needs of the school and teachers, so that teachers could provide targeted support for children with SN. In addition, it was recommended that case studies be included in teacher training so that those with less teaching experience and less experience in SN teaching could also be benefited. (For the related contents, see excerpt 3.11.)

3.61 The principal and teacher interviewees said that teachers were in need of instant consultation for supporting children with SN. Instant consultation could help teachers promptly and precisely solve the problems they encountered in dealing with children with SN in the classroom so that children with SN could also receive instant and effective support. Instant consultation would also be helpful for teachers to identify children with SN as early as possible. After observing children's specific behavioural outcomes, teachers could immediately reflect the condition to professionals for arranging further

observation and support measures. (For the related contents, see excerpt 3.12.)

Admission and Discharge Mechanisms for Children

3.62   According to the information of the NGO questionnaires collected from six service operators, the six steps for children to enter the Pilot Project were: (1) Whole-school briefing: Nomination of children by teachers, parents and school-based SWs would usually start before school term or after parent meeting of the whole school, based on teachers' continual observation, parents' requests or SW's referral. Adopting the whole-school screening approach, some schools would have their teachers filled in an observation form for all children for preliminary identification, and particular attention would be drawn to those with outcomes of the lowest 10-20% in all domains. For children awaiting assessment by CAC (Target Group 2) or diagnosed as having borderline developmental problems or single disability but not yet eligible for awaiting subvented pre-school rehabilitation services (Target Group 3), their parents only had to submit the required documents and the children would immediately be admitted to the service. (2) Preliminary discussion: SCCWs and the class teacher would discuss and arrange classroom observation. (3) Classroom observation: SCCWs would conduct classroom observation and might be joined by EPs as needed. They would observe the child's cognition, gross motor, fine motor, language, learning adjustment, social adjustment, behavioural and emotion management, self-care abilities, and would also pay attention to the child's daily routines at home and in school. (4) Preliminary identification: The class teacher or SCCWs would use non-standardised assessment on child development observation or learning adjustment to assess the child's conditions. EPs would also make use of standardised assessment tools such as "The Hong Kong Reading Ability Screening Test for Preschool Children" (RAST-K), "The Hong Kong Cantonese Oral Language Assessment Scale" (HKCOLAS), "The Hong Kong Preschool Fine Motor Development Assessment" (HK-PFMDA), "The Hong Kong Developmental Assessment Scale for Young Children", and "Developmental Scale for Preschoolers (Parent/Teacher)" (DSP). (5) Confirmation of needs: In the form of family-school-community collaboration, the professional team would discuss with teachers and parents about the child's difficulties, as reflected by the assessment result of the child's outcomes in various domains, classroom observation conducted by SCCWs and EPs, as well as the child's homework sample and learning information. This multi-faceted approach of data collection could effectively confirm the child's needs in holistic development, in school and in their own family. (6) Service arrangement: After the collaborative meeting, the case would be admitted to the service. An individualised support programme for the case, school and family would be formulated and would be regularly reviewed and followed up. The professional team would communicate and collaborate with teachers and parents on a continual basis.

3.63   As regards the mechanism for discharging children from the Pilot Project, having summarised the information from the six service operators, there were generally five steps: (1) Collection of nomination: Receive nomination from teachers and parents. (2) Classroom observation: SCCWs would conduct classroom observation, together with EPs as and when needed, to confirm if the child has effectively achieved the goal of the support programme. (3) Progress assessment: The class teacher, SCCWs and EPs would make use of the previously adopted standardised or non-standardised assessment tools to assess the child's current developmental outcomes and progress. (4) Meeting with parents: In the form of family-school-community collaboration, the professional team would discuss

with teachers and parents to ascertain if the child has made good adjustments and overcome difficulties, as reflected by teachers and parents' observations, assessment results of the child's outcomes in various domains, as well as classroom observation conducted by SCCWs and EPs. (5) Discharge arrangement: Gradually reduce the amount of service for the child to prepare for the end of service. Children awaiting subvented pre-school rehabilitation services (Target Group 4) and arranged for other Tier 2 pre-school rehabilitation services would also be discharged.

3.64   The service operators shared the following views on the admission and discharge mechanisms. The existing screening and identification system was rigorous based on information from various parties. If there was a standard system with observation forms and tools, comprehensive and reliable data could be collected and screening and assessment could be conducted systematically when the children were admitted to or discharged from the service.

3.65   Since Tier 1 Support Services were still a pilot project, the services information of the child have not been uploaded to EDB's Special Education Management Information System (SEMIS), and later to their primary school. If Tier 1 Support Services could be regularised in future and incorporated into OPRS, the services information of the child could be transferred to their primary school through SEMIS which would further facilitate arrangement for the child's smooth transition from KG to primary education.

3.66   According to Time 1 data, the screening and identification procedures could effectively admit the children with SN to the Pilot Project and the discharge procedures could also operate well, indicating the smooth operation of the admission and discharge mechanisms. It would be even more effective if a set of reliable and valid screening and assessment tools could be provided for shared use when the children are admitted to and discharged from the service.

3.67   After consulting SWD, CACs, EDB and related units, the research team together with the service operators formulated the Child Observation Checklist (COC) with tested reliability and validity to screen and identify the special needs of the children. In December 2022, the research team invited teachers to evaluate 1,085 children from 70 schools participating in Tier 1 Support Services. Based on the results, the research team compiled a set of standards of sensitivity and specificity in identifying children with SN and examine the validity and screening ability of the scale. The detailed technical validation report can be found in Annex C.

3.68   Based on the Rasch model and the confirmatory factor analysis, a 15-item and 5-factor model (COC) was adopted. There were very high correlations between COC and student behaviours. Children yet to receive rehabilitation services could be differentiated from children under Tier 1 Support Services and children under OPRS, and children's differences across grades could also be detected. Based on the analysis results of the receiver operating characteristics (ROC), a two-point system was established to ascertain the eligibility of the student for support services. A student whose COC score is one standard deviation lower than the mean was considered to be eligible for immediate support services. A student whose COC score is one standard deviation lower than mean and whose sensitivity rating was at least 0.70 was considered to be eligible for applying for support services. Under such circumstances, however, it would be necessary to assess the student's related environments and monitor the student's progress of development to

further ascertain whether the student is eligible for receiving the services. Finally, the research team constructed a norm table for the on-site service teams and school teaching teams' use, upon receipt of related training, to assess, refer to and compare the characteristics or specific conditions of children of various grades.

Conclusion

3.69　Under the severe impact of COVID-19 from 2020 to 2022, there were some differences between the actual number of service places for children per year and OS1 of the Pilot Project. The other three output standards were met, including services provided by psychologists (OS2), services provided by SCCWs (OS3), and services for parents/guardians/carers (OS4). The two service outcome standards were also attained, namely, service satisfaction as rated by parents/guardians/carers (OC1), and teachers/school staff's satisfaction towards enhancement of their catering for the diversity of young children (OC2).

3.70　The results of the parent questionnaire confirmed that the outcome standards mentioned above were achieved. Parents were highly satisfied with the quality of the various professionals (psychologists and SCCWs) and services provided by the operators (e.g., assessment, individual training, group training, classroom observation and class adjustment). In respect of service delivery mode, parents considered classroom observations conducted by professionals and arrangements of identifying children with developmental issues to be very important. The incorporation of the related support and adjustments into the children's daily routines in class was highly commended by parents as parents would then be more receptive to their children's use of the related services.

3.71　On the whole, quantitative and qualitative results showed that parents were generally satisfied with the service delivery mode and efficacy of the Pilot Project, and they concurred that those services could fulfil early intervention effectively. Principals and teachers of the experimental and control groups affirmed the positive impact of the Pilot Project on children, parents and teachers, as evidenced by the results. Schools were also willing to continue to participate in Tier 1 Support Services. Taken together, information from service operators showed that there were strict procedures to admit children to and discharge them from the Pilot Project, including collecting information from teachers, parents and school-based SWs, utilising various assessment tools, and engaging different stakeholders in family-school-community collaborations to identify children for services and ascertain their needs. All these indicated that the admission and discharge mechanisms were operating well. In order to identify the learning and adjustment needs of Tier 1 children more effectively, the research team together with the service operators formulated the COC with tested reliability and validity to screen the special needs of children. With reference to screening results and by evaluating the student's related environments and monitoring the children's progress of development, service operators could further ascertain whether the child is indeed eligible for receiving the services.

3.72　Overall speaking, as evidenced by the quantitative and qualitative results, principals and teachers of the experimental and control groups agreed that the Pilot Project had positive impacts on children, parents and teachers. The schools were willing to take part in Tier 1 Support Services in future.

Chapter 4

Analysis of Feasible Service delivery mode

Introduction

4.1 According to the results of the study, after participating in the Pilot Project, children improved in learning, adaptability and abilities in various developmental domains and could blend into the large class teaching environment. Parents' parenting skills as well as understanding and acceptance of special needs were also enhanced. The Pilot Project could also enhance teachers' efficacy in teaching children with SN.

4.2 As regards the results of output and outcome standards, there were some differences between the actual number of service places for children per year and OS1 of the Pilot Project. The other three output standards were achieved, including services provided by psychologists, services provided by SCCWs, and services for parents/guardians/carers. The two outcome standards were also attained, namely, service satisfaction as rated by parents/guardians/carers, and teachers/school staff's satisfaction towards enhancement of their catering for the diversity of young children.

4.3 Information from service operators showed that there were strict procedures to admit children to and discharge them from the Pilot Project, including collecting information from teachers, parents and school-based SWs, utilising various assessment tools, and engaging different stakeholders in family-school-community collaborations to identify children for services and ascertain their needs.

4.4 For the benefits of the children with SN, not only is it crucial to help them overcome the anticipated difficulties in all developmental domains, but it is particularly important to provide support for their significant carers, i.e., their parents and teachers, by constructing family, school and community environments that are conducive to the children's holistic development. Drawing on the positive effects of the Pilot Project, five aspects of practicable service delivery mode are summarised, including support for children in the large class teaching environment, professional training and therapy for children in specific developmental domains, inter-disciplinary and family-school-community support for parents, partnership training for teachers in the form of professional consultation, guidance and demonstration, and mechanism for admitting and discharging children.

Support for Children in Large Class Teaching Environment

4.5 Drawing on the in-depth analysis of the children, routine-based early interventions are practicable. These involve the setup of the classroom environment, homework and exercise adjustments, class activities and arrangement of processes, with the aims of consolidating catering for learner diversity and fulfilling the strengths of Tier 1 support. These services are delivered by psychologists in the form of individual or group consultation, workshop and talk, and by SCCWs in the form of classroom observation, on-site demonstration of teaching strategies in the classroom, provision of classroom management strategies and consultation on curriculum adaptation.

Professional Training and Therapy for Children in Specific Developmental Domains

4.6   In addition to routine-based support in the large class setting, some children, with different levels of special needs, also need specific professional training by SCCW such as individual or group training in cognitive, social-emotional and self-care abilities to facilitate their comprehensive development. As regards professional training and therapy in language, gross motor and fine motor, etc., they should ideally be provided by the corresponding ST, OT or PT according to the child's needs. To further extend the training effects, the therapists can also give advice to parents and teachers on training and assistive facilities in the home environment and the school environment respectively. Besides, inter-disciplinary professional teams can also make referrals for children to receive assessments as needed.

Inter-disciplinary and Family-school-community Support for Parents

4.7   As the primary carers of children, it is important to help parents understand the needs of children with SN, enhance their parenting efficacy, foster their positive parenting, and alleviate their parenting stress so as to help them embrace the abilities of their children, develop positive attitudes and effective parenting skills, and strengthen their parental efficacy. Tier 1 Support Services may include the following: counselling for parents – SW and SCCW, etc. to call the parents regularly to understand the child's condition and caring for the needs of the child and family; consultation for parents – psychologists, SWs, SCCWs, professional therapists to contact the parents by meetings, phone calls and social communication channels to observe the parent-child interactions, provide recommendations on parenting, and design and follow up on home training, etc. In addition, parent talks delivered by inter-disciplinary professional teams can help parents connect to community resources and use them as needed, such as support centres for parents of localities, integrated family service centres, children and youth centre, etc..

Professional Coaching for Teachers: Professional Consultation, Guidance and Demonstration

4.8   Tier 1 Support Services also provide partnership training for teachers to enhance teachers' discernment of and sensitivity in identifying children with SN so that they can use their professional skills in early childhood education to collaborate with the professional support teams on strengthening the caring of children with SN in schools. Services may include: professional consultation – teachers may consult the professional team on issues related to the child with SN; targeted recommendations – the professional team works with teachers by observing the child's classroom behaviours and developmental conditions, assisting teachers in collaborative lesson planning, giving teaching demonstrations and guidance, providing teaching materials for group learning, with a view to optimising the effects of the routine-based classroom environment design, classroom management, homework adjustment, teaching strategies and activity design.

Admission and Discharge Mechanisms for Children

4.9   The admission mechanism may start from a briefing for parents, nomination by teachers, parents or SWs, discussions between professional teams and schools, classroom

observation, preliminary identification by completing standardised assessment scale, confirming the difficulties and needs of the child in various developmental domains through discussion with teachers and parents in the mode of family-school-community collaboration, and finally to the arrangement of appropriate services.

4.10 In addition to admission and discharge from the services, a tier movement mechanism with case review and management will also be in place.

4.11 The review panel will consist of members from the Operator and the school. For children receiving Tier 2 services, if their progress is desirable, after consulting with parents and reviewing the case, the panel may recommend them to move to Tier 1 services. The discharge mechanism is made based on evidence collected from the professional team, ensuring that children are performing satisfactorily in various developmental domains. For those who have made remarkable progress, a home-school-community tripartite consultative approach will be adopted to enhance parent and teacher understanding of the discharge arrangements. In the long run, a school-based and integrated approach of support and services can be explored. Detailed analyses of Tier 1 Support Services and integration with OPRS can be found in Chapters 5 and 7.

Conclusion

4.12 Recommendations on practicable service delivery mode are summarized as follows. To be routine-based, consolidate support for children in the large class teaching environment and strengthen the catering for children's diversity. Provide inter-disciplinary professional training and therapy to cater for the child's needs in specific developmental domains, with a view to facilitating the child's holistic development. By engaging inter-disciplinary professions and family-school-community collaborations, provide parents and carers with a variety of support to help parents understand developmental challenges faced by the child, accept the child and boost up their parenting efficacy. With school teachers as professional collaborative partners, enhance their discernment of and sensitivity in identifying children with SN as well as application of their professional skills in early childhood education, so that they can collaborate on strengthening the caring of children with SN in school. With the professional spirit of evidence-based practice, formulate the admission and discharge mechanisms. On the basis of family-school-community collaborations, engage teachers and parents in discussing discharge arrangements, with a view to establishing a beneficial environment for child development.

Chapter 5

Analysis of Integrating the Pilot Project and the "On-site Pre-school Rehabilitation Services" (OPRS)

Introduction

5.1 The target group of the Pilot Project was mainly children in the schools participating in the Pilot Project, awaiting assessment by CAC, or assessed by CAC to have borderline developmental problems (i.e. Tier 1 Children), together with their parents/carers and teachers/child care workers. The Pilot Project aimed at providing early interventions for children and support services for parents and teachers, with a view to facilitating children's holistic development and consolidating the support system of family, school and community.

5.2 From August 2020 to March 2022, the Pilot Project had four target groups: children suspected with SN (Target Group 1), children awaiting assessment by CAC (Target Group 2), children diagnosed as having borderline developmental problems or single disability but not yet eligible for awaiting Tier 2 support services (Target Group 3), and children awaiting subvented pre-school rehabilitation services (Target Group 4). From April 2022 onwards, children awaiting subvented pre-school rehabilitation services (Target Group 4) were no longer the target group of the Pilot Project to avoid overlapping resources with SWD's "Training Subsidy Programme for Children on the Waiting List of Subvented Pre-school Rehabilitation Services" (TSP)[1].

5.3 The open-ended feedback on integrating Tier 1 Support Services and OPRS in the NGO questionnaire can be summarised in the following four aspects: target group arrangements, planning of Tier 1 and Tier 2 services, project teams' consolidation of manpower and operation, and resources utilisation.

Target Group Arrangements

5.4 The research team completed "The Consultancy Services for Research on Evaluating the Pilot Project on On-site Pre-school Rehabilitation Services (OPRS)" in 2018. According to the results, the then service outputs could accommodate 100 children who had been assessed by CAC. There were already no vacancies to serve those who had waitlisted for assessment by CAC and those who had waitlisted for pre-school rehabilitation services upon completion of assessment, although they were also put under OPRS. Children awaiting assessment and children awaiting services were respectively Target Group 2 and

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[1] Provide training subsidy for children on the waiting list for subvented pre-school rehabilitation services. For children waitlisting for Early Education and Training Centre (EETC), Integrated Programme for Disabled Children in Kindergarten-cum-Child Care Centre (IP) or On-site Pre-school Rehabilitation Services (OPRS), the monthly household income should not exceed 75% of the MMDHI based on the General Household Survey published by the Census and Statistics Department at the time of application. For children waitlisting for Special Child Care Centres (SCCC) [including Residential Special Child Care Centre (RSCCC)] service, these children can receive non-means-tested training subsidy with effect from 1 October 2017.

Target Group 4 under the current Pilot Project.

5.5 The service operators expressed the following opinions to the research team via the Hong Kong Joint Council for People with Disabilities and The Hong Kong Council of Social Service. Children awaiting assessment (Target Group 2) and children awaiting pre-school rehabilitation services (Target Group 4) were included in the OPRS target group back in 2015. In future, 10 service places (10%) from each OPRS project team could be flexibly used to accommodate Target Group 2 and Target Group 4 in the provision of services, while Tier 1 Support Services would handle and provide services for children suspected with SN (Target Group 1) and children diagnosed as having one special need (Target Group 3). These two groups of children accounted for 75% of participants under the current Pilot Project (approximately 160 out of 320 cases). The deployment would ensure more effective use of resources.

5.6 The service operators recommended that the admission to Tier 1 Support Services be streamlined. For example, upon regularisation of the Pilot Project, children who have been diagnosed by CAC as having single disability (Target Group 3), parents can apply to join the services with supporting documents issued by CAC.

Planning of Tier 1 and Tier 2 Services

5.7 The service operators recommended that Tier 1 Support Services be defined as short-term interventions for half a year to one year, and Tier 2 support services under OPRS be defined as long-term interventions.

5.8 The service operators also recommended that the total number of the following support services for parents and school officers, currently under Tier 2 or Tier 1, be calculated as a whole: number of training and educational programmes provided for parents/guardians/carers per year (essential output standard 4 (EOS4)), number of consultation sessions provided for teachers for each school per year (EOS5) and number of workshops/talks/programmes provided per year for teachers on skills to work with children with special needs (EOS6) currently under Tier 2 services, number of sessions in the form of individual or group assessment/consultation/counselling provided by psychologists for school officers (principals and teachers) and parents/carers within a year (OS2), number of sessions in the form of individual or group assessment/consultation/counselling provided by Senior SCCW/SCCW for teachers and parents/carers within a year (OS3), and number of training and educational programmes for parents/guardians/carers per year (OS4) under Tier 1 services.

Project Team's Consolidation of Manpower and Operation

5.9 According to the Pilot Project's specifications of essential service requirements, each project team should consist of essential staffing of a headcount of 7.75, including 1.25 CPs/EPs, 3 Senior SCCWs and 3.5 SCCWs. According to the actual figures provided by SWD, there was an average of 8.3 service staff per project team, including 1.25 CPs/EPs, 2.81 Senior SCCWs, 4.18 SCCWs. In addition, 1 Executive Assistant, 0.5 Project Officer and 0.1 Social Work Officer (SWO), employed with an administration funding, and 0.2

Service Manager, 0.5 ST and 0.5 OT, employed under value-added services supported by service operators. The actual staffing exceeded the essential staffing due to practical needs: firstly, the children under the Pilot Project also had developmental needs in the domains of language, gross motor and fine motor; also, administration support was required for the coordination of service time and work among 14 schools and support teams.

5.10   Having reviewed the success of the Pilot Project, we recommend that the estimated establishment should meet the special needs of young children. To sum up the information provided by the service operators, among the children of the existing Target Group 1, 45% had needs or difficulties in speech and pronunciation, 31% in fine motor, writing and self-care aspects, and 6% in gross motor and physical fitness. Among the children of the other three target groups, 45% had needs or difficulties in speech and pronunciation, 24% in fine motor, writing, and self-care aspects, and 9% in gross motor and physical fitness.

5.11   The service operators together with The Hong Kong Joint Council for People with Disabilities and The Hong Kong Council of Social Service expressed to the research team the following opinions on establishment. Recommendation 1: The establishment for supporting 224 children under Tier 1 Support Services should include 1 CP/EP, 1 Senior SCCW, 4.5 SCCWs, 0.25 Physiotherapist I (PT I), 0.5 Occupational Therapist I (OT I), 0.5 ST, 0.5 Assistant Social Work Officer (ASWO), and 1 Assistant Clerk. Recommendation 2: The establishment for supporting 160 children under Tier 1 Support Services should consist of 0.7 CP/EP, 1 Senior SCCW, 4.5 SCCWs, 0.25 PT I, 0.5 OT I, 0.5 ST, 0.5 ASWO and 1 Assistant Clerk. For the detailed recommendations and establishment statistics, see Annex D.

Resources Utilisation

5.12   The project teams of the service operators unanimously agreed that the Pilot Project and Tier 2 services were inextricably intertwined. The two service teams worked closely with each other on the following five aspects: (1) resources sharing, (2) coordination with schools, (3) professional support, (4) administrative support, and (5) service collaboration/transition.

5.13   The project teams of the Pilot Project and Tier 2 services shared the use of centre facilities, equipment, teaching materials and school training venues regarding **resource sharing**. The use of venues was optimised according to the type of service and training, for example, the two service teams might coordinate their use of venues according to the mode of training delivered such as class-based, large-group, small-group and individual training. In respect of manpower deployment, trainers might organise group training for children under the Pilot Project and Tier 2 services to provide more flexibility in the training under the two tiers of services and to meet the needs according to the target group, number of participants, abilities, activity contents and goals. Children under the Pilot Project could be invited to join the annual primary one simulation class organised by Tier 2 services, so that the children under the guidance of trainers could be benefited through peer scaffolding. SWs of Tier 2 support teams could help answer enquiries of schools and parents, and provide information and referral services.

5.14　In respect of liaison and collaboration with schools, the coordination between the Pilot Project and Tier 2 services is as below:

- Most of the service operators pointed out that the collaboration and liaison between Tier 2 service teams and schools was already well established. By integrating Tier 1 Support Services in Tier 2 operations, the collaboration between the project teams and schools could be consolidated and the operation could be even smoother.
- Some of the service operators mentioned that Tier 2 support team heads could coordinate the timetables of the two teams to provide services in schools so that both services could be operated smoothly and the impact on daily operations of the schools could be minimised.

5.15　The project teams of the Pilot Project and the service teams of the Tier 2 support services provided the following **professional support**:

- Based on the needs of the children under the Pilot Project in the domains of language, gross and fine motor, and perception, the project team could consult OT/ST of Tier 2 services, and according to the needs of teachers in schools, they could also invite therapists to provide professional consultations and talks as well as recommendations on supporting strategies.
- Professional team members of the Pilot Project could also participate in the training activities for Tier 2 service staff so as to enhance their personal efficacy.

5.16　The project teams of the Pilot Project and the service teams of the Tier 2 support services often interfaced with each other on referral and transitional services:

- The project teams of the Pilot Project and the service teams of Tier 2 maintained communication with each other, exchanged their views, and discussed how to support the children with special needs. For example, the staff providing in-class support under the Pilot Project would also care for Tier 2 cases, and assist them in integrating into class activities. Their recommendations to teachers on environmental strategies, teaching methods and curriculum adaptation would be accommodated to benefit children under the two tiers of services.
- The project teams of the Pilot Project provided support and training for children awaiting assessment. When those children were finally provided with Tier 2 services, the project teams of the Pilot Project would communicate with Tier 2 service team directly to explain clearly the needs and progress of the children, so as to ensure a seamless transition of services and thorough follow-up.
- By early screening and identification, the children with special needs could be referred to waitlisting for pre-school rehabilitation services as early as possible. When the children were finally provided with Tier 2 services, they and their parents could adapt to the change of services easily as they have already got used to the staff and mode of service. In terms of case transfer, the project team already knew the children and their family background and also had a good understanding of their learning goals and progress.

Conclusion

5.17　The feedback on integrating Tier 1 Support Services and OPRS in the NGO questionnaire can be summarised in the following four aspects: target group arrangements, planning of

Tier 1 and Tier 2 services, project teams' consolidation of manpower and operation, and resources utilisation.

5.18   The research team agrees that Tier 1 Support Services can be defined as short-term interventions with the focus on routine-based learning in the classroom; and consultation on professional therapies and social work services will be provided for the children with special needs. In comparison, Tier 2 support services under OPRS are long-term interventions, being school-based and centre-based and including professional therapies on individual and group basis and social work services. Both tiers of services aim at catering for the special needs of children and facilitating their all-round development.

5.19   Taking into consideration the operational needs of the service and adopting some recommendations from the operating agencies in collaboration with the Hong Kong Rehabilitation Association/Hong Kong Council of Social Service, the research team recommends that the future planning of Tier 1 and Tier 2 services to be as follows: (1) The target group of Tier 1 services should include children suspected with SN (Target Group 1), children waitlisting for assessment (Target Group 2) and children diagnosed with one single special need (Target Group 3). (2) All children admitted to Tier 2 services under OPRS will simultaneously be provided with Tier 1 Support Services; and the target group of Tier 2 services will cover children awaiting OPRS. The provision of services by SCCWs, STs, OTs and PTs under Tier 2 services shall remain unchanged as these have been operating smoothly since regularisation of Tier 2 services in 2018.

5.20   The Tier Movement mechanism between Tier1 and Tier 2 services is decided by a case management/review meeting comprising the service team and relevant school staff to discuss the relevant transfer and discharge arrangements in a professional evidence-based manner, based on the child's performance in various developmental domains and home-school-community consultation.

5.21   Not only will such design help provide comprehensive support for parents and teachers, but it will also enable parents to understand the two-tiered design of the service that children are admitted to Tier 1 service or Tier 1 cum Tier 2 services according to their special needs, outcomes and progress of development, learning and social adjustment. For both tiers of services, formative assessment for children will be conducted on a biannual basis to review the progress continually and collect information from various stakeholders including parents, teachers and professional teams, which will be the ground for admitting or transferring children to another tier of service.

5.22   In the long run, after integrating Tier 1 and OPRS, further exploration on how to optimize manpower and resources should be made whenever feasible, with reference to school-based and integrated approach to offer comprehensive and flexible support and services to young children with various severity level of SN in kindergartens and child care centres.

Chapter 6

Literature Review

6.1 For local reference, this literature review will compare the modes of Hong Kong, Singapore, the U.S. and Australia in providing early intervention support for children with SN and their parents. We will draw reference from the "Early Intervention Programme for Infants and Children" in Singapore, the "Coordinated Early Intervening Services" in the U.S., and the "National Disability Insurance Scheme" in Australia. Please refer to Annex E.

Early Identification and Early Intervention in Singapore

6.2 The "Early Intervention Programme for Infants and Children" (EIPIC) in Singapore was regulated by the 2017 Early Childhood Development Centres Bill. It aims to increase the developmental growth potential of children with SN, minimise the development of secondary disabilities and maximise integration in mainstream settings. EIPIC supports children who require medium to high levels of early intervention support by providing timely, convenient, suitable and evidence-based intervention and support services (Early Childhood Developmental Agency, 2021).

6.3 As for the screening, a child only has to be assessed by a paediatrician to be at risk of a developmental, intellectual, sensory or physical disability, or a combination of disabilities to obtain a referral. Upon formal assessment and referral, support officers and therapists will formulate an Individualised Educational Plan (IEP) for teachers to implement, and parents may request to attend the team meetings. Besides, the organisations under EIPIC will provide group training according to the child's needs. Support service targeted at children under two years old emphasises the training of parents on skills and knowledge of caring for children with SN, so that parents can effectively carry out intervention strategies in the child's daily routines at home. For pre-school children with marked improvement after using the service, professional support officers of the organisations under EIPIC will review the child's eligibility for classroom support service for an average of 2 to 4 hours per week and then inform the parents. Professional support officers will co-teach the child alongside the pre-school teacher to support the child in class and facilitate the child's learning of communication skills in a regular classroom, with a view to preparing the child for a regular curriculum. In the continuum of the support programme, active parent participation is required only for children under the age of two as parents have to carry out the newly acquired parenting skills, strategies and training at home at this stage of support (SG Enable, 2015). Parents may learn the basic knowledge of supporting the child in the training and workshops delivered by organisations under EIPIC so that they can reinforce the child's skills at home (Enabling Guide, 2020). To ensure that children with SN receive professional support services, all pre-school teachers have been equipped with the knowledge of special education, child development, various types and characteristics of SN, as well as exiting support services or professional therapeutic services for SN. In addition, pre-school teachers may choose to take specialised special education courses to learn more skills and knowledge to support children with SN, and eventually become learning supporting teachers to help school teachers implement IEP (Ministry of Social and Family Development, 2020). IEP is

customised to the needs of a child with SN, with observable and measurable goals of addressing child development needs and standards for assessing the progress. Learning support teacher will review the effectiveness of IEP every semester, in other words, once every six months on average (Enabling Guide, 2019).

6.4 Early identification and intervention support services in Singapore are essentially professional and prudent, with professionals taking the lead in both the screening process and support services. Procedures and arrangements of the programme as a whole are well-knit and systematic, with clear goals, standards and regulations for each of the support services.

Early Identification and Early Intervention in the United States

6.5 According to the "Individuals with Disabilities Education Act" (IDEA) established in the U.S. in 2004, infants and toddlers, from birth to the age 3, with disabilities receive early identification and intervention services under IDEA Part C, and children and youth aged 3 or above with disabilities receive special education and related services under IDEA Part B. This law does not only support children diagnosed with SN, but also cover support services for children suspected with SN or developmental delay. For infants and toddlers between birth and age 3, early identification and intervention support services include Individualised Family Service Plan and Head Start and Early Head Start programmes. For children aged 3 or above, special education services programme includes Individualised Education Programme and Collaborated Early Intervening Services (Center for Parent Information and Resources, 2021).

6.6 "Individualised Family Service Plan" (IFSP) is co-developed by support services team and parents of the child. It includes the child's present levels of development, family needs and strengths, specific early intervention services for the child and family, and transition plan to public schools (California State University, 2021). A child together with the family are eligible for IFSP if the child is assessed and diagnosed with special needs and the child and family have not used any support services for infants and toddlers from birth to age 3. IFSP adopts an inter-disciplinary approach in identification assessment. CP will conduct a formal assessment of the child's physical, cognitive, communication, social/emotion, and adaptive development through play (Heartland Community College, 2021). The child assessed and confirmed to qualify for IFSP will receive support services including developmental early intervention support, speech therapy, occupational therapy, physiotherapy, behavioural therapy, nutrition consultation, social work services, services coordination, etc. In addition, parents of the eligible child can also receive information about child development needs and support services from family support centres under IFSP, and join parent training on SN support (Center for Parent Information and Resources, 2021). After the IFSP team sets individualised goals for the child, early childhood educator who participate in the IFSP will liaise between parents and the IFSP team, and through the sharing of IFSP professionals and therapists, will also learn about the characteristics of SN and how to cater for children with SN. Throughout the IFSP, parents can directly discuss and formulate developmental goals for the child and tracking the child's progress of development. Parents have to document the child's daily or weekly behavioural pattern. Together with early childhood educators and other members of IFSP, parents also have to review the child's progress and the effectiveness of intervention

services every six months. Outcomes will be reviewed based on the child's ability to achieve a certain item so as to evaluate whether the targeted child has accomplished the set goal. If the child has attained the set goal, the IFSP team and parents will formulate a new goal for the child. If the child has not reached the set goal, the IFSP team will adjust the method of intervention (Jennings et al., 2012).

6.7   In addition, the Head Start and Early Head Start programs can also provide early identification and intervention services for infants and toddlers before school age. They mainly target at children between birth and age 5 from economically disadvantaged families, who have symptoms of SN but not yet been diagnosed with SN and have not used any support services. Children will be screened in an interview and other criteria include the child's age and household income. The action plan will include programmes and strategies formulated for the child by disability services officers, psychological health consultants or teaching staff. During the process, parents can share information about the child with support staff, participate in discussion and make suggestions on the programme and strategies (Head Start Early Childhood Learning & Knowledge Center, 2021).

6.8   The major support service for school-age young children aged 3 to 5 is the "Individual Education Programme" (IEP). IEP mainly serves public school children identified with SN, aged 3 or above. In a way, IEP and IFSP look alike but IEP puts more emphasis on child goals instead of family goals. IEP will formulate and review goals in schools once a year, and conduct a comprehensive review every three years. SN services under IEP include physiotherapy, occupational therapy and speech therapy, supplementary aids and services such as adapted facilities or communication aids (Center for Parent Information and Resources, 2021).

6.9   "Collaborated Early Intervening Services" (CEIS) are applicable to children in public schools, aged 3 or above, who have not been diagnosed with SN and have not been involved in IEP, but need additional intellectual and behavioural support in order to integrate into mainstream education. Screening for CEIS is conducted by local education organisations. Not only will they check if the child is receiving any support services and meets the age criteria, but they will also consider factors such as the child's outcomes in reading, mathematics and sciences, school recommendation, school suspension and expulsion. Their major services cover two areas: (1) facilitating professional development of teachers and other school officers so that they can provide evidence-based learning and behavioural support for the child such as evidence-based literacy instruction and adoption of suitable teaching software as appropriate; (2) providing assessment of child learning abilities and behaviour as well as related support services. In addition, CEIS will subsidise the purchase of teaching aids and materials. For longitudinal tracking of service outcomes, a standard method is used by all local education organisations to calculate the number of children supported by trained teaching staff and track the children's conditions (U.S. Department of Education, 2008).

6.10   In the U.S., early identification, early intervention and special education services for infants and toddlers are allocated and decided according to the child's age and severity level of SN. Whether 0 to 3 or 3 to 5 years old, infants and toddlers diagnosed with SN can all receive comprehensive support in the form of individualised services programmes provided by professionals. For cases suspected with SN, trained officers and teaching staff

will provide learning and behavioural support. Whereas services for infants and toddlers from birth to age 3 put a stronger emphasis on family support, those for children aged 3 or above have a stronger emphasis on the child's personal needs.

Early Identification and Early Intervention in Australia

6.11   In Australia, early identification and intervention services are funded by the National Disability Insurance Scheme (NDIS). As a nation-wide scheme, NDIS provides funding to children and adults with disability or developmental delay to acquire reasonable and necessary support services to improve their quality of life (People with Disability Australia, 2018). For children with disability or developmental delay, NDIS will provide the child and parents corresponding support and training such as early intervention therapy provided by professional therapists and the required assistive products (e.g., wheelchair or communication devices) (Raising Children Network (Australia) Limited, 2021).

6.12   Under NDIS, children under the age of 7 can use early intervention services without undergoing any formal assessment or diagnosis. To apply for the support services, a person only has to apply over the phone, or obtain a referral from general practitioner, paediatrician or nurse, or early childhood education officer. Upon successful application, planning conversations between parents and support officers will be organised to discuss child and family needs, goals, and create a plan for support. NDIS covers a variety of professional therapies and support services such as occupational therapy, physiotherapy, speech therapy and psychotherapy. The child and the family can receive various specific professional therapies and early intervention support services to deal with difficulties and facilitate child development. In addition, the plan will also provide general mainstream support, such as child and family health services, care services, social and recreational services, peer support services and playgroups. In the process of support, parents can discuss with support officers about the child's needs and conditions so as to formulate an individualised services plan (Raising Children Network (Australia) Limited, 2021). Organisations funded by NDIS can provide parents with information enquiry services, professional therapies, care services and parenting training, etc. The Government has also developed a resource website on parenting and child development, through which parents can obtain information about activities and consultations on parenting and child development. Parents can also participate in positive parenting workshops to learn the skills and strategies in catering for children with SN (Department of Communities, Child Safety and Disability Services, 2014). Under NDIS, teachers will participate in the regular review of support services to ascertain whether the services provided can accommodate the child's needs and development. Teachers can also make use of the online resources and participate in the workshops and webinars provided by NDIS (Developmental Educators Australia Inc., 2021). The duration of an individualised support services plan for each child is different. The support officer will contact the parents for a meeting three months before the end date to review the effectiveness of the support services and come up with a new individualised support services plan and a new end date (Raising Children Network (Australia) Limited, 2021).

6.13   Early intervention services in Australia are characterised by their flexibility and low threshold. Children can receive professional therapy services according to specific

developmental needs without obtaining formal assessment and the services can be continually updated and adjusted. Parents and teachers can also retrieve the required information, support and training from funded organisations and online public resources.

Conclusion

6.14   Australia and the U.S. assign trained officers and teaching staff to provide learning and behavioural support for cases suspected with SN. Australia, Singapore and the U.S. provide services for young children diagnosed with SN, with professionals taking the lead in screening procedures and delivery of support services, with a view to providing individualised services programmes. On the whole, the current Pilot Project is similar to the services provided in the three countries, with trained officers and teaching staff providing learning and behavioural support for young children suspected with SN.

Chapter 7

Discussions and Recommendations

Introduction

7.1 The chapter will summarise the quantitative and qualitative findings on child outcomes, parent outcomes and teacher outcomes to evaluate the service delivery mode of the Pilot Project and its cost-effectiveness and efficacy in catering for the development of children with special needs, recommend effective and practicable service delivery mode, including major service scope, output and outcome standards, and explore the possibility of integrating the Pilot Project and the "On-site Pre-school Rehabilitation Services" (OPRS), with a view to supporting the training needs of pre-school children who have different levels of special needs in a more comprehensive, flexible and sustainable way.

Evaluation of the Service Delivery Mode of the Pilot Project: Cost-effectiveness and Efficacy in Catering for the Development of Children with special needs

7.2 In terms of child outcomes, Time 1 and Time 2 results on "The Hong Kong Comprehensive Assessment Scales for Preschool Children" (HKCAS-P) showed that children improved significantly in all domains, with the greatest improvement in language development, moderate improvement in cognition and fine motor, and slight improvement in social cognition and gross motor, which indicated the effectiveness of the support services in enhancing children's cognition, language and social cognition, etc.

7.3 Time 1 and Time 2 results on the "Child Development Rating Scale" rated by parents indicated that children of the assessment group had significant improvements in all developmental domains, with moderate improvements in cognition, language and fine motor abilities and slight improvement in social cognition, showing that the abilities of children with SN improved with age in all developmental domains.

7.4 According to the comparison of Time 2 results between the experimental and assessment group and the control group on the "Child Development Rating Scale", children of the experimental and assessment group were still relatively weak in the development of cognition, language, social cognition, fine motor functions and self-care abilities. They lagged behind most in the language domain, thus revealing their particular need for interventions and support services in the developmental domain of language.

7.5 The results on the "Teacher Observation of Classroom Adaptation – Checklist" (TOCA-C) showed that children of the experimental and assessment group made notable improvements in their concentration in Time 2. Although they were still outperformed by the control group, differences between the two groups were diminishing. This implied that Tier 1 Support Services could effectively help improve concentration of the children with SN. It also evidenced that routine-based learning in the classroom could effectively enhance children's learning adjustment.

7.6 The quantitative and qualitative findings from parents and teachers provided further

evidence. Parents agreed that the Pilot Project had positive impacts on children's learning, social, behavioural and emotional domains, etc. Teachers observed improvements in children's learning interest, outcomes and proactiveness, and attributed this to the support team's provision of targeted recommendations that could be applied in the classroom and home environments.

7.7   In terms of parent outcomes and as indicated by the results related to parenting, there was no significant difference in self-efficacy, parental stress, parenting anger and general health among the assessment, experimental and control groups and between Time 1 and Time 2. In Time 2, the general health of parents of the experimental and assessment group was better than those of the control group. Such positive results confirmed that the support for parents provided by the Pilot Project could alleviate parenting stress and foster general health.

7.8   Parents said that the Pilot Project helped them understand their children's abilities and reasons behind their behavioural outcomes so that they could spot and discern their children's problems and needs as early as possible and could respond and help as appropriate. Through the services provided by the project teams under the Pilot Project, parents learned the needs of children with developmental problems, and acquired some skills and techniques of teaching and counselling their children. They became more confident in giving home training to their children. In addition, those services helped facilitate parent-child interaction, establish harmonious relationship, and alleviate parenting stress.

7.9   With regard to teaching efficacy, principal and teacher interviewees said that under Tier 1 Support Services, teachers could implement effective support strategies in the daily classroom such as the setup of the classroom environment, adjustment of homework and exercises, class activities and process arrangement because the support team analysed and explained the needs of the child to the teacher in depth, provided targeted training for the teacher, demonstrated classroom management skills and strategies in class, discussed with the teacher strategies to facilitate the child's learning and development, and helped the teacher in integrating theory and practice.

7.10   Quantitative and qualitative findings from the service operators revealed that challenges of the Pilot Project lay in fostering collaborations among schools, families and project teams, and providing Tier 1 Support Services in an inclusive environment. In terms of child outcomes upon receiving Tier 1 Support Services, SCCWs observed that children had improvements in learning ability, adaptability and performance in class, and could blend into the large class teaching environment. As regards parents' benefits from the Pilot Project, their parenting skills as well as understanding and acceptance of children with SN were also enhanced. In respect of its effects on teacher support, the Pilot Project could improve teachers' understanding of and attitude to children with diverse learning needs and their competence in discerning children's needs so that they could be more sensitive to the learning needs of children. Teachers also became more ready to accept and apply SN teaching skills so that their teaching could meet children's diverse needs more easily.

7.11   The service delivery mode of the Pilot Project could effectively cater for the development

of children with special needs and support their parents and teachers. The cost-effectiveness and efficacy of the Pilot Project was also positive. Having considered the positive child, parent and teacher outcomes under the Pilot Project, the research team recommends that Tier 1 Support Services be regularised.

Recommendations on Effective and Feasible Service delivery mode

7.12   Due to the severe impact of COVID-19 from 2020 to 2022, the research team analysed data of 19 months which showed that the service operators could generally achieve the service goals. As the pandemic continued and school classes were yet to resume normalcy, the need for adjusting OS1 should be considered.

7.13   The other three output standards were achieved, including services provided by psychologists, services provided by SCCWs, and services for parents/guardians/carers. The two service outcome standards were also attained, namely, service satisfaction as rated by parents/guardians/carers, and teachers/school staff's satisfaction towards enhancement of their catering for the diversity of young children, which actually far exceeded the standards.

7.14   The results of the parent questionnaires also confirmed that outcome standards mentioned above were achieved. Parents showed high level of satisfaction towards the quality of the various professionals (psychologists and SCCWs) and services provided by the service operators (e.g., assessment, individual training, group training, classroom observation and class adjustment).

7.15   In respect of service delivery mode, parents considered classroom observations conducted by professionals and arrangements of identifying children with developmental issues to be very important. The incorporation of the related support and adjustments into the child's daily routines in class was highly commended by parents as parents would then be more receptive to the child's use of the related rehabilitation services.

7.16   Quantitative and qualitative results together showed that parents were generally satisfied with the service delivery mode and efficacy of the Pilot Project, and they agreed that those services could fulfil early intervention effectively. Besides, principals and teachers of the experimental and control groups affirmed the positive effects of the Pilot Project on children, parents and teachers, as evidenced by the results. Schools were also willing to continue to participate in Tier 1 Support Services.

7.17   Information from the service operators showed that there were strict procedures to admit children to and discharge them from the Pilot Project, including collecting information from teachers, parents and school-based SWs, utilising various assessment tools, and engaging different stakeholders in family-school-community collaborations to identify children for services and ascertain their needs. All these indicated that the admission and discharge mechanisms of the Pilot Project were operating well. In order to identify the learning and adjustment needs of Tier 1 children more effectively, the research team and the service operators, having consulted SWD, CACs, EDB and related units, formulated

the Child Observation Checklist (COC) with tested reliability and validity for the use of the on-site service teams and school teaching teams to screen the special needs of the children after receiving the corresponding training.

7.18 As regards the output standards, there is a need to adjust OS1, i.e., the number of service places for children per year. OS2 (services provided by psychologists), OS3 (services provided by SCCWs) and OS4 (services for parents/guardians/carers) can be consolidated in the calculation of service hours to allow flexibility in service provision for the operators. For a team serving 100 children in Tier 1 Support Services, a total number of training hours can be 1250. The two service outcome standards can be maintained, namely, service satisfaction as rated by parents/guardians/carers (OC1), and teachers/school staff's satisfaction towards enhancement of their catering for the diversity of young children (OC2). The service content and duration suggestions can be adjusted with reference to the school-based and integrated approach, the half-year child development assessment and the actual needs of the children in future.

7.19 Recommendations on the mode of service are summarised below. Provide services according to children's special needs and for their comprehensive development. To be routine-based, reinforce school-based support for children in the large-class teaching environment and strengthen the catering for children's diversity. Provide inter-disciplinary professional training and therapies to cater for children's needs in specific developmental domains in order to foster their holistic development. By engaging inter-disciplinary professionals and family-school-community collaborations, provide parents and carers with a variety of support to help parents understand developmental challenges their children face, accept their children and unleash parenting efficacy. With school teachers as professional collaborative partners, enhance teachers' discernment of and sensitivity in identifying children with SN as well as application of their professional ability in early childhood education, so that they can collaborate on strengthening the caring of children with SN in school. Building on the professional spirit of the evidence-based principle, formulate the admission and discharge mechanisms; and on the basis of family-school-community collaborations, engage teachers and parents in discussing discharge arrangements, with a view to establishing a beneficial environment for child development.

Exploration of the Feasibility of Integrating the Pilot Project and the "On-site Pre-school Rehabilitation Services" (OPRS)

7.20 The feedback on integrating the Pilot Project and OPRS in the NGO questionnaires can be summarised in the following four aspects: target group arrangements (see paragraphs 5.4-5.6), planning of Tier 1 and Tier 2 services (see paragraphs 5.7-5.8), project teams' consolidation of manpower and operation (see paragraphs 5.9-5.11), and utilisation of venues, facilities and equipment (see paragraphs 5.12-5.17).

7.21 Having considered the essential output standard 7 of OPRS, i.e., completing developmental assessment for each child within a period of six months and conducting formative assessment on a biannual basis to continually review and follow up the child's progress, the research team agrees that Tier 1 Support Services can be defined as short-term interventions with the focus on routine-based learning in the classroom; and consultation on professional therapies and social work services will be provided for the

children with special needs. In comparison, Tier 2 support services under OPRS are long-term interventions, being school-based and centre-based and including professional therapies on individual and group basis as well as social work services.

7.22   The research team recommends that Tier 1 Support Services be calculated based on the number of hours. According to the actual figures provided by SWD, the Pilot Project served a total of 3,931 children from 1 August 2020 to 31 August 2023. For calculation purpose, each child as a unit received 2.3 hours of services provided by psychologists and 16.5 hours of services provided by SCCWs for children, their teachers and parents, amounting to about 18.8 hours of service time.

7.23   In addition, for children with other needs, additional provision of professional therapies and social work services on individual or group basis can be considered. According to the information of the children of the existing Target Group 1 provided by the service operators, 45% were preliminarily assessed to have needs or difficulties in speech and pronunciation, 31% in fine motor, writing and self-care aspects, and 6% in gross motor and physical fitness. Among the children of the other three target groups, 45% had needs or difficulties in speech and pronunciation, 24% in fine motor, writing, and self-care aspects, and 9% in gross motor and physical fitness.

7.24   For the planning of Tier 1 and Tier 2 services in future, the research team makes the following recommendations: (1) Not only should the target group of Tier 1 service include Tier 2 children, but it should also cover children suspected with SN (Target Group 1), children awaiting assessment (Target Group 2), and children diagnosed as having single disability (Target Group 3). Services should be routine-based with the primary goal of catering for children's special needs, such as individual assessment, training and support, class observation as well as group training and support, inside or outside the classroom, for children; consultation on classroom processes and adjustment, training seminars and workshops, case review or management meeting for teachers; and consultation on home training, training seminars and workshops, case review or management meeting for parents. Formative assessment for children should be conducted on biannual basis and information should be collected from teachers and parents for the use of case review meetings. For comprehensive support services, children should be provided with services from STs, OTs, PTs and SWs according to their specific needs, in addition to the current services provided by psychologists and SCCWs. (2) All Tier 2 children being admitted to OPRS will simultaneously be provided with Tier 1 Support Services. Under the existing Tier 2 services, 60 hours of training per child within a year (EOS1) will be provided including services provided by SCCWs, STs, OTs and PTs, and calculation of services by the total number of hours can be considered. As regards the average number of on-site pre-school and centre-based training hours provided by OT, PT and ST (i.e., EOS2 and EOS3), calculation of services by the total number of hours can also be considered to facilitate flexible deployment of therapeutic services to support children under Tier 1 services. The transition services for children progressing to primary education and waitlisting for subvented pre-school rehabilitation services (EOS5) can also be extended to children under Tier 1 services. For the model of two-tiered services, see Table 32.

Table 32

Two-tiered Planning of On-site Pre-school Rehabilitation Services

Tier 2 on-site pre-school rehabilitation services	IIA – school-based individual or group training in all developmental domains	IIB – centre-based individual or group training in all developmental domains
Tier 1 Support Services	IA – routine-based support, through SCCWs and teachers' collaboration and implementation	IB – consultation or services provided by psychologists, STs, OTs, PTs and SWs

7.25   After the integration of Tier 1 and Tier 2 services, the service team can flexibly deploy manpower to achieve synergy and make more effective use of manpower and resources. The research team recommends further exploring a school-based and integrated approach to provide early intervention services for children with signs of SN so that children can receive support as early as possible. Service plans can be developed in response to the result of the developmental assessment every six months, children's abilities and SN of different stages to flexibly utilise different service categories, service models, manpower and resource arrangements, etc., to optimise service effectiveness and resource utilisation.

7.26   In the long term, the research team recommends continuing to explore a school-based and integrated approach to provide more comprehensive, flexible and sustained support to cater for the needs of children with different severity level of SN at different stages, and to evaluate its effectiveness to formulate long-term support measures, required manpower and resources for children with SN.

7.27   The service operators also recommended that the total number of the following support services for parents and school workers, currently under Tier 2 or Tier 1, be calculated as a whole: number of training and educational programmes provided for parents/guardians/carers per year (EOS4), and number of workshops/talks/programmes provided per year for teachers on skills to work with children with special needs (EOS6) currently under Tier 2 services, number of sessions in the form of individual or group assessment/consultation/counselling provided by EPs for school staff (principals and teachers) and parents/carers within a year (OS2), number of sessions in the form of individual or group assessment/consultation/counselling provided by Senior SCCWs/SCCWs for teachers and parents/carers within a year (OS3), and number of training and educational programmes for parents/guardians/carers per year (OS4) under Tier 1 services.

7.28   Not only will such design help provide comprehensive support for parents and teachers, but it will also enable parents to understand that in the two-tiered design of the "On-site Pre-school Rehabilitation Services", children are admitted to Tier 1 service or Tier 1 cum Tier 2 services according to their special needs, outcomes and progress of development, learning and social adjustment. Through early screening and identification by the two-tiered professional team, children with special needs can be referred to acquiring early intervention services as early as possible. When the children are finally provided with Tier 2 services, they and their parents can adapt to the transition of services easily as they are

already familiar with the staff and mode of service. Tier 1 Support Services for Tier 2 children provided by the two-tiered professional team will be routine-based focusing on the processes of school and family, with a view to providing comprehensive therapeutic training and support services for children for synergy of effects. For both tiers of services, formative assessment for children will be conducted on biannual basis to review the progress continually and collect information from various stakeholders including parents, teachers and professional teams, which will be the ground for admitting or transferring the children to another tier of service.

7.29 To enhance children's outcomes in all developmental domains effectively, the research team agrees that inter-disciplinary services are needed. Inter-disciplinary teams shall include SCCWs, psychologists, professional therapists and SWs. Such support teams will enable parents and teachers to have an in-depth understanding of children with SN and master related educational skills, so as to adjust the home and school environments and the home and classroom schedules to meet the learning, social and adjustment needs of those children.

7.30 The research team would like to emphasise that every child has their unique progress of development and shall be respected. The more we care for children's holistic development, the easier will be for us to solve issues related to their physical, intellectual, affective and social development. Regarding children's special development issues, any consideration and arrangement of training hours should first take into account how to plug them into children's daily routines and ecological systems to optimize the effectiveness of the intervention.

7.31 Regarding service regularisation, the research team recommends the integration of the Pilot Project and OPRS to provide school-based inter-disciplinary professional services from professionals such as SCCWs, SWs, PTs, OTs, STs and CPs/EPs. Corresponding therapies and training could be provided for children with issues in language, gross motor, fine motor or global delay, and consultations could also be provided for their parents and teachers.

7.32 At the early stage of the Pilot Project, schools and parents only had a shallow understanding of Tier 1 Support Services. It is recommended that promotion for the Project be strengthened in future so as to enrich parents and teachers' understanding of the rationales, objectives, modes and even target users of the services. In addition, parenting education and support are particularly important for parents of children with SN which will help reinforce family-school collaboration and concertedly support children with SN.

7.33 Promotion and introduction of Tier 1 Support Services can also be extended to staff of the Maternal and Child Health Centres and CACs of the Department of Health, so that they can make timely referral for cases as appropriate.

Sustainable Effort in Provision of Early Screening and Intervention Services during Critical Period of Child Development

7.34   Under the Pilot Project, children had notable outcomes in all developmental domains, and the effects of early screening and early intervention to support children with SN in their learning and development can be fulfilled. By adopting routine-based approach in the daily routines of home and school settings, parents and teachers can have a better understanding of children with SN, acquire the related teaching skills and adjust the home and school environments to fit into children's ecological systems, with a view to facilitating their optimal development. In addition, by obtaining parents' prior consent, the information of the Tier 1 final service report can be transferred through the "(Special Education Management Information System, SEMIS" of EDB to primary school which will help primary schools understand these children's needs, the recommended support strategies as well as necessary aids and equipment, and will subsequently facilitate children's transition to primary one.

Chapter 8

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Annex A – Progress of Research

Period of Time	Major Tasks	Completed and Submitted Items
August to October 2020	- Formulate research and evaluation plans (with the use of questionnaires and other scales and tools) - Visit service operators to observe the services provided	- October 2020: Proposed research method and submitted a preliminary report according to the service specifications of research - 8 October 2020: Briefed all stakeholders on the research contents at an initial meeting
November 2020 to January 2022 #	- Collect Time 1 data from children, parents and teachers of the Pilot Project (to be continued until the period of July to October 2021) - Analyse data of service operators implementing the Pilot Project - Analyse data of children assessment and interview	- April 2021: The revised preliminary report was accepted - 24 May 2021: Had a meeting with the Labour and Welfare Bureau/ Social Welfare Department to report on the research progress - June 2021: Submitted an interim report - 29 March 2022: Had a sharing session with all stakeholders
February to July 2022#	- Collect Time 2 data from children, parents and teachers of the Pilot Project (to be continued until the period of September 2021 to February 2022) - Analyse data of parent and teacher questionnaires as well as interviews	- 24 June 2022: Reported on the research progress at the meeting of the Rehabilitation Advisory Committee
July 2022	- Complete data analysis and discussion of results	- July 2022: Submitted the final report with executive summary, including analysis of results and feasible plans

November to December 2022	- Ask parents of those 87 schools participating in the Pilot Project for consent and invite them to fill in the parent version of the questionnaire for their children	
December 2022 to February 2023	- Invite class teachers of children whose parents have returned questionnaires to fill in the teacher version of the questionnaire - Merge data from parent and teacher questionnaires and match the two sets of data by student name	
February to March 2023	- Invite children, whose teachers have returned the teacher questionnaires, for children assessment, and select Chinese speaking children from K1 to K3 - Analyse data from parent and teacher questionnaires	
March 2023	- Invite the same class teacher to fill in the teacher questionnaire for the same student for the second time	- Meeting of the Legislative Council Panel on Welfare Services on 13 March 2023 on support services for children with special needs (including pre-school children) and their parents
April to August 2023	- Analyse data of children assessment and retest of the teacher questionnaire - Complete data analysis and discussion of results	- Stakeholders Engagement Session on 12 July 2023 - Education Bureau - Stakeholders Engagement Session on 16 August 2023 - Parents

		- Stakeholders Engagement Session on 24 August 2023 - Staffs of the operating NGOs (psychologists, SCCWs, social workers, etc.)