Chapter 1 Executive Summary

The Consultancy Services for Research on Evaluating the Pilot Scheme on On-site Pre-school Rehabilitation Services (OPRS) began in September 2016. As at March 2018, there are 94 new cases and 306 old cases in the longitudinal study. There are 139 participants who had also completed Time 3 assessment (conducted around three months after case discharge). 97 case studies with parents' interviews, visits to school and centres were also reported. 420 completed questionnaires were collected from parents and 557 questionnaires from principals and teachers were collected from 278 participating kindergartens (KGs) and kindergarten-cum-child care centres (KG-cum-CCCs), with a response rate of 57%. Ten focus group interviews with 45 principals and teachers, and five focus group meetings with 24 parents were also conducted. We received 124 subjective evaluation questionnaires from 16 non-governmental organisations (NGO) chief administrators and 108 professionals (including speech therapists (ST), occupational therapists (OT), physiotherapists (PT), special child care workers (SCCW), social workers (SW), and clinical/educational psychologists (CP/EP)) of the Project Operators of the Pilot Scheme, with a response rate of 96.4%. We have conducted 15 focus group interviews with professionals of Project Operators. Thirty-two agency visits to the Project Operators were completed within the evaluation period.

Research Findings

(A) Outcomes of Pilot Scheme

(1) Performance of Children

(a) <u>Evidence obtained from the quantitative study</u>

2. The study has examined the child outcomes of the Pilot Scheme. Positive impacts are found on child performance in both the quantitative and qualitative analyses. In the longitudinal study of a sample of 400 children, significant improvements are evident in the child outcomes across all the domains

(cognitive, fine motor, gross motor, language and social) from Time 1[1] to Time 2[2] in all age groups as indicated below:

	N	*F* value	Effect Size (Partial η^2)	Impact
2-3 Years Old	38	5.31	.45	Large
3-4 Years Old	113	8.83	.29	Large
4-5 Years Old	148	18.04	.39	Large
>5 Years Old	101	9.64	.34	Large

Note: Large impact (Partial η^2 >.14), Medium to large impact (Partial η^2 = .06 -.13), Small (Partial η^2 = 0 - .01)

3. A sample of 162 children completed assessments in Time 1, Time 2 and Time 3, including a subsample of 139 children being discharged from OPRS for at least 3 months. A significant maintenance effect was still observed with an *F* value of 6.355, $p < .001$, partial $\eta^2 = .33$ in all domains when Time 1 and Time 3 scores were compared.

4. The median professional training hours per month (5.6 hours) consisted of physiotherapy (0.22 hours, 4%), occupational therapy (0.85 hours, 15.2%), speech therapy (1.65 hours, 29.4%), and special education/child care (2.88 hours, 51.4%). While the minimum number of centre-based training[3] hours proposed by Project Operators under the Pilot Scheme ranges from 8 to 23 hours per child per year, the range of centre-based training hours was from 0 to 100 per year in children in the longitudinal study and the median of centre-based training hours was 10.6 hours. It is noted that children with weaker performance were generally provided with more centre-based training;

[1] Time 1 Assessment refers to a baseline assessment to be conducted for current cases and new intake cases randomly selected from each Project Operators (as pretest with three time points).

[2] Time 2 Assessment to be conducted around 1 month before children discharging from the services.

[3] Centre-based training include: (A) Specific training to children that must be performed in centre with required facilities (e.g. gross motor training, sensory integration training); (B) Training for children that must be performed in centre (other than (A)) to meet children's need (e.g. group training/ social training); and (C) Training provided in centre due to other considerations (due to operational difficulties/ long vacation or limited space of KGs). Training hours provided in centres for fulfilling minimum output standard requirements only accounted for 11.4% of the overall centre-based training hours.

significant improvement could be found even for children who did not receive any centre-based training; and that different groups of children receiving different intensity of centre-based training all showed significant improvements in all domains (i.e. cognitive, fine motor, gross motor, language and social and emotional) after receiving OPRS for about a year. The findings indicate that children's needs for centre-based training are subject to individual developmental conditions, and it is more practical or meaningful not to impose a minimum number of centre-based training hours for every child. Instead, the provision of centre-based training should be subject to the professional judgement of individual cases by inter-disciplinary service teams in consultation with school teachers.

(b) Evidence from the qualitative study

5. Positive comments on children's improvement are also reported in the qualitative analysis. In the focus group interviews with teachers and principals of participating schools, observable improvements in self-expression, classroom behaviors and self-concept are described. Professionals and administrators of the Project Operators also observed good progress from the early intervention services offered to young children.

(2) Satisfaction of Parents

(a) Satisfaction level of parents

6. With reference to the data provided by the 16 Project Operators to the Social Welfare Department (SWD) within the second year, the mean of satisfaction level of parents is 99.83% exceeding the required level of 80%. In the 420 questionnaires collected from parents, the satisfaction level is 6.14 out of 7 and parental satisfaction is correlated most strongly with perceived gains in language domain of children in particular.

(b) Satisfaction level of parents obtained from the qualitative study

7. Parents in the 97 case studies have generally expressed great satisfaction and appreciation towards the Pilot Scheme and they reported significant improvements in their children after taking part in it. Parents who responded to the open-ended questions in the questionnaire are also satisfied and have attributed the positive gains to the professional training designed and delivered by therapists and SCCWs.

8. The findings have shown empirical evidence with multiple sources of data that the Pilot Scheme is providing effective early intervention for young children with special needs. Parents of these young children have also expressed great satisfaction towards the services to the Project Operators and to the research team.

(3) Performance of Project Operators in Achieving Essential Output and Outcome Standards and Proposed Adjustments

9. For Essential Output Standards (EOS) specified by SWD for Project Operators under the Pilot Scheme, most of the EOSs were met by the Project Operators, except "Minimum number of centre-based training" and "Number of consultation sessions provided for teachers for each KG/ KG-cum-CCC per year". On the other hand, it is noted that the number of training and educational programmes provided for parents/ guardians/ carers per year provided by some Project Operators far exceeded the required level.

(a) Minimum number of centre-based training proposed by Project Operators (AOS)

10. Under the Pilot Scheme, the "Minimum number of centre-based training" proposed by Project Operators is 8 - 23 hours per child per year. All the Project Operators failed to achieve this requirement with the achieved percentage ranging from 32.1% to 98.96%. Among the 400 children in the longitudinal study, 34 children (8.5%) never attended any centre-based training.

Among 97 children in the case study, 5 (5.2%) attended 0 hour of centre-based training. In both samples, the mode of centre-based training is 0 hour. Some Project Operators reflected that the long travel distance between home/school and some off-site centres is one of the factors which discourage parents from bringing their child to these centres. Some parents also indicated that the time cost for working parents to bring their children to receive trainings in these centres was high.

(b) Number of consultation sessions provided for teachers for each KG/ KG-cum-CCC per year (EOS5)

11. Under the Pilot Scheme, the "Number of consultation sessions provided for teachers for each KG/KG-cum-CCC" is 10 sessions per year and only consultation sessions lasting for at least two hours would be counted. Eleven Project Operators achieved the agreed level of providing 10 consultation sessions each of two hours for each participating KG whereas five Project Operators failed to attain the agreed level. Some Project Operators reflected that the current requirement is too rigid for teachers given their busy teaching schedules at schools.

(c) Number of training and educational programmes provided for parents/ guardians/ carers per year (EOS4)

12. Under the Pilot Scheme, the "Number of training and educational programmes provided for parents/ guardians/ carers" is 2 programmes per year and each training and educational programme must last for at least two hours. All Project Operators achieved the agreed level with the highest number of trainings/ programmes for parents is 82 and the lowest is 3. The fact that some Project Operators provided training/ programmes that far exceeded the agreed level reflected strongly that the Project Operators adopted family-centred value and invested resources to supporting parents/guardians/carers with special needs in early intervention. It is suggested that the output standard should be adjusted to strengthen support for

parents/carers to build up positive attitude, train them with effective skills in raising children with special needs and promote a family-centred approach.

(4) Key Success Factors

13. Based on the data collected from the case studies, subjective evaluation of Project Operators, and qualitative feedback from the teachers and professionals, the research team has identified the following five key success factors on the service delivery mode:

(a) Inter-disciplinary approach of a professional team with child-centred services

14. OPRS encompasses the key success factor of inter-disciplinary service teams comprising OT, PT, ST, SCCW, SW and CP/EP which provide comprehensive assessment and training to children with a monitoring system to track the progress. Each member has his/her specific roles in contributing to the intervention programme of each child. The intervention and training should be child-centred taking into account the developmental needs of individual child. The inter-disciplinary service team also provides training and workshops for teachers and parents, as well as consultation services to the teachers in developing better understanding and skills in working with children with special needs.

(b) A tripartite approach (family, school, community)

15. The tripartite model (i.e. Project Operators who are experienced rehabilitation service providers provide services on the community level and in schools where children with special needs are studying plus parental work) has integrated the essential social environments for children (the home, the school, the community) into one comprehensive support and intervention model for children with special needs. The on-site feature is unique that the professional therapeutic service is outreached to the children at school. Children receiving training in a familiar place where daily schooling happens can be better

integrated into the mainstream education in future. While school-based training is considered as the prevalent option under OPRS which is most preferred by parents, complementary training could be provided outside school with parental support and engagement for OPRS activities (e.g. home-based training provided outside school hours), supported by different community/welfare facilities (e.g. Parents/ Relatives Resource Centres (PRC), Integrated Family Service Centres (IFSCs)) on the community level. To this end, inter-disciplinary consultation/training by expertise is offered to schools and teachers for their inputs to enhance children performance and positive behavior support after professional assessment and in the process of professional intervention. Programmes and workshops are designed for parents to enhance their understanding and knowledge on how to nurture children with special needs, e.g. parent resources packages, individual family service plan (IFSP) to address family needs.

(c) A family-focused approach to maximize parental involvement

16. In the process of data collection and from the case studies, it is revealed that family support and parenting style are important factors for successful cases. Specifically, better understanding of parents on children developmental issues and training needs as well as the knowledge on resources available in the community are found to be able to enhance the quality of the children's training process. Interviews with the parents, KGs and Project Operators also rendered positive qualitative comments on the importance of parental engagement as a key contributive factor for children success from the OPRS intervention.

17. Since parental involvement is important, different Project Operators have optimised existing or provided additional resources to help mobilize parent participation. Some Project Operators developed resource kits to support parents for doing home-based training with their own children, while some other Project Operators organized stress management groups and workshops on managing children's challenging behaviours. Another important activity for parents to get involved in their children's treatment is through participation in

the children's various forms of training. The parents could get the first-hand information on how the trainings are conducted, and get a chance to discuss with therapists on how training can be applied to daily practices at home. Through community-based activities and support (e.g. resources from library, recreational parks, camp site), parents can also get to know other children and families with similar needs and problems, and to benefit from the learning on community resources during all these exchanges.

(d) A combined model of intervention: From generalist to specialist through collaboration with schools and teachers

18. The OPRS model is found to be covering the needs of children, teachers and schools which could be provided by generalists on one hand, and the unique needs of individual child to be provided by specialists on the other hand. Its intervention strategy of providing on-site service has given it the capacity to identify and choose among a range of intervention alternatives (school-based, classroom/group-based, family-based, individual-based services), then it proceeds to undertake a process for problem-solving and coping by heightening specific interactions among chosen professionals/teachers/parents, and finally to achieve an intervention goal on individual child. This unique engagement and service delivery process helps identify and assess the clienteles in a friendly and less stigmatizing way.

19. We observed one of these heightened interactions to be very useful for the whole service is that kindergarten teachers are invited to work with the inter-disciplinary service team for a "collaborative partnership" for services. Since teachers are interacting with children mostly in schools, such kind of "collaborative partnership" plays a very important role for sustaining the support effectiveness by building teachers' competence to immerge concepts of identification and rehabilitation for children with special needs, as well as accommodation to the curriculum and classroom management.

(e) Service coordination to energize various types of heightened relationships

20. The inter-disciplinary service teams need to mobilize and energize many communications, liaison and mobilization of resources in order to build a strong network of heightened relationships for facilitating changes. Such liaison/ communication work includes engagement with students, identifying their special needs and other family problems, providing counselling to their parents and introducing them to suitable assessment and choosing of intervention methods by the inter-disciplinary service teams to achieve an intervention goal and change. In all these key steps, effective liaison and communication between parents and teachers, inter-disciplinary service teams and teachers, and parents and inter-disciplinary service teams need to be facilitated. Project Operators and school personnel in the focus group interviews have shared the importance of having effective coordination among all parties concerned. In this connection, it is worth to note that the enhanced teacher-pupil ratio of 1:11 for kindergartens has created room for various professional activities (such as professional collaboration and development, communication with parents and catering for diverse needs of students). Depending on the exact requirement and circumstances of individual schools, such service coordination work could be provided by a school-based teacher, SW or SCCW.

Recommendations

21. While the Pilot Scheme proves that children receiving OPRS would be significantly improved and Project Operators, parents and teachers are highly satisfied with OPRS, the study has identified some room for improvement to further enhance the success of OPRS upon regularisation.

Recommendations upon Regularisation of OPRS

(a) Enhancement for Staffing of Inter-disciplinary Service Team

22. As the provision of an inter-disciplinary service team comprising SW, PT, OT, ST, CP/EP and SCCW is a key success factor of OPRS, it is proposed that these teams be further strengthened in the following areas:

(i) With about 58% of the children in the longitudinal study diagnosed as having speech impairment, the need for enhanced speech therapy service is essential.

(ii) Social work support should be enhanced in view of the importance of the role of social worker who not only acts as a bridge in an inter-disciplinary team but also supports family and parents in needs by casework, group work and programme approach.

(iii) Inclusion of ancillary staff such as programme assistant and driver (for mobile training centre) can facilitate the daily operation of OPRS.

(iv) Professional supervision should be enhanced on an agency basis to support front-line OTs/ PTs in inter-disciplinary service teams so as to enhance service quality.

(v) The notional number of professionals and staff in inter-disciplinary service teams should be published to set out the specific roles of each professional for Project Operators to ensure efficient and coordinated service delivery.

(b) Measures to Overcome Environmental Constraints

23. From the qualitative data collected from both teachers and professionals, environmental constraints include:

(i) There is lack of training space in some KGs and little provision of a quiet room with suitable facilities or equipment to be used by the inter-disciplinary service teams in most of the schools.

(ii) Inter-disciplinary service teams face great difficulties in keeping their teaching aids and learning resources in the school campus but have to carry them in and out each time they visit schools.

(iii) The long travel distance between home/school and some off-site centres which provide supplementary training support for inter-disciplinary service teams creates disincentives for parents to bring their children to these centres.

24. To overcome the above-mentioned environmental constraints, it is proposed that:

(i) Establishment of mobile training centres with adequate equipment can be considered as an interim solution to overcome the lack of training space in schools and the inconvenience in bringing children to receive centre-based training. Mobile training centres could serve as an extension of schools (especially for schools with many cases or with limited spaces for on-site training, and when the schools are closed during holidays) to provide training for children and counselling sessions with parents/ families. Apart from table tasks training (e.g. fine motor skills and language skills training), it is suggested that the feasibility of installing equipment for some sensory integration training sessions in mobile training centres should be explored.

(ii) For planning purpose, consideration should be given to provide a training room in the future Schedule of Accommodation for the provision of OPRS when providing office bases for Project Operators, taking into account the proposed new output standard on centre-based training in paragraph 27 (i) below.

(iii) It is proposed that SWD should liaise with the Education Bureau (EDB) on the provision of basic space, furniture and equipment as appropriate and feasible for the OPRS multi-disciplinary service team.

(c) Strengthening of Parental Support

25. As family supporting and parenting style are important factors for children's improvement, it is recommended that :

(i) Extensive support should be provided to parents/primary carers in the family to enhance their knowledge of parenting children with special needs and help them cope with parenting stress. Project Operators are suggested to develop different means and strategies (such as training programmes, hotline services, home-based training support, internet-based resource corner, counselling service, connecting parents with community resources, self-help groups, etc.) to strengthen parent-child relationship, increase parenting knowledge, and enhance parenting self-efficacy, beliefs and practices. In a longer-term perspective, this model of resources compilation and sharing should be encouraged. Besides initiating and managing these resource centres by Project Operators, we also encourage parents who have gone through the treatment process to participate in managing such resource centres and continuing their connections with the service as volunteers.

(ii) It is worth exploring how the existing PRCs and the additional PRCs in the pipeline could help support children with special needs and their families through support services (including educational and support groups, talks, workshops, programmes and parent-child group trainings by professionals) in order to equip parents with knowledge and skills to enhance their acceptance and understanding of their children. PRCs may also provide these families with information of related social services, give them practical advice to get necessary services and refer them to receive relevant services as needed.

(iii) More efforts should be made by social workers in Integrated Family Service Centres (IFSC) to reach out high-risk parents

including those who have mental health issues and those who have difficulties in accepting their children's needs (e.g. the below average group in the case study).

(iv) Enhancement of services for the children and parents from the ethnic minorities in the community are also recommended in consideration that it is difficult for these children to access to service owing to their language differences.

(d) Strengthening of Support for Teacher

26. The current "collaborative partnership" between school teachers and on-site inter-disciplinary service teams should be stepped up for building teachers' competence to immerge concepts of identification and rehabilitation for children with special needs, as well as accommodation to the curriculum and classroom management. It is proposed that training for teachers to enhance pedagogical understanding and advanced competence in relating to parents and children with special needs should be enhanced. Examples of such training include: instructional strategies, evidence-based best practices on managing problem behaviors, skills to coach parents to enhance positive adult-child interaction. With competence in early identification, educational accommodation and liaising with professionals, parents and teachers, teacher's roles in supporting effective coordination and fidelity in implementing home-based, school-based and community-based training can be maximised to promote child learning and development.

(e) Adjustment of Output Standards

27. In light of operational experience set out in paragraphs 9-12, it is recommended that the following output standards adopted in the Pilot Scheme should be adjusted.

(i) Under the Pilot Scheme, the minimum number of centre-based training proposed by Project Operators is 8 - 23 hours per child per

year. As observed in paragraph 4, children's needs for centre-based training are subject to individual developmental conditions and it is not practical or meaningful to impose a minimum number of centre-based training hours for every child. It is noted from the study findings that Project Operators spent an average of 10 hours of centre-based training per year per child. Hence, it is proposed to spend around the same average number of hours overall but the inter-disciplinary service teams should assess and decide on the extent and number of centre-based training hours that each child should require, based on the child's developmental conditions.

(ii) Under the Pilot Scheme, the number of consultation sessions provided for teachers for each KG/KG-cum-CCC is 10 sessions per year and only consultation sessions lasting for at least two hours should be counted. To better suit the busy schedules of teachers, it is considered that the number of consultation sessions for teachers can be calculated on an average basis and the duration of the two hours of consultation session can be relaxed to 0.5 hours per session. In addition, more flexibility in the delivery mode of consultations, e.g. telephone consultation, is suggested.

(iii) Under the Pilot Scheme, the number of training and educational programmes provided for parents/ guardians/ carers is 2 programmes per year. Each training and educational programme must last for at least two hours. Given that the actual number of training/ programmes provided by Project Operators for parents ranged from 3 to 82 programmes per year under the Pilot Scheme, it is suggested that the Essential Output Standard of parent training should be increased to at least 6 programmes a year (i.e. on par with the training programmes for teachers).

Long-term Recommendations

28. It is noted that the Pilot Scheme will be regularized in 2018/19 school year and the number of service places will increase from 3 000 to 5 000 in 2018/19 school year and to 7 000 in 2019/20 school year. When the waiting time for pre-school rehabilitation services is substantively shortened, it is considered that there are opportunities for reviewing the positioning of on-site training and centre-based training as well as further enhancing the services of OPRS by leveraging on the strengths of other existing pre-school rehabilitation services.

(a) Pursuit of early assessment and intervention in the prime learning period

29. While research findings show that the optimal age for early intervention is 2-3 years old, most of the children with special needs currently begin to receive pre-school rehabilitation services from the age of 4 years old. To achieve the objective of early intervention, there is a need to speed up the assessment for children with special needs by the Child Assessment Service under the Department of Health, so that more children could start to receive appropriate services as early as practicable. In addition, when the waiting time for pre-school rehabilitation services is substantially shortened as a result of the regularization and possible further expansion of the OPRS and other pre-school services, the Government may explore refocusing the Early Education and Training Centre (EETC) service to serve children before the age of 3 in order to strengthen intervention before their admission to KGs. Other possible future directions worth exploring include implementation of complimentary support measures (e.g. procurement of premises as OPRS office bases cum training facilities, establishment of mobile training centres, etc) and interfacing between OPRS and EETC service.

(b) Enhancement of school-based social work support

30. The significance of parental support and involvement is validated by the evaluative study. Given that family and parental support is a key success factor for the Pilot Scheme on OPRS, social workers play an imperative role in identifying family in need of counselling and support, introducing and referring them for suitable assessment and welfare services in the community, and coordinating with the interdisciplinary service teams and the school personnel on follow-up support. However, there is currently no provision under the

OPRS for school-based professional social work support. It is noted that SWD will launch a new pilot scheme under which social work service will be introduced to provide in phase in all subsidized/aided KGs/KG-cum-CCCs/CCCs for early identification of and assistance to pre-primary children and their families with welfare needs; hence also covering students with special needs. It is worth exploring if the new pilot scheme can supplement OPRS in this aspect, and if so, the role and duties of the social worker teams under the new pilot scheme should be clearly defined to ensure coordinated service delivery between the two schemes.

(c) Introduction of a "Continuous Support Mechanism" for children who have made significant progress

31. After a substantial shortening of the waiting times for Child Assessment Centre (CAC) assessment and the EETC service being made available to most of the eligible children under the age of 3, there are merits of developing a "Continuous Support Mechanism" (CSM) that is commensurate with the actual training needs of the children who have made significant progress under pre-school rehabilitation services. Under the CSM, the rehabilitation services may be provided in the form of group training, targeted sessions on selective developmental domains, etc., in accordance with the assessment made by inter-disciplinary service teams in consultation with school teachers according to some pre-determined performance indicators for individual children. The advantages of the CSM are that training could be targeted for the most needed domains of the children concerned and that service places under the OPRS could be released for other Tier 2 children. To ensure that these children who have made significant progress are provided with sufficient and appropriate level of intervention, case conferences by the inter-disciplinary service teams with school teachers should be held periodically to review the progress of the children and to agree upon the revised training programme. A step-up or re-entry path should be established if children concerned are found to be in need of higher level of support from OPRS in the process.

(d) Transitional support for admission to Primary One

32. It is noted that SWD and EDB have worked out an information transfer arrangement between pre-school rehabilitation service units and primary schools, so that identified children under OPRS would continue to receive special attention and appropritate services when they proceed to primary education. In the longer term, it is considered that a longitudinal study may be conducted to track the developments of these children from young childhood to childhood after they proceed to Primary One, with a view to ascertaining whether bridging and support services need to be provided for these children, and if so, the appropriate form of such services.

Chapter 2 Introduction & Background of the Study

Introduction

33. The two-year Pilot Scheme on On-site Pre-school Rehabilitation Services (the Pilot Scheme) is a new initiative of the Government of the Hong Kong Special Administrative Region that has operated by phases since November 2015. Under the Pilot Scheme, inter-disciplinary service teams from the non-governmental organisations (NGO) offer on-site rehabilitation services to participating KGs/KG-cum-CCCs to provide early intervention to children who are on the waiting list for SWD subvented pre-school rehabilitation services. The Pilot Scheme will also provide professional advice for kindergarten teachers/child care workers to assist them in working with children with special needs, and render support to the parents/carers on fostering positive attitude and providing effective skills in raising their children with special needs. The Pilot Scheme aims at "testing out the delivery mode of on-site rehabilitation services for children with special needs who are attending KGs/KG-cum-CCCs by providing: (a) early intervention with children with special needs; (b) support for teachers/child care workers on knowledge and skills in identifying and working with children with special needs; and (c) support for parents/carers on positive attitude and effective skills in raising their children with special needs" (SWD, 2015). As at December 2017, 16 non-governmental organisations (Project Operators) operate a total of 29.25 teams and each team serves around 100 young children with special needs.

34. There is a set of eight essential output standards and one outcome standard to be achieved by the Project Operators in the Pilot Scheme as stipulated in Annex 2 entitled "Minimum Levels of Essential Output and Outcome Standards to Attain for Projects under the Pilot Scheme on On-site Pre-school Rehabilitation Services" dated July 2015 of the Consultancy Brief entitled "Consultancy Services for Evaluating the Pilot Scheme on On-site Pre-school Rehabilitation Services" issued by the Social Welfare Department in June 2016. An additional essential output standard on provision of centre-based training was included in the Pilot Scheme since the beginning of the Pilot Scheme in November 2015.

35. From November 2015 to December 2017, the Pilot Scheme has completed 26 months of operation. It has altogether provided rehabilitation services for 5,684 children with/suspected to have special needs and support services for their parents/carers and teachers/child care workers, covering more than 484 kindergartens(KGs)/kindergarten-cum-child care centres (KG-cum-CCCs) over the territory. The utilisation rate of OPRS has normally attained 100% or above from December 2016 to December 2017. The take-up rate as at end of December 2017 is 100.9%.

36. The Consultancy Services for Research on Evaluating the Pilot Scheme on On-site Pre-school Rehabilitation Services began in September 2016. The study aims at examining the cost-effectiveness and efficacy of the different components of the "Pilot Scheme on On-site Pre-school Rehabilitation Services", developing feasible and cost-effective model(s) to address the needs of pre-school children with special needs and recommending key parameters and essential output and outcome indicators to be adopted for the service model(s) to be regularised upon the completion of the Pilot Scheme.

Research Objectives

37. The eight research objectives of this study are stated below:

a. Identify the key features of the OPRS delivered by each NGO (16 organisations, 29.25 teams);
b. Examine the child outcomes of OPRS with a longitudinal approach and case studies of each special type at different severity levels;
c. Investigate the perspectives of NGO, school personnel and parents/carers involved in OPRS;
d. Analyze how the features of service delivery correlate with and predict child outcomes;
e. Formulate essential output and outcome indicators for regularisation of the OPRS;

f. Study how successful collaboration, optimal manpower and resources deployment are achieved between Project Operators and KGs/KG-cum-CCCs;
g. Conduct a literature review on three places, i.e. Australia, Taiwan and the U.S. tentatively, on preschool rehabilitation service provision;
h. Recommend a feasible and cost-effective rehabilitation service model to provide OPRS with research evidence of the above.

Completion of the Study

38. This final report is submitted in November 2018 and an interim report was submitted in late October 2017, both to report on key success factors and to make recommendations on feasible and cost-effective service model(s) on pre-school rehabilitation services. As at March 2018, there are 94 new cases and 306 old cases in the longitudinal study. There are 139 participants who had also completed Time 3 (T3) assessment (conducted around three months after case discharge). 97 case studies with parents' interviews, visits to school and centres were also reported. 420 completed questionnaires were collected from parents and 557 questionnaires from principals and teachers were collected from 278 participating kindergartens and kindergartens-cum-child care centres. Ten focus group interviews with 45 principals and teachers, and five focus group meetings with 24 parents were also conducted. We received 124 subjective evaluation questionnaires from 16 NGO chief administrators and 108 professionals (including speech therapists (ST), occupational therapists (OT), physiotherapists (PT), special child care workers (SCCW), social workers (SW), and clinical/educational psychologists (CP/EP)) of the Project Operators of the Pilot Scheme, with a response rate of 96.4%. We have conducted 15 focus group interviews with professionals of Project Operators. Thirty-two agency visits to the NGO operators were completed within the evaluation period.

39. Based on the findings of the above research tasks implemented, as well as data analysis of the information provided by Project Operators in their proposals, progress reports and statistical reports submitted to SWD, this final report will present a summary of observations and assessment on the basic research items as

stipulated in Annex C of the Consultancy Brief: (a) assessment of service delivery modes, (b) study of implementation of the Pilot Scheme with main findings from the longitudinal study, the case study, focus group interviews with parents and teachers, qualitative and quantitative feedback from the professionals and Project Operators, (c) literature review on three non-local places, (d) formulation of parameters for regularising the Pilot Scheme with reference to successful collaboration, optimal manpower and resources deployment, and recommendations for the current OPRS as early intervention services.

Chapter 3 Main Findings and Observations

Assessment of Service Delivery Modes

40. Project Operators are required to provide on-site individual/group training and on-site classroom observation, on-site professional consultation, talks/ workshops/ seminars and demonstration and telephone consultation for teachers as well as talks/workshops/seminars for parents. The services provided by the project team shall operate at least six days a week with a minimum of 48 hours per week and each team shall comprise the essential staff for the services, i.e. registered social worker (SW), qualified physiotherapist (PT), occupational therapist (OT), speech therapist (ST), clinical/educational psychologist (CP/EP), and special child care worker (SCCW). The minimal level of Essential Output and Outcome Standards Requirements to be met for one project team serving 100 children are set out below:

Output Standard	
Essential Output Indicator	**Minimum Level**
1. Number of children served[1] per quarter (EOS1)	100*
2. Number of children served per quarter who are waitlisting for subvented pre-school rehabilitation services (EOS2)	90
3. Average number of training hours delivered per child within one year (including centre-based training) (EOS3) 3a. Average number of training hours provided by therapists (OT, PT, ST) as proposed by operators (EOS3a) AOS. Minimum number of centre-based training proposed by operators (AOS)	60[2]
4. Number of training and educational programme[3] provided for parents/guardians/carers per year (EOS 4)	2

[1] Number of children served during a quarter = Number of children staying active in the service (active cases) on the last day of the quarter + Number of children who have left the service (closed cases) during the quarter.
*except for any project team serving mainly non-Chinese speaking children as approved by the Social Welfare Department.
[2] NGO proposed different agreed levels on EOS3a (ranging from 20-48) and AOS (ranging from 8-23)
[3] Each training and educational programme organised must last for at least two hours.

5.	Number of consultation sessions[4] provided for teachers for each KG/KG-cum-CCC per year (EOS5)	10
6.	Number of workshops/talks/programmes[5] provided per year for teachers on skills to work with children with special needs (EOS6)	6
7.	Rate of completing developmental assessment for each child within a period of six months[6] (EOS7)	95%
8.	Rate of achieving individual training plans within a period of six months[7] (EOS8)	95%
Outcome Standard		
Essential Outcome Indicator		**Minimum Level**
1	Rate of parents/guardians/carers being satisfied with the overall services delivered to the children in a year (EOC1)	80%

41. Individual NGO operators had committed to higher levels of OS/OCs. Moreover, each NGO operator also proposed different agreed levels for two other OS, i.e. the average no. of training hours provided by ST/OT/PT (EOS3a) and minimum no. of centre-based training hours delivered for each child in a year (AOS). Based on the statistics provided, the mean and standard deviation of the percentage of achievement for each OS/OCs are calculated for the second year. Table 1 shows the mean percentage of achievement of the essential output standards and the outcome standards.

[4] Each consultation session must last for at least two hours.
[5] Each workshop/talk/programme organised must last for at least three hours.
[6] Rate of completing developmental assessment for each child within a period of six months
(i) A developmental assessment required to be conducted by more than one specialist shall be counted as one developmental assessment.
(ii) Rate of completing developmental assessment for each child within a period of six months =

$$\frac{\text{Total number of developmental assessments completed in the period}}{\text{Total number of developmental assessments required in the period}} \times 100\%$$

[7] Rate of achieving individual training plans within a period of six months
(i) Achieving individual training plans refers to completion of the plans. The plan shall include objectives, specific goals, process of service delivery, programme content and time frame for achieving or reviewing goals.
(ii) Rate of achieving individual training plans within a period of six months =

$$\frac{\text{Total number of individual training plans completed in the period}}{\text{Total number of individual training plans required in the period}} \times 100\%$$

Table 1

Descriptive statistics of the mean percentage of achieving the essential output/outcome standards using figures in the second year

		EOS1_P	EOS2_P	EOS3_P	EOS3a_P	AOS1_P	EOS4_P	EOS5_P	EOS6_P	EOS7_P	EOS8_P	EOC_P
N	Valid	16	16	16	16	16	16	16	16	16	16	16
Mean		125.51	137.29	119.47	130.35	71.55	212.29	80.01	101.62	131.81	130.62	123.95
Median		102.5	113.33	119.19	133.14	76.77	181.25	100	100	119.016	119.74	125
Mode		100	111.11[a]	105.47[a]	92.48[a]	29.73[a]	150.00[a]	100	100	104.39[a]	104.39[a]	125
Std. Deviation		50.10	55.65	8.57	19.76	23.60	139.22	34.61	11.20	28.05	25.26	2.47
Minimum		100	103.33	105.47	92.48	29.73	100	0	66.67	104.39	104.39	117.65
Maximum		297	330	134.12	159.91	100	630.77	100	120	195.02	174.94	125
Percentiles	25	100	111.11	114.30	116.61	50.39	127.08	55	100	113.94	115.32	124.43
	50	102.5	113.33	119.19	133.14	76.77	181.25	100	100	119.02	119.74	125
	75	142.87	155.61	125.23	144.64	91.25	225	100	108.33	149.02	157.41	125

Note: a. Multiple modes exist. The smallest value is shown

Figures in red indicate the unmet standards

42. Eight out of 10 Essential Output Standards (EOS1 – number of children served per quarter, EOS2 – number of children waitees for subvented preschool rehabilitation services served per quarter, EOS3 – average number of training hours delivered to a child per year including centre-based training, EOS3a – average number of training hours delivered by therapists, EOS4 – number of training/educational programmes for parents/guardians/carers, EOS6 – number of workshops/talks/programmes for teachers, EOS7 - Rate of completing developmental assessment for each child within a period of six months, EOS8 - Rate of achieving individual training plans within a period of six months) have been achieved on average as indicated by the mean of percentage over 100. The following are analyses of the EOS.

Essential Output Standards 1 & 2

43. The average achievement percentage of serving 100 children (EOS1, M = 125.51, SD = 50.10) and among which 90 waiting for subvented preschool rehabilitation services (EOS2, M = 137.29, SD = 55.65) has currently indicated that on average Project Operators are able to meet the service target. All Project Operators can achieve EOS1 and EOS2.

44. All Project Operators were able to achieve their respective agreed levels of waitee children for subvented pre-school rehabilitation services (EOS2) in the second year. As this Essential Output Indicator is strongly related to the total number of children served, it is also affected by the 10% ceiling for children waiting for assessments from CACs to receive services under OPRS. There seems few vacancy to retain the ceiling because there are only three children waitees (2.3%) of Category III (children waitlisting for CAC assessment).

Essential Output Standard 3, 3a, AOS

45. The average achievement percentage of delivering 60 training hours to each child (EOS3, M = 119.47, SD = 8.57) and average training hours from therapists (EOS3a, M = 130.35, SD = 19.76) has been met.

46. EOS3 and EOS3a are calculated on an average basis. Project Operators can exercise flexibility to mobilise their resources and provide rehabilitation training to participating children according to their conditions and needs. All Project Operators have attained the agreed level.

47. The average achievement percentage of centre-based training hours (AOS, M = 71.55, SD = 23.60) has not been met. The performance of various percentiles is as follows: $M_{25\text{th percentile}}$ = 50.39%, $M_{50\text{th percentile}}$ = 76.77%; $M_{75\text{th percentile}}$ = 91.25%. All the Project Operators failed to achieve this standard. This output standard requires revision. Further analyses on how centre-based training hours are related to child outcomes will be reported in paragraphs 80-107.

48. Some Pilot Operators attributed their failure to parents' attitude toward centre-based training or parents' difficulty in bringing their children to the centres. Parents have indicated that the preferred service delivery mode was school-based training in the parent questionnaires as reported in paragraphs 205-240. More reasons for non-attendance in centre-based training are provided by the parents in the focus group interviews as described in paragraphs 140-204 and by the teachers in the focus group interviews in paragraphs 245-254.

49. From the statistics provided by the SWD, the centre-based peak periods were during summer vacations which may indicate either higher availability of parents to bring their children to the centres or higher availability of the centres deployed to provide the services. Project Operators which have been currently operating special child care centres or early education and training centres have mobilised different resources to offer centre-based services to children in the Pilot Scheme. Other Project Operators deployed financial resources to establish new centres usually provide more centre-based services to children and parents during summer vacations when both parents and children are more ready to take part. Project Operators have expressed strong concerns in the provision of centre-based services to each participating child

and in the calculation of centre-based training on an individual basis in the focus group interviews as reported in paragraphs 304 and 305.

Essential Output Standard 4

50. The greatest variance is found in EOS4 – number of training/programmes for parents/guardians/carers as indicated by the largest Mean percentage (*M* = 212.29) and largest standard deviation (*SD* = 139.22) with a maximum percentage (*M* = 630.77) and a minimum percentage (*M* = 100). The highest number of training/ programmes for parents/guardians/carers is 82 and the lowest is 3. All Project Operators can achieve this standard. This indicates that Project Operators have made tremendous effort in providing training programmes for parents/carers/guardians. It reflects strongly that the Project Operators have adopted family-centred value and invested resources to supporting parents/guardians/carers with special needs in early intervention. Views from parents are reported in paragraphs 205-240.

Essential Output Standard 5

51. The average achievement of consultation sessions with teachers (EOS5) is 80.01%, (*SD* = 34.61). The average number of consultation session is 8 sessions and a large range is observed (0-10 sessions). The performance of various percentiles is as follows: M_{25th} percentile = 55%, M_{50th} percentile = 100%, M_{75th} percentile = 100%. Based on the existing requirement that each consultation session must last for at least two hours, there is one Project Operator reporting a zero on consultation sessions. Although they do offer consultations to teachers in the participating kindergartens, the consultation hour is shorter than the requirement and cannot be counted as a completed session.

52. Eleven Project Operators achieved the agreed level of providing 10 consultation sessions each of two hours for each participating KG whereas five Project Operators failed to attain the agreed level in these two years. These

Project Operators expressed difficulties to provide consultation sessions lasting for at least two hours for teacher in KGs/KG-cum-CCCs. They suggested more flexibility in providing consultation, such as relaxing the duration for each session and calculating consultation sessions on an average basis instead of on a basis of each KG/KG-cum-CCC. The feedback collected from the NGO's subjective evaluation also indicated their request for more flexibility in the provision of consultation to teachers as stated in paragraphs 299 and 303.

53. Taking into consideration the above views and difficulties, the duration of the two hours of consultation session can be relaxed to 0.5 hours per session and a total number of teacher consultation hours can be calculated for each team on an average basis.

Essential Output Standard 6

54. The average achievement percentage of training programmes for teachers (EOS6, M = 101.62, SD = 11.20) has been reached. The average number of teacher programme is 7.66 and the mode is 6. All Project Operators are able to achieve this standard currently. Teacher views on training programmes are analysed in paragraphs 245-254 and the advantages of better trained teachers on early intervention and early childhood special education are reported in paragraphs 255-297.

Essential Output Standard 7

55. The percentage of completing developmental assessment for each child within six months is 131.81 (EOS7, M =131.81, SD = 28.05), surpassing the target standard of 95%. All Project Operators have attained the agreed output level. Conducting development assessment at least once every half year to keep track on the training progress and how the child responded to the intervention is a common practice adopted by Pilot Operators. Professionals and administrators rated high in the self-evaluative survey on the area of assessment. This finding is consistent with the focus group interviews of

parents in paragraphs 140-204 and the quantitative findings of the subjective evaluation assessment of Pilot Operators in paragraphs 299-303.

Essential Output Standard 8

56. The average percentage of achieving individual training plans within a period of six months is 130.62% (EOS8, *M* = 130.62, *SD* = 25.26), exceeding the target standard of 95%. All Project Operators were able to achieve the rate of 95% or above of achieving individual training plans in the second year. This finding can be cross-validated with parent comments in the case studies in paragraphs 108-132, and parent views in the focus group interviews in paragraphs 140-204.

Essential Outcome Standard

57. The percentage of satisfaction of parents/guardians/carers with the overall services is 123.95% (EOC, *M* = 123.95, *SD* = 2.47), surpassing the target standard of 80%. There is a very little difference in parental satisfaction among the Project Operators as indicated by the small value of *SD*. This Essential Outcome Indicator provides a platform to evaluate the performance of individual Pilot Operators from parents/guardians/carers' point of view. This finding is consistent with parent satisfaction level towards the Pilot Scheme as indicated in the questionnaires in paragraphs 205-240.

58. In all, regarding the service delivery mode as indicated by the current achievement of essential output and outcome standards, there is a strong need to amend the additional output standard of centre-based training and essential output standard of teacher consultation in the regularisation of the OPRS.

Special Features of Service Delivery Mode for Target Audience

59. With reference to the three target groups of audience served (children, parents and teachers) as stated in the objectives of the Pilot Scheme, the following is a summary and analysis of special features of the current service delivery mode of the Project Operators.

Training for Children

60. Collaborative intervention by multi-disciplines with strong involvement of school and parents are present in all service delivery modes adopted by the 16 Project Operators. All teams consist of professionals from multi-disciplines, i.e. SW, PT, OT, ST, CP/EP and SCCW which were required essential staff as indicated in the service specifications.

61. Project Operators had committed to providing an average of 60-68 training hours per child within a year. All Project Operators provided training in the form of group and individual training, delivered mostly by SCCW, OT, ST and PT. The number of training hours Project Operators committed to be provided by therapists, i.e. OT, ST and PT varied across different Project Operators. The average number of training hours provided by therapists per child for respective Project Operators ranged from 24 to 54.92 which exceeds with the range of 20-48 training hours committed by the Project Operators in their proposals. As at March 2018 and figures averaging for the previous four quarters, 57.81% of the total training hours received by participating children are provided by therapists.

62. Other than on-site training, Project Operators had also committed to providing a certain minimum number of centre-based training to each child participant, ranging from 8-23 hours per child in a year. We have examined 2872 cases which had completed one year of training as at December 2017. It is found that the number of centre-based training hours received by these participating children varied largely, with a large range from 0 to 100.5 hours. The mean number of centre-based training hour is 24.61. There were 74.6% of children who had achieved the minimum centre-based training hours and 25.4% who had not and some did not receive any centre-based training. They were either not in need of centre-based training or the parents expressed difficulties for them to attend. While most Project Operators provided centre-based training to children who were in need of sensory integration training and motor training of which larger equipment may be used, some

centre-based training was provided due to the lack of adequate space in the KGs for providing group training. Some Project Operators provided training in centres when the school closes during summer holidays. Monthly statistics of centre-based services indicated that the provision of centre-based training was at peak in July and August, i.e. during the summer holiday when the KGs/KG-cum-CCCs were closed. Certain Project Operators stationed their therapists in centres to make use of the Physiotherapy room, Speech therapy Room, Sensory Integration Room and Multi-sensory room with special equipment and sound-proof facilities. Some Project Operators made use of the natural environment of the KGs instead, e.g. playgrounds and Sensory Integration equipment in KGs, which may account for the variation in the number of centre-based training provided.

63. The relationship among the total number of training hours, the training hours provided by therapists, the training hours of centre-based services and the child outcomes are further examined in the longitudinal study in paragraphs 80-107.

Parents' Involvement in Children's rehabilitation

64. In addition to the provision of training and education programmes for the parents/guardians/carers under the Pilot Scheme, all Project Operators had actively engaged parents in the rehabilitation process of their children. All Project Operators involved parents by i) gathering information from parents for initial assessment of the children's condition; ii) including parents' views in the formulation of Individualised Training Programme (ITP) for the children; iii) regularly informing parents of the children's progress; iv) encouraging parents to join the children's training; and v) engaging parents in parent-child activities and self-help groups. The means and extent of involving parents in the above domains, however, may have some differences across respective Project Operators.

65. Project Operators adopted a variety of means in obtaining information from parents for assessing children's condition. All of them contacted parents for initial intake assessment, mostly by means of interviews and some by means of

home visits. Some Project Operators prepared questionnaires for parents to provide information on the family and children from different aspects.

66. Parents' views on ITP were gathered through contacts from staff of the project teams, including SW, SCCW and therapists, etc. Some Project Operators gathered information through the use of questionnaires. Certain Project Operators invited parents to join in meetings for discussion of ITP. Most Project Operators prepared copies of ITP for the parents' understanding of the training objectives and plans.

67. All Project Operators encouraged parents to observe training of their children. Parents were contacted regularly by phone calls, emails, whatsapp messages, interviews and meetings. Most of the Project Operators also informed parents on the children's progress through student handbooks, so that parents could learn about the training progress and participate in the training process.

Parents Training

68. Each project team serving 100 children were required to provide two training/ educational programmes to parents/guardians/carers each year. All Project Operators provided additional 27% to 530% programmes for parents. The talks and workshops mostly covered topics for parents to enhance their understanding to different types of disabilities and to equip them with the related skills and knowledge in helping their children. These topics include emotional development, language development and communication skills, social and behavioural problems, attention strengthening, home training, etc. Some talks and programmes aimed at refining parental skills and reducing their stress, these include programmes on positive parenting, stress management, etc. Some talks introduced relevant resources to parents, as well as assisted them in preparing the children's transition to primary education which was often a major concern for parents when the children discharged from the Pilot Scheme.

69. Most Project Operators provided homework and some prepared home

training packages for parents to extend the training to the home environment. Advice was given on ways of training children in home environment and the use of teaching aids which could be lent to parents for use. Some offered monthly consultation/ regular home visits to facilitate home-based training. A number of Project Operators also provided home modification and demonstration of training skills to parents at home.

70. Project Operators also provided a variety of services to alleviate the stress of the parents and to equip them with knowledge and skills in taking care of their children with special needs, including: counselling through telephone/ interview to provide emotional support, hotline services, referral for other community resources, district-based parents support groups to facilitate sharing of resources and mutual support, parent resources corner to provide resource, support groups and events for parents and caregivers, parent association for parents as platform for parents to establish mutual network, web-based Parents Resource Centre, toy and resource library, parent-child parallel group, post discharge follow up recommendation to expedite service transitions in primary school, etc. One NGO designed half-yearly individualised family support programme to support the family of children with special needs and further strengthen parental efficacy in early intervention.

Communication and Collaboration with KG-cum-CCCs

71. Close communication and collaboration among Project Operators and participating KGs was observed. All Project Operators provided briefing sessions, meetings/ visits with school personnel and/or school board members to introduce the project and recruitment procedures as well as to understand the KG's expectation and to foster recruitment of cases. Coordinated effort was made in the promotion of service to parents and identification of suitable cases for services, i.e. conducting parent talk in KGs, dissemination of letters and notices to parents, etc. Project Operators were invited for classroom observation and other school support services for identification of cases. Details of service information with regular updates were provided to KGs through various means including promotion leaflets, phone calls, emails,

website information, regular meetings and visits as well as information and resources files.

72. Some Project Operators designated SW/ SCCW as case managers/ designated contact persons for better communication with KGs. Some schools assigned designated teachers for coordination of training schedules, arrangement for consultation and training for teachers and logistic arrangements. Some schools designated a teacher who is responsible for matters relating to children with special needs, as the service coordinators, for better communication and coordination. One NGO who also operated the participating KGs involved a teacher to take up dual roles as a service coordinator between the KG and the team, as well as a trainer of the project team to facilitate more effective and efficient communication and exchange. The service coordinator in school was reported to help transfer the skills and knowledge to other teachers and to adopt better inclusive training to the classroom environment.

73. School personnel were also involved in the training process of the children. Project Operators collected information from schools for assessment of children's development. Most Project Operators distributed training plans to KGs and liaised with teachers regularly to explain results of assessment, collect concerns and opinions on training plan, explicate training plans to teachers and to solicit their assistance in incorporating the training into the school learning. Some Project Operators included teachers in the ITP formulation. For some Project Operators, teachers were invited to join training sessions. Different Project Operators prepared various types of information such as home-based training worksheet, progress training reports, overview of training records to be distributed to the concerned school personnel for information. For some Project Operators, special case meetings and consultation were held for cases which warranted special attention. Continuous feedback from school personnel was received through consultation, evaluation meeting and feedback questionnaires as well as on-going communication on children's performance and achievement of training plans. Some Project Operators required teachers to sign on training record sheets to monitor the progress of cases.

74. Consistent findings are yielded from the case studies in paragraphs 108-132, teacher focus group interviews in paragraphs 245-254, teacher questionnaires in paragraphs 255-297, and the focus group interviews with professionals in paragraphs 304 and 305.

Frequency and form of training for teachers

75. Each project team serving 100 children was required to provide six workshops/ talks/ programmes each of at least three hours to the teachers on skills to work with children with special needs per year. Moreover, 10 consultation sessions each of at least two hours should be provided to each participating KG in a year. For the teachers' programmes, the number of programmes provided ranged from 4 to 13. Most of the workshops and talks were tailor-made to enhance teachers' knowledge and skills, including the understanding and management of children with special developmental disabilities and special education needs. Qualitative details are provided in teacher focus group interviews in paragraphs 245-254.

76. Project Operators are required to provide consultation session for teachers in each KG/KG-cum-CCC, regardless of the number of cases in the KGs. There is no specific restriction on the format of consultation session. As the number of children receiving services in each KG/KG-cum-CCC may change from time to time, such arrangement guarantees that school personnel can still be equipped with necessary skills and knowledge and no KG/KG-cum-CCC will be deprived of professional advices and guidance, especially for those KGs/KG-cum-CCCs having no OPRS users but with a long waiting list of children with suspected special needs. Project Operators are allowed to exercise flexibility in providing consultation to teachers in a reasonable way. Five Project Operators failed to provide 10 consultation sessions to each KG a year, and the 16 Project Operators had provided an average of 7.7 consultation sessions to each KG. Consultation sessions were mostly in the form of telephone contacts, classroom observation, feedback on observations, in-class support and meeting with teachers for sharing and discussion. Teachers were encouraged to observe and join in the training sessions of the children.

However, in order to suit the time schedule of the schools, some consultation sessions lasted less than one hour and were not counted in the output delivered.

77. As indicated by the figures of achieving the output standard of teacher consultation, the number of consultation sessions and the duration of each consultation strongly need to be adjusted.

Other Value-added Services

78. In addition to the stipulated service requirement under the Pilot Scheme, Project Operators had provided other value-added services. These include: experiential learning activity, designated website to provide resources on the Pilot Scheme, hotline service for counselling, free assessment and referral services for suspected cases, free membership of the Integrated Children and Youth Services Centres, a therapy mobile centre (vehicle) provided by one NGO to facilitate the on-site visits as well as to provide additional training places for KGs with limited space for training, etc. Teacher views on the above value-added services are reported in paragraphs 255-297 and those of Project Operators in paragraphs 304 and 305.

Chapter 4 Study of Child Outcome

79. The study of child outcome include two parts: (a) a longitudinal study tracking the children's progress in the Scheme, and (b) case studies on children who have made improvement on an above average level and those on a below average level.

Longitudinal Study

Sampling Method of Longitudinal Study

80. Systematic sampling method for new cases and random sampling method for old cases were used to select children to participate in this study to ensure that every child has an equal chance of being selected and to avoid any selection bias. New cases are those cases joined OPRS less than 1 month and old cases are those cases joined OPRS for more than half year. Due to the time difference of about one year between the onset of the pilot scheme and beginning of the evaluation study, no control group could be retrospectively recruited. So the new cases served as an alternative group for comparison in the study. The final sample consisted of 400 children who completed both T1 and T2 assessments (94 new cases and 306 old cases), 162 children were recruited for a T3 assessment and 139 out of 162 were children who were discharged from OPRS for at least 3 months. It helps us to measure the sustainability effect of OPRS.

81. Data collected from each child included basic profile (age, gender, level and types of special needs), developmental assessment and progress (gross motor development, fine motor skills; cognition skills, social-emotional skills, language skills).

Play-based Assessment as Measurement

82. During the 1-hour play-based assessment session, an experimenter engaged the child in play scenarios and an independent rater observed the child's performance and rated according to their biological age. The items for rating cover the five major domains on evaluating young children's overall development. These domains are on: physical (gross and fine motor), language (receptive and

expressive), cognitive, social and emotional development. There are 24 items for all age each for both domain on gross motor and fine motor, and 25 items each for all ages for domain on cognitive, social and emotional development, and 23 items for all ages for domain on language. For scoring, each child rated on several age specific items from 0 (Not yet acquired) to 3 (Acquired) marks. Items in these domains for the current assessment are adapted similar to well-established standardised assessment measures (such as Psychoeducational Profile, PEP-3, Schopler & Lansing, 2004, translated by Heep Hong Society in 2006). The interrater reliability of the five domains for new and (old cases) are as follows: .949 (.947) for gross motor skills, .875 (.951) for fine motor skills, .759 (.946) for social and emotion skills, .803 (.893) for cognitive skills, and .850 (.918) for language skills. Statistically, any measurement with reliability coefficients above 0.70 is considered as acceptable and reliable. It is a reliable instrument as indicated by a high interrater reliability and the tool is used for all the cases with respect to their age though it is not a standardised measurement.

Main Findings of Longitudinal Study

83. The initial age of the participants children were ranging from 2.08 to 6.58 years old (*M*=4.39, *SD*=.93), 321 (75.7%) of them are boys and 103 (24.3%) are girls. Table 2 shows the frequency and percentage of disability types among these cases. The top three diagnoses on disability types of the cases in our sample are Speech impairment, Autism spectrum disorders and Borderline delay or Developmental delay. More than half of the cases were diagnosed with Speech impairment (and suspected) and almost half were diagnosed with Autism Spectrum disorders (and suspected). Almost one-third of the cases were diagnosed with Borderline delay or Developmental delay (and suspected). Around one-tenth of the cases were diagnosed with Global delay or Significant delay (and suspected), Intellectual disability (and suspected), and Attention deficit and hyperactivity disorder (and suspected). Few of them were diagnosed with Fine motor delay or Gross motor delay (and suspected), Physical disability, Cerebral Palsy, and Hearing impairment (and suspected). As at December 2017, majority of the cases (233/58.3%) are waiting for EETC while 101 (25.3%) cases are waiting for IP and 57 (14.3%) are waiting for SCCC. Only 9 (2.3%) cases are still waiting for CAC assessment. Length of stay in OPRS ranges from 43 to 737 days (*M*=451.88 days; *SD* =136.88).

The difference in months and days among assessment and service start day in OPRS is presented in Table 3. Time differences for T1 and T2 for new and old cases are about half year and five months respectively. Time differences for T1 and T3 for both cases are about 11 months and 8 months. The time differences of the T1 assessment and service start day in OPRS are 22.07 days for new cases and 287.57 days for old cases. In other words, the T1 playbased assessment was done within one month for the new cases after they joined OPRS and about 9 months for the old cases.

Table 2

Frequency and valid percent of diagnosis of the child in current sample

Diagnosis (In Descending order)	Frequency	Valid Percent
Speech Impairment (suspected cases)	220 (13)	58%
Autism spectrum disorders (Suspected cases)	136 (46)	45.5%
Borderline delay or Developmental delay (Suspected cases)	165 (2)	41.8%
Global delay or Significant delay (Suspected cases)	53(8)	14.1%
Intellectual disability (Suspected cases)	11 (22)	8.3%
Degree of Intellectual disability		
Low	30	7.5%
Moderate	2	0.5%
Attention deficit and hyperactivity disorder (Suspected cases)	17 (21)	9.6%
Fine motor delay (Suspected cases)	20 (5)	6.3%
Gross motor delay (Suspected cases)	14 (4)	4.5%
Visual Impairment (Suspected cases)	1 (2)	0.8%
Cerebral Palsy	1	0.3%
Physical disability (Suspected cases)	1 (1)	0.6%
Hearing impairment (Suspected cases)	1 (2)	0.8%

Note. Each case could have more than one diagnosis; Other Disability including autistic/ADHD features, social problem, at risk of Dyslexia and learning problem.

Table 3

Time Difference in months and days among assessment and service start day in OPRS

	N	*M*	*SD*
Time difference for T1 to T2 (in months)	94	5.93	1.05
	(306)	(5.12)	(6.13)
Time difference for T2 to T3 (in months)	30	5.20	1.35
	(109)	(3.2)	(.83)
Time difference for T1 to T3 (in months)	30	11.6	1.22
	(109)	(8.58)	(1.09)
Time difference for T1 and service start day in OPRS	94	22.07	14.28
(in days)	(306)	(287.57)	(124.75)
Time difference for T2 and service start day in OPRS	94	219.62	33.75
(in days)	(306)	(454.58)	(125.87)
Time difference for T3 and service start day in	30	382.57	63.57
OPRS(in days)	(109)	(580.20)	(113.31)
Length of stay in OPRS of the discharged case (in	30	264.03	52.55
days)	(109)	(454.73)	(117.71)

Note. Numbers in the parentheses are old cases

Comparison of Child Outcomes among Four Age Groups in New and Old Cases across Time 1 and Time 2

84. Four mixed model analysis of variance (ANOVA) across the four age group was used to test the main effect of time (T1 and T2), main effect of group (New and Old case group) and the interaction effect (Time x Group) of the following developmental domains: gross motor, fine motor, cognitive skills, socio-emotional skills and language skills. The statistical comparisons were conducted within a matched age group among new and old cases.

Age Group 1 (2-3 years old)

85. For the age group 1 (2-3 years old), there are significant main effect of time, $F(5,32) = 5.313$, $p < .001$ partial $\eta^2 = .454$ of gross motor skills, fine motor skills, social emotional skills and cognitive skills as reported in Table 4. It means both

group has significant difference in scores in T1 and T2 in these domains. Bonferroni corrected post hoc tests showed that the scores in these domains of both groups are significant higher in T2 than T1 (Mean difference ranging from .346 to .604, $p < .05$~.000). Besides, there are significant interaction effects between time and groups, $F(5, 32) = 2.833$, $p < .05$ partial $\eta^2 = .307$. The effect showed that both groups had different degree of changes in scores of the domains across T1 and T2. Bonferroni corrected post hoc tests showed that the scores in gross motor skills, fine motor skills, social and emotional skills and cognitive skills are significantly higher in T2 than T1 (Mean difference ranging from .374 to .854), $p < .05$~.000. Specifically, new group performed significantly better in gross and fine motor skills, cognitive skills in T2 assessment whereas old cases performed significantly better in social and emotional skills in T2 assessment. This reflected social and emotional skills required a longer intervention period for significant gains, at least 15 to 18 months. For new cases, intervention effects are more obvious in cognitive and motor skills.

Table 4

Interaction effect of Time and Group for Age Group 1 (2-3 Years Old)

	New cases				Old cases			
	N=27				*N*=11			
	T1	T2	Mean Difference	Sig	T1	T2	Mean Difference	Sig
Gross motor	.881	1.734	-.854	***	1.399	1.754	-.355	
Fine motor	1.791	2.152	-.362	*	1.940	2.389	-.449	
Social and emotional	1.994	2.000	-.007		1.733	2.381	-.648	*
Cognitive	1.832	2.206	-.374	*	1.831	2.148	-.318	
Language	1.409	1.700	-.291		1.717	2.066	-.350	

Note. Mean Difference (T2 minus T1), * $p < .05$, ** $p < .01$, *** $p < .001$

Age Group 2 (3-4 years old)

86. For the age group 2 (3-4 years old), there are significant main effects of time, $F(5,107) = 8.833$, $p < .001$, partial $\eta^2 = .292$ in all domains as seen in Table 5. It means both group has significant differences in scores in T1 and T2 in all domains.

Bonferroni corrected post hoc tests showed that the scores in these domains of both groups are significant higher in T2 than T1 (Mean difference ranging from .165 to .473, $p < .05$~.000). Besides, there are significant interaction effect between time and groups, $F(5, 107) = 4.450$, $p < .000$, partial $\eta^2 = .172$. The effect showed that both groups had different degree of changes in scores of the domains across T1 and T2. Bonferroni corrected post hoc tests showed that the scores are significantly higher in T2 than T1 (Mean difference ranging from .259 to .499), $p < .05$~.000. Specifically, the old cases performed significantly better in all domains in T2 assessment whereas new cases performed significantly better only in gross motor skills in T2 assessment. For the 3-4 years old group, children who received intervention for 15 to 18 months had significant gains in all areas and children who received intervention around 6 months only scored significantly higher in one domain, i.e. gross motor skills.

Table 5

Interaction Effect of Time and Group for Age Group 2 (3-4 Years Old)

	New cases				Old cases			
	N=36				*N*=77			
	T1	T2	Mean Difference	Sig	T1	T2	Mean Difference	Sig
Gross motor	1.686	2.160	-.473	***	1.731	2.205	-.474	***
Fine motor	2.253	2.323	-.071		2.147	2.406	-.259	**
Social and emotional	2.153	2.175	-.023		1.996	2.495	-.499	***
Cognitive	2.050	2.207	-.158		2.107	2.465	-.358	***
Language	2.058	2.026	-.032		1.869	2.312	-.443	***

Note. Mean Difference (T2 minus T1), * $p < .05$, ** $p < .01$, *** $p < .001$

Age Group 3 (4-5 years old)

87. For the age group 3 (4-5 years old), there are significant main effects of time, $F(5,142) = 18.039$, $p < .001$, partial $\eta^2 = .388$ of gross motor skills, social emotional skills, cognitive skills and language skills as listed in Table 6. It means both groups have significant differences in scores in T1 and T2 in these domains. Bonferroni corrected post hoc tests showed that the scores in these domains of both

groups are significant higher in T2 than T1 (Mean difference ranging from .131 to .407, $p < .05$~.000). Besides, there are significant interaction effects between time and groups, $F(5, 142) = 9.883$, $p < .000$, partial $\eta^2 = .258$. The effect showed that both groups had different degree of changes in scores of the domains across T1 and T2. Bonferroni corrected post hoc tests showed that the scores are significantly higher in T2 than T1 (Mean difference ranging from .156 to .550), $p < .05$~.000. Specifically, the old cases performed significantly better in all domains in T2 assessment whereas new cases performed significantly better only in cognitive skills in T2 assessment. For the 4-5 years old group, children who received intervention for 15 to 18 months had significant gains in all areas and children who received intervention about 6 months scored significantly higher in one domain only, i.e. cognitive skills.

Table 6

Interaction Effect of Time and Group for Age Group 3 (4-5 Years Old)

	New cases				Old cases			
	N=24				*N*=124			
	T1	T2	Mean Difference	Sig	T1	T2	Mean Difference	Sig
Gross motor	2.358	2.574	-.216		2.208	2.584	-.375	***
Fine motor	2.692	2.737	-.045		2.529	2.685	-.156	***
Social and emotional	2.654	2.666	-.012		2.426	2.677	-.251	***
Cognitive	2.253	2.803	-.550	***	2.469	2.733	-.264	***
Language	2.607	2.723	-.116		2.353	2.682	-.330	***

Note. Mean Difference (T2 minus T1), * $p < .05$, ** $p < .01$, *** $p < .001$

Age Group 4 (5 years old or above)

88. For the age group 4 (5 years old or above), there are significant main effect of time, $F(5,95) = 9.637$, $p < .001$, partial $\eta^2 = .337$ of gross motor skills, social and emotional skills, cognitive skills and language skills as reported in Table 7. It means both groups have significant differences in scores in T1 and T2 in these domains. Bonferroni corrected post hoc tests showed that the scores in these domains of both groups are significant higher in T2 than T1 (Mean difference

ranging from .261 to .337, p < .001~.000). Besides, there are significant interaction effect between time and groups, $F(5, 95) = 3.578$, p <.000, partial η^2 = .158. The effect showed that both groups had different degree of changes in scores of the domains across T1 and T2. Bonferroni corrected post hoc tests showed that the scores are significantly higher in T2 than T1 (Mean difference ranging from .140 to .527), p < .001~.000. Specifically, the old cases performed significantly better in all domains except fine motor skills in T2 assessment whereas new cases performed significantly better only in cognitive skills and language skills in T2 assessment. For the group above 5 years old, children who received intervention for 15 to 18 months had significant gains in four domains and children who received intervention around 6 months scored significantly higher in two domains (cognitive and language).

Table 7

Interaction Effect of Time and Group for Age Group 4 (above 5 years old)

	New cases				Old cases			
	N=7				*N*=94			
	T1	T2	Mean Difference	Sig	T1	T2	Mean Difference	Sig
Gross motor	2.506	2.664	-.158		2.449	2.723	-.274	***
Fine motor	2.828	2.842	-.014		2.793	2.807	-.014	
Social and emotional	2.646	2.786	-.140		2.554	2.738	-.183	***
Cognitive	2.336	2.864	-.527	***	2.667	2.799	-.132	***
Language	2.546	2.918	-.372	**	2.593	2.798	-.205	***

Note. Mean Difference (T2 minus T1), * p < .05, ** p < .01, *** p < .001

Maintenance Effect of Child Outcomes Across Time 1, Time 2 and Time 3

89. Repeated measure ANCOVA was used to test the main effect of time and whether the five development domains of those discharged cases changes significantly across time and the sustainability of the effect after they were discharged from OPRS. Results showed there are significant main effects of time when controlling the effect of age for all domains, $F(10, 128) = 6.355$, p <.001, partial η^2 = .332, as listed in Table 8. Bonferroni corrected post hoc tests showed

that the scores in of all domains are significantly higher in T2 than T1, in T3 and T1. For T2 and T3, results showed that only differences among social and emotional skills and language skills are significant. It means in these two domains significant increases in scores are observed from T2 to T3. Even though the effect of gross motor skills, fine motor skills and cognitive skills did not significantly increase after the cases were discharged, all of the scores of the domains in T3 are still significantly higher than T1. In other words, the effect of the OPRS could sustain at least 3 months after the child discharged from the scheme.

Table 8

Maintenance Effect with Mean Scores on all Domains across Time 1, Time 2 and Time 3

N=139	T1	T2	Sig	T2	T3	Sig	T1	T3	Sig
Gross motor	2.163	2.574	***	2.574	2.639		2.163	2.639	***
Fine motor	2.506	2.662	**	2.662	2.698		2.506	2.698	***
Social and emotional	2.346	2.651	***	2.651	2.735	*	2.346	2.735	***
Cognitive	2.399	2.706	***	2.722	2.703		2.399	2.722	***
Language	2.312	2.650	***	2.650	2.736	**	2.312	2.736	***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

90. The quantitative results have indicated that children have improved significantly on all domains across the three time points. The optimal age for early intervention is 2-3 years old and strong maintenance effects on all the developmental domains are evident when children progressed in the Pilot Scheme.

Comparison of Child Outcomes among Professional Training Hour Groups in New and Old Cases

91. Training hours of both new and old cases were provided by Project Operators as at February 2018. Table 9 shows the descriptive statistics of training hours for duration of 2 years and 2 months, and training hours per month in the Pilot Scheme.

Table 9

Descriptive statistics of training Hours from 11/2015 to 2/2018

Hours (*n*=400)	*M*	*SD*
Total School training hours	63.5359	33.9123
Total Centre training hours	35.2748	29.5333
Total Home training hours	0.1081	0.4934
Total training hours	98.9188	41.6978
Total training hours by ST	29.2805	16.9726
Total training hours by OT	14.3238	9.5923
Total training hours by PT	6.1988	7.4770
Total training hours by SCCW	47.6012	25.6860
Total training hours by Psychologist	0.0150	0.2234
Total training hours by Social worker	1.4996	5.6401
Hours per month (Total hours / Length of Stay in Month of each case) (*n*=400)	*M*	*SD*
Total School training hours	4.0273	1.6748
Total Centre training hours	2.2051	1.6660
Total Home training hours	0.0070	0.0340
Total training hours	6.2394	1.6642
Total training hours by ST	1.8331	0.8721
Total training hours by OT	0.9021	0.5382
Total training hours by PT	0.3925	0.4373
Total training hours by SCCW	3.0147	1.2282
Total training hours by Psychologist	0.0009	0.0136
Total training hours by Social worker	0.0962	0.3454

Comparison of median split group of professional training hours

92. Four Mixed model analysis of variance (ANOVA) used to test the main effect of time (T1 and T2), main effect of groups (New and Old case group and therapist training hours group) and the interaction effect (Time * Group) of the following developmental domain: gross motor, fine motor, cognitive skills, socio-emotional skills and language skills. Training hours by each therapist split into two groups by the median of training hours provided to each child per month. In our sample, the median of training hours provided by ST, OT, PT and SCCW per month are 1.6508, 0.8455, 0.2237 and 2.88 respectively.

About Speech Therapist Training Hours and Child Outcome on Language skills

93. Results showed that a significant interaction effect between Time, New and Old case group and therapist training hours group, $F(1, 395) = 4.007$, $p < .05$ partial $\eta^2 = .01$. Results from the Bonferroni corrected post hoc tests showed that both lower and higher than median group for the Old case had a significant increase in mean score in language skills from T1 to T2 (mean difference 0.399 for lower median group and 0.279 for higher median group). No significant increase in mean score of language skills from T1 to T2 for both lower and higher median group for new cases.

94. Regardless of high training hours and low training hours, only old cases had significantly improved in language skills, no significant result was found in new cases. Since both groups had significantly increased in the mean scores, it could imply the operators allocated training hours according to the children needs.

About Occupational Therapist Training Hours and Child Outcome on Motor Skills

95. Results indicated a significant main effect of time but no significant interaction effect of time and group. There are significant main effect of time, $F(2,394) = 30.625$, $p < .001$ partial $\eta^2 = .135$ of gross and fine motor skill. Bonferroni corrected post hoc tests showed that the sample had a significant increase in mean score of gross and fine motor skills from T1 to T2 (mean difference 0.405 for gross motor skills and 0.118 for fine motor skills).

96. All cases regardless of high training hours and low training hours or new and old cases had significantly improved in gross and fine motor skills. It might imply the operators allocated training hours according to the children needs.

About Physiotherapist Training Hours and Child Outcome on Motor Skills

97. Findings showed a significant main effect of time but no significant interaction effect of time and group. There are significant main effect of time, F (2,394) = 29.563, p<.001 partial η^2 = .130 of gross and fine motor skill. In general for both high and low median group and new and old case group, Bonferroni corrected post hoc tests showed that the sample had had a significant increase in mean score of gross and fine motor skills from T1 to T2 (mean difference 0.404 for gross motor skills and 0.120 for fine motor skills).

98. All cases regardless of high training hours and low training hours or new and old cases had significantly improved in gross and fine motor skills. It might imply the operators allocated training hours according to the children needs.

About Special Child Care Worker Training Hours and Child Outcome on all Domains

99. Results showed a significant interaction effect of time and therapist training hours group in cognitive skills, F(1, 395) =4.517 , p<.05 partial η^2 = .01, social skills , F(1, 395) =5.293 , p<.05 partial η^2 = .01 and language skills, F(1, 395) =4.954 , p<.05 partial η^2 = .01. Bonferroni corrected post hoc tests showed that there are no significant differences in mean score of those skills for both therapist training hours group in T1, but the higher median training hours group had significant higher mean scores than lower median training hours group in T2. The mean differences of both groups in cognitive skills, social skills and language skills are 0.121, 0.126 and 0.152 respectively.

100. The higher therapist training hour group performed better in T2 in cognitive, social and language skills. Regardless of new or old cases group, it could imply that more training hours by SCCW would be positively affected the special needs

children in cognitive, social and language development over time. It might also imply the operators allocated training hours according to the children needs.

Comparison of Child Outcomes among Centre-based Training Hour Groups in New and Old Cases

101. Centre-based training hours of all 400 cases were provided by Project Operators included training hours for (A) Specific training to children that must be performed in centre with required facilities (e.g. gross motor training, Sensory Integration training). (B) Training for children that must be performed in Centre (other than (A)) to meet children's need (e.g. group training/ social training). Training provided in centres due to other considerations (due to operational difficulties/ long vacation or limited space of KGs) and training hours provided in centres for fulfilling minimum OS requirements only accounted for 11.4% of the overall centre based hours and these hours are excluded in the following analysis.

102. Table 10a shows the descriptive statistics of centre-based training hours (A and B) per month and per year. The mean of centre-based training hours per year is 17.5, the median is 10.6 and the mode is 0, indicating that there are children who do not have and may not need any centre-based training hours due to related operational difficulties and different need assessments as reported by different Project Operators. Since there is a large range of centre-based training hours (0-100 hours per year), the median (10.6 hours) and mode (0 hour) should also be taken into account. The median of 10.6 hours may be more useful in informing us about the optimal number of centre-based hours for each child.

Table 10a

Descriptive statistics of centre-based training hours (A and B) per month and year

	Centre-based training hours (A and B) per month	Centre-based training hours (A and B) hours per year (12 months)
Mean	1.4586	17.5027
Median	.8838	10.6056
Mode	0	0
SD	1.59582	19.14988
Percentiles 25	.1638	1.9660
Percentiles 50	.8838	10.6056
Percentiles 75	2.1845	26.2135

103. Based on the percentiles, the centre-based training hours of all cases were divided evenly into four groups for further analysis. Table 10b shows the descriptive statistics of centre-based training hours (A and B) per month and per year of the four groups.

Table 10b

Centre based Training Hours (A and B) per Month and per Year in 4 Groups

	Hours per month	Hours per year (12months)
Group 1 (*n* = 99)	0-0.1638	0-1.966
Group 2 (*n* = 101)	0.1638 – 0.8838	1.966 -10.6056
Group 3 (*n* = 100)	0.8838 -2.1845	10.6056-26.2135
Group 4 (*n* = 100)	2.1845 – 8.39	26.2135-100.73

104. Mixed model analysis of variance (ANOVA) used to test the main effect of time (T1 and T2), there was a main effect of groups (New and Old case group and Centre-based training hours group) and an interaction effect (Time * New and Old case group * Centre-based training hours group) of the following developmental domain: gross motor, fine motor, cognitive skills, socio-emotional skills and language skills. A significant interaction effect was found for Time * New and Old case group * Centre-based training hours group ($F(5, 387) = 3.014$, $p < .05$ partial $\eta^2 = .04$ to $F(5, 387) = 15.020$, $p < .00$ partial $\eta^2 = .163$). Table 11 summarises the significant findings in the old cases across all domains regardless of variations in centre-based training hours. Results showed that regardless of the centre-based training hours, all groups for the Old cases received school-based OPRS training for approximately one year had significantly improved in all domains. No such clear pattern was observed among the four groups in the new cases. The results may indicate that centre-based training hours were assigned based on a child-centred principle, i.e. according to the children's special needs. Although the current AOS requires a minimum amount of centre-based training proposed by the Project Operators, the professionals have provided centre-based training based on the assessment and developmental needs of individual child. The calculation of centre-based training hours by an average basis may be more flexible and meet the needs of individual child.

Table 11

Child Outcomes of the 4 Centre-based Training Groups in New and Old Cases

		New			Old	
Gross Motor	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 23; n_{Old} = 76)	1.983	2.362	**	2.216	2.528	***
Group 2 (n_{New} = 27; n_{Old} = 74)	1.859	2.179	**	2.019	2.476	***
Group 3 (n_{New} = 27; n_{Old} = 73)	1.795	2.443	***	2.0007	2.399	***
Group 4 (n_{New} = 17; n_{Old} = 83)	2.167	2.432	.056	1.999	2.403	***
		New			Old	
Fine Motor	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 23; n_{Old} = 76)	2.709	2.387	**	2.518	2.660	*
Group 2 (n_{New} = 27; n_{Old} = 74)	2.472	2.519	.642	2.476	2.669	**
Group 3 (n_{New} = 27; n_{Old} = 73)	2.279	2.613	**	2.381	2.549	**
Group 4 (n_{New} = 17; n_{Old} = 83)	2.414	2.636	.086	2.369	2.551	**
		New			Old	
Cognitive	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 23; n_{Old} = 76)	2.175	2.539	**	2.511	2.677	*
Group 2 (n_{New} = 27; n_{Old} = 74)	2.137	2.478	**	2.377	2.684	***
Group 3 (n_{New} = 27; n_{Old} = 73)	2.262	2.559	**	2.363	2.569	**
Group 4 (n_{New} = 17; n_{Old} = 83)	2.258	2.523	.057	2.247	2.589	***
		New			Old	
Social and Emotional	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 23; n_{Old} = 76)	2.537	2.326	.085	2.439	2.621	**
Group 2 (n_{New} = 27; n_{Old} = 74)	2.375	2.385	.930	2.261	2.679	***
Group 3 (n_{New} = 27; n_{Old} = 73)	2.324	2.425	.377	2.214	2.559	***
Group 4 (n_{New} = 17; n_{Old} = 83)	2.527	2.450	.585	2.226	2.580	***
		New			Old	
Language	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 23; n_{Old} = 76)	2.345	2.397	.693	2.336	2.591	***
Group 2 (n_{New} = 27; n_{Old} = 74)	2.279	2.335	.638	2.231	2.607	***
Group 3 (n_{New} = 27; n_{Old} = 73)	2.245	2.271	.832	2.200	2.504	***
Group 4 (n_{New} = 17; n_{Old} = 83)	2.108	2.412	*	2.116	2.505	***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Comparison of Child Outcomes among Centre-based Training Hour Groups in New and Old Cases with Speech impairment and/or Autism spectrum disorders

105. Since the majority of the cases in the sample were diagnosed as speech impairment and/or Autism spectrum disorders, further analysis was used to test the performance of the cases in different centre-based hours group. Mixed model analysis of variance (ANOVA) used to test the main effect of time (T1 and T2), there was a main effect of groups (New and Old case group and Centre-based training hours group) and an interaction effect (Time * New and Old case group * Centre-based training hours group) of the following developmental domains: gross motor, fine motor, cognitive skills, socio-emotional skills and language skills.

106. Mixed model analysis of variance (ANOVA) used to test the main effect of time (T1 and T2), there was a main effect of groups (New and Old case group and Centre-based training hours group) and an interaction effect (Time * New and Old case group * Centre-based training hours group) of the following developmental domains: gross motor, fine motor, cognitive skills, socio-emotional skills and language skills. For both speech impairment and Autism spectrum disorders group, a significant interaction effect was found for Time * New and Old case group * Centre-based training hours group ($F(5, 123) = 2.404$, $p < .05$ partial $\eta^2 = .089$ to $F(5, 123) = 5.894$, $p < .000$ partial $\eta^2 = .193$). Table 11b and 11c summarises the findings across all domains regardless of variations in centre-based training hours. For speech impairment group, results showed that regardless of the centre-based training hours, all groups for the Old cases received school-based OPRS training for approximately one year had significantly improved in gross motor, social and emotional, and language skills. No such clear pattern was observed among the new cases. Similarly, for autism spectrum disorders group, centre-based training hours group 2 to 4 for the Old cases received school-based OPRS training for approximately one year had significantly improved in gross motor, social and emotional, and language skills and no such clear pattern was observed among the new cases.

107. These results have two implications. First, it was indicated that the effectiveness of different level of centre-based training hours on children outcome for cases with different diagnosis like speech impairment and autism spectrum disorders. Second, centre-based training hours were assigned based on a child-centred principle, i.e. according to the children's special needs. Although the current AOS requires a minimum amount of centre-based training proposed by the Project Operators, the professionals have provided centre-based training based on the assessment and developmental needs of individual child. The calculation of centre-based training hours by an average basis could be more flexible and meet the needs of individual child.

Table 11b

Child Outcomes of the 4 Centre-based Training Groups in New and Old Cases with Speech Impairment

		New			Old	
Gross Motor	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 17; n_{Old} = 50)	1.936	2.328	**	2.304	2.587	***
Group 2 (n_{New} = 13; n_{Old} = 49)	1.777	2.215	**	1.915	2.448	***
Group 3 (n_{New} = 12; n_{Old} = 34)	2.033	2.621	***	1.994	2.423	***
Group 4 (n_{New} = 8; n_{Old} = 37)	2.059	2.481	*	1.947	2.316	***
		New			Old	
Fine Motor	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 17; n_{Old} = 50)	2.665	2.267	**	2.543	2.692	*
Group 2 (n_{New} = 13; n_{Old} = 49)	2.586	2.650	.643	2.424	2.647	**
Group 3 (n_{New} = 12; n_{Old} = 34)	2.372	2.635	.073	2.427	2.621	*
Group 4 (n_{New} = 8; n_{Old} = 37)	2.444	2.662	.218	2.405	2.491	.294
		New			Old	
Cognitive	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 17; n_{Old} = 50)	2.222	2.466	.078	2.686	2.707	.130
Group 2 (n_{New} = 13; n_{Old} = 49)	2.095	2.696	***	2.355	2.672	***
Group 3 (n_{New} = 12; n_{Old} = 34)	2.251	2.622	*	2.434	2.585	.121
Group 4 (n_{New} = 8; n_{Old} = 37)	2.356	2.570	.287	2.201	2.528	**
		New			Old	
Social and Emotional	Time1	Time2	Sig	Time1	Time2	Sig

Group 1 (n_{New} = 17; n_{Old} = 50)	2.475	2.262	.114	2.487	2.659	*
Group 2 (n_{New} = 13; n_{Old} = 49)	2.526	2.538	.936	2.233	2.712	***
Group 3 (n_{New} = 12; n_{Old} = 34)	2.364	2.489	.438	2.245	2.583	***
Group 4 (n_{New} = 8; n_{Old} = 37)	2.479	2.540	.752	2.207	2.560	***
		New			Old	
Language	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 17; n_{Old} = 50)	2.260	2.305	.766	2.415	2.616	*
Group 2 (n_{New} = 13; n_{Old} = 49)	2.561	2.426	.433	2.225	2.617	***
Group 3 (n_{New} = 12; n_{Old} = 34)	2.506	2.341	.361	2.227	2.505	**
Group 4 (n_{New} = 8; n_{Old} = 37)	2.226	2.492	.223	2.114	2.455	**

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 11c

Child Outcomes of the 4 Centre-based Training Groups in New and Old Cases with Autism spectrum disorders

		New			Old	
Gross Motor	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 7; n_{Old} = 21)	2.100	2.431	.180	2.137	2.343	.152
Group 2 (n_{New} = 8; n_{Old} = 21)	1.608	1.727	.608	2.030	2.471	**
Group 3 (n_{New} = 8; n_{Old} = 27)	1.234	2.168	***	1.841	2.112	*
Group 4 (n_{New} = 7; n_{Old} = 37)	1.940	2.152	.401	1.981	2.279	**
		New			Old	
Fine Motor	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 7; n_{Old} = 21)	2.852	2.676	.434	2.426	2.546	.358
Group 2 (n_{New} = 8; n_{Old} = 21)	2.156	2.103	.806	2.482	2.636	.241
Group 3 (n_{New} = 8; n_{Old} = 27)	1.583	2.538	***	2.294	2.381	.443
Group 4 (n_{New} = 7; n_{Old} = 37)	1.834	2.394	*	2.346	2.467	.221
		New			Old	
Cognitive	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 7; n_{Old} = 21)	2.171	2.526	.135	2.349	2.558	.128
Group 2 (n_{New} = 8; n_{Old} = 21)	2.147	2.038	.626	2.333	2.634	*
Group 3 (n_{New} = 8; n_{Old} = 27)	1.949	2.140	.417	2.209	2.358	.214
Group 4 (n_{New} = 7; n_{Old} = 37)	1.908	2.182	.257	2.205	2.470	*
		New			Old	

Social and Emotional	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 7; n_{Old} = 21)	2.328	2.311	.944	2.242	2.401	.250
Group 2 (n_{New} = 8; n_{Old} = 21)	2.113	1.901	.346	2.252	2.534	*
Group 3 (n_{New} = 8; n_{Old} = 27)	2.118	2.097	.932	1.982	2.332	**
Group 4 (n_{New} = 7; n_{Old} = 37)	2.494	2.226	.272	2.248	2.480	*
		New			Old	
Language	Time1	Time2	Sig	Time1	Time2	Sig
Group 1 (n_{New} = 7; n_{Old} = 21)	2.425	2.323	.689	2.089	2.346	.084
Group 2 (n_{New} = 8; n_{Old} = 21)	1.800	1.827	.913	2.105	2.416	*
Group 3 (n_{New} = 8; n_{Old} = 27)	1.653	1.633	.939	1.851	2.153	*
Group 4 (n_{New} = 7; n_{Old} = 37)	1.722	1.959	.363	2.064	2.352	*

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Case Study of Child Outcome

108. The objectives of case study are to look into individual and ecological factors leading to the above/below average performance in these cases and to examine what strategies have been used to work with these cases (e.g. intervention used, ways to engage parents/guardians/carers, community resources used, etc.) and how effective those strategies were. The qualitative questions are analysed to identify the main themes that underlie the responses from the case workers, school representatives and parents/guardians/carers. Sample questions included: how do you understand the child's developmental level/special needs (for parents/carers), what accommodations in the classroom or in the school facilities are offered (for teachers/administrators).

Methodology

109. A total of 97 cases (74 male and 23 female) participated in the case study. Among the cases, the OPRS services began as early as in December 2015, and the latest discharge case left the services in the end of August 2016. These cases were nominated by professionals of Project Operators based on a set of selection criteria. 54 cases were in the "above-average" group and 43 in the "below-average" group.

110. As the research team aimed to look for contributing factors in the supporting system for the above average and below average cases, play-based assessment in the longitudinal study was substituted by the assessment results in the intake stage as well as the recent one provided by the project operators so that the research team could have a better understanding of the development of the case in OPRS.

111. Each case study includes case background information and profile provided project operators including diagnosis, training hours received for both school based and centre based training, services hours provided by different therapist, standardised or non-standardised assessment results done by therapist as well as their comments on the case's performance. On top of that, the research team arranged parents' interview to all cases. School/ centre visits are only arranged on selective basis especially for those below average cases or outstanding cases.

Main Findings

112. All of the 97 cases completed parent interviews as well as comprehensive review on the case background and profile provided by the Service Operator. The demographic details of the cases are presented in Table 12 and the training details in Table 13.

Table 12

Demographic Characteristics of the 97 Cases (N=97)

Variable	n	%	Mean	Mode	Min	Max	*SD*
Age	/	/	4.96	4.64	3.42	6.47	0.72
Type(s) of Special Educational Need							
Mental Handicap							
Diagnosed	4	4.10	/	/	/	/	/
Suspected	14	14.40	/	/	/	/	/
Mental Handicap Degree							
Low	17	17.50	/	/	/	/	/
Moderate	1	1.00	/	/	/	/	/
Hearing Impairment	1	1.00	/	/	/	/	/
Autistic Disorder (ASD)							
Diagnosed	31	32.0	/	/	/	/	/
Suspected	10	10.3	/	/	/	/	/

Speech Impairment							
Diagnosed	59	60.80	/	/	/	/	/
Suspected	3	3.10	/	/	/	/	/
Other diagnoses							
Diagnosed	81	83.50	/	/	/	/	/
Suspected	1	1.00	/	/	/	/	/
Borderline developmental delay/Developmental delay	49	50.50	/	/	/	/	/
Diagnosed	3	3.10	/	/	/	/	/
Suspected	26	26.80	/	/	/	/	/
Global developmental delay/Significant delay	1	1.00	/	/	/	/	/
Attention Deficit Hyperactivity Disorder (ADHD)	5	5.20	/	/	/	/	/
Diagnosed	7	7.20	/	/	/	/	/
Suspected	2	2.10	/	/	/	/	/
Fine motor delay							
Diagnosed	2	2.10	/	/	/	/	/
Suspected	1	1.00	/	/	/	/	/
Gross motor delay							
Diagnosed	19	19.6	/	/	/	/	/
Suspected	2	2.10	/	/	/	/	/
Other disabilities[a]							
Diagnosed	35	36.10	/	/	/	/	/
Suspected	23	23.70	/	/	/	/	/
Waiting list for SWD pre-school rehabilitation services	16	16.50	/	/	/	/	/
EETC	2	2.10	/	/	/	/	/
IP	4	4.10	/	/	/	/	/
SCCC	17	17.50	/	/	/	/	/
EX-EETC	5	5.20	/	/	/	/	/
EX-TSP	1	1.00	/	/	/	/	/
CAC	3	3.10	/	/	/	/	/
Waiting for more than 1 services	1	1.00	/	/	/	/	/
EX-TSP & EETC							

EX-TSP & SCCC CAC & IP							
Parents participating in the parent interview (N=94)	/	/	38.94	36	27	62	5.65
Age							
Gender	23	23.70	/	/	/	/	/
Male	71	73.20	/	/	/	/	/
Female							
Relationship with child	23	23.70	/	/	/	/	/
Father	68	70.10	/	/	/	/	/
Mother	2	2.10	/	/	/	/	/
Grandmother	1	1.00	/	/	/	/	/
Others							
Marital status	86	88.70	/	/	/	/	/
Married and with partner	4	4.10	/	/	/	/	/
Separated	3	3.10	/	/	/	/	/
Divorced	1	1.00	/	/	/	/	/
Cohabitation							
Education level	1	1.00	/	/	/	/	/
KG	4	4.10	/	/	/	/	/
Primary School	24	24.7	/	/	/	/	/
Middle school	28	28.9	/	/	/	/	/
High school	28	28.9	/	/	/	/	/
Tertiary school	9	9.30	/	/	/	/	/
Master or above							
Monthly household income	1	1.00	/	/	/	/	/
No income, receiving CSSA	1	1.00	/	/	/	/	/
$5,000 or below	4	4.10	/	/	/	/	/
$5,001 to $10,000	18	18.60	/	/	/	/	/
$10,001 to $20,000	24	24.70	/	/	/	/	/
$20,001 to $30,000	27	27.80	/	/	/	/	/
$30,001 to $50,000	19	19.60	/	/	/	/	/
$50,001 or above							

Note. A child may have more than one type of special educational needs.

[a] This includes at risk of dyslexia, prematurity with multiple illnesses and problems in attention, social skills, language and articulation.

Table 13

Training details for the 97 Cases (N=97)

Variable	n	%	Mean	Mode	Min	Max	*SD*
Length of stay in OPRS services	/	/	470.36	308[a]	245	722	104.19
6 months to 1 year	24	24.7	/	/	/	/	/
More than 1 year	73	75.3	/	/	/	/	/
Total no. of service hours received							
Speech Therapists	/	/					
Occupational Therapists	/	/					
Physiotherapists	/	/					
Special Child Care Worker	/	/					
Total number of service hours received							
in service formats	/	/					
School-based	/	/					
Centre-based	/	/					
Home-based							

[a] Multiple modes exist. The smallest value is shown.

113. The results of independent t-test showed that there were no significant differences on the demographic variables (e.g. age of both the child and the parent, parent education, family income, etc.) of the children and their parents in both the above average and below average groups, except for two variables. There is a significant difference in more Global Developmental Delay cases (t (95) = 2.59, p = .014), 17 cases in the below average group and 9 cases in the above average group. There are more cases of children with severe developmental delays in the below average group. This group of children is less likely to be nominated into the above average group. There is also a significant difference in the hours of home-based training reported by the Project Operators between the two groups (t (95) = -2.12, p = .038). The mean and standard deviation of the home-based training hours of the below average group were 1.54 hours and 2.73 hours whereas those of the above average group were 3.85 hours and 6.94 hours. Children in the above average group received twice the number of home-based training hours than those in the below average group.

114. Among these completed cases, 51 cases have also completed school/centre visits. The contributing factors derived from parent interviews and school/centre visits are analysed separately. The key successful factors of the above-average group and the contributing factors to the cases in the below-average group are presented below.

Above-Average Cases

115. Data from 54 cases in the above-average group were analysed. Table 14 lists the demographic characteristics of the cases in the above average group and Table 15 the training details of these cases.

Table 14

Demographic Characteristics of the 54 above-average cases (N=54)

Variable	n	%	Mean	Mode	Min	Max	*SD*
Age	/	/	5.01	4.64[a]	3.62	6.45	0.71
Type(s) of Special Educational Need							
Mental Handicap							
Diagnosed	2	3.70	/	/	/	/	/
Suspected	9	16.70	/	/	/	/	/
Mental Handicap Degree							
Low	10	18.50	/	/	/	/	/
Moderate	1	1.90	/	/	/	/	/
Hearing Impairment	1	1.90	/	/	/	/	/
Autistic Disorder (ASD)							
Diagnosed	19	35.20	/	/	/	/	/
Suspected	6	11.10	/	/	/	/	/
Speech Impairment							

Diagnosed	30	55.60	/	/	/	/	/
Suspected	2	3.70	/	/	/	/	/
Other diagnoses							
Diagnosed	43	79.60	/	/	/	/	/
Suspected	1	1.90	/	/	/	/	/
Borderline developmental delay/Developmental delay							
Diagnosed	31	57.40	/	/	/	/	/
Suspected	2	3.70	/	/	/	/	/
Global developmental delay/Significant delay	9	16.70	/	/	/	/	/
Attention Deficit Hyperactivity Disorder (ADHD)							
Diagnosed	1	1.90	/	/	/	/	/
Suspected	2	3.70	/	/	/	/	/
Fine motor delay							
Diagnosed	2	4.70	/	/	/	/	/
Gross motor delay							
Diagnosed	1	1.90	/	/	/	/	/
Suspected	1	1.90	/	/	/	/	/
Other disabilities [b]							
Diagnosed	9	16.70	/	/	/	/	/
Suspected	1	1.90	/	/	/	/	/
Waiting list for SWD pre-school rehabilitation services							

EETC	22	40.70	/	/	/	/	/
IP	14	25.90	/	/	/	/	/
SCCC	7	13.00	/	/	/	/	/
EX-EETC	2	3.70	/	/	/	/	/
EX-TSP	2	3.70	/	/	/	/	/
CAC	7	13.00	/	/	/	/	/
Waiting for more than 1 services	3	5.60	/	/	/	/	/
EX-TSP & SCCC	2	3.70	/	/	/	/	/
CAC & IP	1	1.00	/	/	/	/	/
Discharged	3	5.56	/	/	/	/	/
E	1	1.85	/	/	/	/	/
S	2	3.70	/	/	/	/	/
Parents participating in the parent interview (N=54)							
Age	/	/	38.91	42	27	52	4.64
Gender							
Male	15	27.80	/	/	/	/	/
Female	38	70.40	/	/	/	/	/
Relationship with child							
Father	15	27.80	/	/	/	/	/
Mother	36	66.70	/	/	/	/	/
Grandmother	2	3.70	/	/	/	/	/

Marital status							
Married and with partner	49	90.70	/	/	/	/	/
Separated	1	1.90	/	/	/	/	/
Divorced	2	3.70	/	/	/	/	/
Cohabitation	1	1.90	/	/	/	/	/
Education level							
Primary School	3	5.60	/	/	/	/	/
Middle school	11	20.40	/	/	/	/	/
High school	16	29.60	/	/	/	/	/
Tertiary school	17	31.50	/	/	/	/	/
Master or above	6	11.10	/	/	/	/	/
Monthly household income							
$5,001 to $10,000	2	3.70	/	/	/	/	/
$10,001 to $20,000	9	16.70	/	/	/	/	/
$20,001 to $30,000	16	29.60	/	/	/	/	/
$30,001 to $50,000	13	24.10	/	/	/	/	/
$50,001 or above	13	24.10	/	/	/	/	/

Note: A child may have more than one types of special needs.

[a] This includes at risk of dyslexia, prematurity with multiple illnesses and problems in attention, social skills, language and articulation.

[b] Multiple modes exist. The smallest value is shown.

Table 15

Training details for the 54 Cases (N=54)

Variable	n	%	Mean	Mode	Min	Max	*SD*
Length of stay in OPRS services	/	/	489.39	320[a]	287	722	100.02
6 months to 1 year	10	18.50	/	/	/	/	/
More than 1 year	44	81.50	/	/	/	/	/
Total no. of service hours received (*N=50*)							
Speech Therapists	/	/	26.95	14[a]	5	87	15.44
Occupational Therapists	/	/	11.41	6	2	33.75	7.60
Physiotherapists	/	/	5.90	0	0	37.50	7.21
Special Child Care Worker	/	/	37.33	23[a]	0	83.50	17.41
Total number of service hours received in service formats (*N=50*)							
School-based	/	/	54.91	40[a]	18	102.16	21.06
Centre-based	/	/	27.04	0	0	97.49	22.32
Home-based	49	98	3.85	0	0	30	6.94

[a]Multiple modes exist. The smallest value is shown.

Findings of Successful Factors in parent interviews

116. So far, we have identified five successful factors from the parent interviews contributing to the progress of the above-average cases.

A. Strong parental understanding and acceptance of the child's developmental conditions and needs

117. 38 out of 54 above-average cases showed that parents' clear understanding of their children's needs might lead to satisfactory progress of the children. Those parents were able to give a detailed account of their children's strengths, weaknesses, interests and developmental progress. Besides, they could mention the details of OPRS training in the interviews. They showed higher involvement in OPRS training sessions (29 cases) and home-based training (23 cases) than the parents who had weak understanding of the child's developmental needs in the below-average group. In the below-average group, only nine parent reported high involvement in training and 11 reported high involvement in home-based training. In case C2004, the parent perceived her role as irreplaceable in her child's development regardless of the services. As the parents in the above-average group understand the children's developmental needs, they explore different resources and opportunities to support the children's development and the family, and actively acquire relevant knowledge via different sources, such as internet, books, talks, professionals and friends (12 cases). They arranged self-financing training for the child either prior to the commencement of OPRS or additional trainings besides OPRS services or both. In case C2030, the parent learnt that early intervention before the age of six was critical to the growth of the child; thus, the child was arranged to receive more than 180 hours of training prior to the commencement of OPRS and eight hours of additional training monthly besides OPRS service. In case C2027, the parents joined a play therapy course to learn to manage their child's emotions. In general, the parents with strong understanding and acceptance of the conditions of their children with special needs are motivated to support the growth of the children.

B. Support from spouse

118. Among the 54 above-average cases, 26 of them gain support from their spouses to meet the children's developmental needs technically, emotionally and financially. In case C2035, the couples support each other in daily routine and share the tasks of taking care of their child. The father shared what he learnt from the OPRS parents' group that he participated with his spouse. The couples later transferred the skills learnt to their daily practice. Among those 54 cases, only four case shows that the parent has high stress level in parenting.

C. High parental involvement in attending trainings (at school, in centre) and in following through the home training as advised

119. As stated above, 34 out of 54 above-average cases showed that the parents are highly involved in the training. Moreover, 15 out of 34 parents who reported high involvement in training, such as session observation or being assigned roles in the session by the therapists, also conducted home-based training regularly. In cases C2020, C2027, C2028, C2036, C2038, C2043, C2066, C2081, C2088 and C2093, the parents reported that they have attended almost all training sessions to gain more training skills and further understanding of the children developmental needs. According to case C2027, the parent learnt the concept of social distance from the therapists and he applied this concept in daily practice to help the child to improve his social skills. In case C2028, the parent commented that she learnt how to conduct home-based training (e.g. the skills of teaching sentence structure) from the therapists during the training observations.

D. Close parent-professional and interdisciplinary communications

120. 33 out of 54 above-average cases showed that the parents have close communication with the professionals (ST/PT/OT/SCCW/SW). Among the 34 parents reporting to be highly involved in children's trainings, 27 of them also have close communication with the professionals. They have more opportunities to discuss with the therapists on the children's training performance and progress after the training sessions and they are more motivated to seek help from the therapists when they encounter difficulties in home-based training through face-to-face

communication, phone calls or training handbooks. In case C2025, the parent commented that the knowledge and skills he learnt from the professionals were useful for him to cope with the child. The parents also gained insight in parenting from the professionals. In case C2028, the mother admitted that she once lost her temper easily when the child failed to learn mathematics. After she had sought advice from the SCCW, she adopted more positive strategies to motivate the child to learn. The close communication between parents and therapists also provides a chance for the therapists to understand children's strengths and limitations at home; thus, the therapists can adjust training content and schedule accordingly. In cases C2028 and C2043, the centres provide assessments to the children biannually and the professionals hold meetings with the parents to evaluate the progress of the children and adjust the upcoming training schedule. 22 cases, whose parents have close communications with the professionals, showed that good rapport was built between the therapists and the parents and the children. In case C2027, the parent reported that the child trusted the therapists and engaged well in training. With good rapport, the parents and the children are more cooperative and motivated to follow the guidelines and tasks given by the therapists.

E. Sufficient support from school as perceived by parents

121. Schools' support to the special developmental needs of the children was reported in 35 out of 54 above-average cases. Schools provide support in terms of manpower, room allocation for OPRS training and curriculum adjustment. In some schools, the school headmasters and teachers understand the developmental needs of the children and the service under OPRS. School social workers are available to support the students with special needs. In case C2043, a school director serves as the coordinator and sometimes sit-in training sessions and the headmaster follows the child's progress. Moreover, some schools adjust teaching schedule and pedagogical approach to cater for the needs of the students with special needs specifically. In case C2044, the school accommodates the training timetable with the child's regular school timetable to avoid the child missing out any school lessons. In case C2030, the school headmaster understands the child's needs and assigns different school works to the child. Furthermore, among the 54 above-average cases, 27 cases showed that the home-school communication is sufficient. Either the parents or the school teachers, headmasters and school social

workers take initiative to update each other on the children's performance through face-to-face discussion, whatsapp messages and phone calls; or the parents seek advice on parenting and different subvented services. In case C2006, the parent used physical punishment on the child. After the intervention on parental emotional management from school, the parent adopted more positive way to communicate with the child. Both parties, the parents and the school, can have better understanding of the children with close communication and provide assistance to the children accordingly.

Above-Average Cases- Findings of Successful Factors in School/Centre visit

122. 51 cases have completed a school/centre visit. They include 29 above-average cases and 22 below-average cases. Among the 29 above-average cases, two major factors are found to be contributing to the progress of the cases in the school/centre contexts.

A. Good communication between school/teachers and therapists

123. 18 out of 29 above-average cases reported close contact between these two groups of people. Such communication came in different forms, ranging from verbal exchange to co-participation in class activities (e.g. training observation by teacher or class visit by therapist). In case C2060, it was reported that the therapists and teachers would set up classroom goals collaboratively, and the teachers would cooperate with the therapists in following up the activities. 5 of the 18 cases (C2004, C2019, C2044, C2045 and C2077) reported to have teachers participating in the training observation, and teachers in 4 of these cases showed good understanding of the children's special needs. It is also worth noting that 12 of the 18 school/centre representatives also demonstrated good understanding of the target children. The communication between the two parties seems to positively correlate with their understanding of the children with special needs.

B. Good understanding of the child and involvement in child's training process

124. Teachers and/or therapists of those 18 out of 29 above-average cases showed good understanding of the child's situation. Eight teachers being interviewed demonstrated comprehensive understanding of the target children and their development. They showed understanding in the children's weaknesses, but at the same time, managed to identify their strengths. Eleven teachers (C1002, C2004, C2019, C2021, C2044, C2045, C2051, C2058, C2070, C2075, C2079) indicated that they maintained good communication with the therapists, two (C2004, C2044) were allowed to observe the training sessions conducted by the therapists, and one (C2058) has even attended screening and assessment trainings conducted by the therapists. Training handbook was also highlighted by two (C2004, C2044) as a useful tool for teachers to keep track of the target children's progress in OPRS training.

Below-Average Cases

125. Data from 43 cases in the "below-average" group were analysed. Table 16 presents the demographic characteristics of these below average cases and Table 17 the training details of these children. A chi-square test of independence was performed to examine the relation between types of special needs and children's developmental performances. There was a significant difference between the performance groups on the diagnoses of global developmental delay, χ^2 (2, N=97) = 6.38, p <. 05. Below-average cases were more likely to have the diagnoses of global developmental delay than the cases in the above-average group. As the diagnosis of global developmental delay refers to significant delay in child's development, the chi-square test result suggests that the below-average cases have relatively higher severity level of special needs than cases in the above average cases.

Table 16

Demographic Characteristics of the 43 below-average cases (N=43)

Variable	n	%	Mean	Mode	Min	Max	*SD*
Age	/	/	4.90	4.78 [a]	3.42	6.47	0.74
Type(s) of Special Need							
Mental Handicap							
Diagnosed	2	4.70	/	/	/	/	/
Suspected	5	11.60	/	/	/	/	/
Mental Handicap Degree							
Low	7	17.50	/	/	/	/	/
Autistic Disorder (ASD)							
Diagnosed	12	27.90	/	/	/	/	/
Suspected	4	9.30	/	/	/	/	/
Speech Impairment							
Diagnosed	29	67.40	/	/	/	/	/
Suspected	1	2.30	/	/	/	/	/
Other diagnoses							
Diagnosed	38	88.40	/	/	/	/	/
Borderline developmental delay/Developmental delay							
Diagnosed	18	41.90	/	/	/	/	/
Suspected	1	2.30	/	/	/	/	/

Global developmental delay/Significant delay	17	39.50	/	/	/	/	/
Attention Deficit Hyperactivity Disorder (ADHD)							
Suspected	3	7.00	/	/	/	/	/
Fine motor delay							
Diagnosed	2	4.70	/	/	/	/	/
Gross motor delay							
Diagnosed	1	2.30	/	/	/	/	/
Other disabilities[a]							
Diagnosed	10	23.30	/	/	/	/	/
Suspected	1	2.30	/	/	/	/	/
Waiting list for SWD pre-school rehabilitation services							
EETC	13	30.20	/	/	/	/	/
IP	9	20.90	/	/	/	/	/
SCCC	9	20.90	/	/	/	/	/
EX-TSP	2	4.70	/	/	/	/	/
CAC	10	23.30	/	/	/	/	/
Waiting for more than 1 services	2	4.70	/	/	/	/	/
EX-TSP & EETC	1	2.30	/	/	/	/	/
EX-TSP & SCCC	1	2.30	/	/	/	/	/
Discharged	3	6.98	/	/	/	/	/
IP	1	2.33	/	/	/	/	/
S	2	4.65	/	/	/	/	/

Parents participating in the parent interview (N=43)							
Age	/	/	38.98	30[b]	28	62	6.82
Gender							
Male	8	18.60	/	/	/	/	/
Female	33	76.70	/	/	/	/	/
Relationship with child							
Father	8	23.70	/	/	/	/	/
Mother	32	70.10	/	/	/	/	/
Others	1	2.30	/	/	/	/	/
Marital status							
Married and with partner	37	86.00	/	/	/	/	/
Separated	3	7.00	/	/	/	/	/
Divorced	1	2.30	/	/	/	/	/
Education level							
KG	1	2.30	/	/	/	/	/
Primary School	1	2.30	/	/	/	/	/
Middle school	13	30.20	/	/	/	/	/
High school	12	27.9	/	/	/	/	/
Tertiary school	11	25.6	/	/	/	/	/
Master or above	3	7.00	/	/	/	/	/
Monthly household income							

No income, receiving CSSA	1	2.30	/	/	/	/	/
$5,000 or below	1	2.30	/	/	/	/	/
$5,001 to $10,000	2	4.70	/	/	/	/	/
$10,001 to $20,000	9	20.90	/	/	/	/	/
$20,001 to $30,000	8	18.60	/	/	/	/	/
$30,001 to $50,000	14	32.60	/	/	/	/	/
$50,001 or above	6	14.00	/	/	/	/	/

Note: A child may have more than one types of special needs.

[a] This includes at risk of dyslexia, prematurity with multiple illnesses and problems in attention, social skills, language and articulation.

[b] Multiple modes exist. The smallest value is shown.

Table 17

Training details for the 43 Cases (N=43)

Variable	n	%	Mean	Mode	Min	Max	*SD*
Length of stay in OPRS services	/	/	446.47	308[a]	245	688	105.54
6 months to 1 year	14	32.60	/	/	/	/	/
More than 1 year	29	67.40	/	/	/	/	/
Total no. of service hours received (*N=42*)							
Speech Therapists	/	/	21.74	29.50	4	48.35	10.30
Occupational Therapists	/	/	9.64	7	0	27.79	6.56
Physiotherapists	/	/	4.99	0	0	39.25	7.38
Special Child Care Worker	/	/	33.35	33	11	67.67	13.73
Total number of service hours received in service formats (*N=42*)							
School-based	/	/	47.43	49	3	96.75	21.75
Centre-based	/	/	22.09	5	0	95	20.58
Home-based	37	88.10	1.54	0	0	12	2.73

[a]Multiple modes exist. The smallest value is shown.

Findings of Contributing Factors in Parent Interviews

126. There are three major areas identified in the parent interview that may contribute to the progress of the below-average group.

A. Weak parental understanding and acceptance of the child's developmental conditions and needs

127. For the below-average cases, it is often observed that the parents' limited understanding of the child's needs may lead to the slow progress of the children. Those parents showed lower involvement in OPRS training sessions (11 cases) and home-based training (11 cases) than the parents who showed better understanding of the child's developmental needs in the below-average group. Moreover, all the parents with weak understanding of the child's needs did not explore different suitable resources or opportunities to facilitate the growth of the child. In case C2014, the parent reported that the child did not have time for home-based training as she arranged different academic activities, such as tutorials, for him. She prioritised academic needs over the developmental needs of the child. Furthermore, among the cases with weak parental understanding of the child's needs, nine cases were found to have inappropriate parenting. The parents may belittle the children and tend to use physical punishments when the children misbehave. Expectations set on the child may be beyond the child's developmental conditions. In case C2064, the parent expects the 4-year-old child with global delay and ASD to take care of himself. Generally, the children in this group receive little suitable support and guidance from their parents.

B. Little support from spouse/family members

128. In the below-average group, parents often reported that the spouses do not provide adequate support in taking care of the children. Among the 19 cases, six cases show marital issues, and in other cases, the spouses are not interested in taking care of the children or seldom have time to spend with the children. In the divorce cases, the single parents have limited time to observe training

sessions and conduct home-based trainings due to long working hours. An undesirable marital relationship causes emotional burden to both the parents and their children. In case C2002, the parent admitted that she was less sensitive to the child's needs as she had to deal with her own emotions relating to her martial issue. In case C2005, the mother has not lived with the child since he was two. The father reported that the child missed the mother and this might affect his emotion.

C. Low involvement in training sessions and home-based trainings

129. About half of the below average group (21 out of 43) reported that the parents seldom attend the training sessions. In 11 of these 21 cases, the parents have long working hours or seldom spend time with the child. In case C2047, the single parent reported that she traveled to China for business trips three times weekly and did not have time to participate in the training. 11 cases show that the parents have weak understanding of the children's developmental needs and they do not understand the importance of training session involvement and home-based training; 11 cases explain that the parents gain little support from spouse technically, emotional and financial to involve in the trainings. Moreover, there are other reasons for the parents' low involvement in training. In case C2042, the parent commented that training session observation was crucial for her to conduct home-based training as she could learn professional skills and knowledge in the training sessions; however, the therapists only allowed her to attend the sessions at the beginning of OPRS service as the attention of the child will be distracted when the parents attend the sessions.

130. Among the 21 cases with low involvement in training, 16 of them also show low involvement in home-based training. In case C2064, the parent who is a full-time working parent reported that she had difficulty to conduct home-based training as the child was reluctant to cooperate. Without adequate home-based training, the progress of the children may be less sustainable.

Findings of the Contributing Factors in School/Centre visits

131. Among the 43 below-average cases being analysed, 22 below-average cases have completed school/centre visit. In these 22 cases, no pattern in contributing factors has been observed so far.

132. Nevertheless, three factors are identified to be potentially significant in contributing to the progress of the below-average group. The first factor is the weak parental understanding and acceptance of the child's developmental conditions and needs, the second one is the limited support from spouse, and the third one is the parent's limited involvement in the training sessions and home-based trainings. These factors co-exist in six cases (C2005, C2010, C2014, C2017, C2047 and C2064) and they continue to contribute to the progress of three (C2005, C2014 and C2064) of these six below-average cases despite the presence of a strong positive factor found in the school visits with above-average cases, which is good teachers' understanding of the child's needs. It reflects that parental understanding and acceptance of the child's needs and parents' involvements in trainings may play significant roles in determining the progress of the cases.

Suggestions based on Findings of the Longitudinal Study and Case Study

133. The quantitative findings from the longitudinal study have shown that children participants across four age groups (from 2 to above 5 years old) made significant impacts on all domains of development. A significant maintenance effect was also found on children who had been discharged from the Pilot Scheme for three months. The median professional training hours per month (5.6 hours) consisted of physiotherapy (0.22 hours, 4%), occupational therapy (0.85 hours, 15.2%), speech therapy (1.65 hours, 29.4%), and special education/child care (2.88 hours, 51.4%). The range of centre-based training hours was from 0 to 8.01 per month in children who received the services for more than 12 months and they also made significant progress in all domains.

134. It is recommended that school-based early intervention should begin at 2 years old. Our team is fully aware that early detection, diagnosis and appropriate intervention can make significant differences to children who have (or are suspected to have) special needs. We would also like to stress that the developmental pacing of each child is different. The more we focus on the holistic child, the easier we can simultaneously address the development in the physical, intellectual, emotional and social domains of a child.

135. Based on the analyses of the findings from parent interviews and school visits in case study, the following recommendations are given.

136. Parents and family members' understanding and acceptance of children's developmental needs are important to enhance children's developmental progress. Emotional support (e.g. counselling services) can be provided to the parents immediately when the child is diagnosed with special needs. Detailed explanation of the child's developmental needs and introduction of different subvented services (e.g. OPRS/IP/SCCC/EETC) by a case manager can then be provided so that the parents are able to understand better of the child's needs and make the most suitable decision for their children. Schools and centres can organise more talks or workshops on special needs to equip the parents with the relevant knowledge and parenting skills. Counselling/consultations to parents can serve as a secondary intervention to identify and help parents who have personal struggles, such as martial issues. Parent groups can be organised by centres/ school for the parents who have children with special needs to gain emotional support or to share knowledge on special needs or parenting experience.

137. Parents' involvement in training and following up the training by conducting home trainings are another critical factor contributing to children's developmental progress. For the parents with low level of involvement in training sessions and home-based trainings, a case manager can strengthen communications among parents, professionals and school to encourage parental engagement. For the parents with long working hours and seldom have time to participant in training sessions, centres can provide home visit and

demonstrations of training at home as to help parents to make use of what they have at home to help the child.

138. Inter-disciplinary communication between parents, schools and therapists also supports children's developmental progress. It should be sustained by the existing effective practices, such as frequent use of training handbook as a communication channel between parent and professional and inviting teaching staff to join the training sessions so as to enhance knowledge transfer among teachers and professionals.

139. A combination of focus group interviews and questionnaires of parents/primary carers is used. Statistical analysis is conducted on the quantitative questions and qualitative data is analysed to identify the main themes that underlie the responses. Sample questions included: what is the role in taking care of the child, how OPRS helps your child, etc.

Focus Group Interviews with Parents/Primary Carers

140. Five focus group interviews for parents/primary carers were conducted in August and September 2017. Questions include their perception of OPRS, skills and stress of parenting young children with special needs, support received from Project Operators and the schools. Demographic characteristics of parents are presented in Table 18 and Table 19 describes conditions and support on the children before joining OPRS.

Table 18

Background of the Parent Participants

Code of parents	**Relationship with the child (# major caregiver)**	**Child's age**	**Child's gender**	**Child's SEN type(s)**	**Child's age when assessed**	**Current status *(date of discharge if applicable)***	**Child's age at the start of OPRS service**	**Length of OPRS service received**	**Family background**
P0101	Mother #	4 yrs 11 mths	F	ASD	3 yrs 0 mth	Discharged to EETC *(12/2016)*	3 yrs 7 mths	6 months (3 yrs 7 mths - 4 yrs 1 mth)	- Only child in a complete family - Mother works part-time and flexible hours, as the major caregiver of the child
P0102	Maternal grandmother #	6 yrs 6 mths	M	GD, SLD, ADHD	2 yrs 0 mth	Discharged to P1 *(8/2017)*	5 yrs 6 mths	11 months (5 yrs 6 mths - 6 yrs 5 mths)	- Only child in a complete family - Full-time working parents - Grandmother as major caregiver since birth
P0103	Mother	5 yrs 11 mths	F	GD, SLD, ADHD	K2	Discharged to P1 *(7/2017)*	4 yrs 11 mths	11 months (4 yrs 11 mths - 5 yrs 10 mths)	- Younger child in a single parent family - Elder brother diagnosed with SLD & ADHD - Full-time working mother
P0104	Mother	4 yrs 4 mths	F	ASD	2 yrs 0 mth	Discharged to SCCC *(7/2017)*	3 yrs 4 mths	11 months (3 yrs 3 mths - 4 yrs 2 mths)	- Only child in a complete family - Full-time working parents - Domestic helper available

P0105	Mother #	4 yrs 0 mth	M	ID, SLD, ASD	2 yrs 0 mth	Discharged to SCCC *(8/2017)*	3 yrs 0 mth	12 months (3 yrs 0 mth – 4 yrs 0 mth)	- Only child in a complete family - Mother as full-time housewife and major caregiver of the child
P0206	Mother	4 yrs 7 mths	F	ADHD	Not mentioned	Active	3 yrs 9 mths	10 months (3 yrs 9 mths - 4 yrs 7 mths)	- Younger child with a 16-year-old elder brother - Lives with parents and grandparents - Mother works part-time to spend more time with the child - Grandparents as major caregiver of the child
P0207	Mother	4 yrs 11 mths	F	GD	3 yrs 6 mths	Active	4 yrs 3 mths	8 months (4 yrs 3 mths - 4 yrs 11 mths)	- Older child with a younger sister aged 3 - Lives with parents and grandmother - Full-time working parents - Grandmother as major caregiver of the child
P0208	Father	4 yrs 7 mths	M	SLD	Not mentioned	Active	3 yrs 9 mths	11 months (3 yrs 9 mths - 4 yrs 7 mths)	- Youngest child with two elder sisters aged 12 and 15 - Father works full-time and mother as housewife and major caregiver of the child

P0209	Mother	3 yrs 9 mths	M	ASD	Not mentioned	Active; still waitlisting for EETC	3 yrs 8 mths	1 month (3 yrs 8 mths - 3 yrs 9 mths)	- Younger child with an elder brother aged 5 - Elder brother also diagnosed with ASD - Mother works full-time and father as the child's major caregiver
P0310	Mother #	6 yrs 8 mths	F	GD	Not mentioned	Discharged *(9/2017)*	5 yrs 8 mths	12 months (5 yrs 8 mths - 6 yrs 8 mths)	- One of the twin girls who both received OPRS - Mother is the major caregiver and under employment
P0311	Mother #	6 yrs 4 mths	M	ASD	Not mentioned	Discharged *(8/2017)*	5 yrs 5 mths	11 months (5 yrs 5 mths - 6 yrs 4 mths)	- Younger child with an elder brother aged 19 - Mother is the major caregiver and housewife
P0312	Mother #	5 yrs 11 mths	M	SD, ASD	Not mentioned	Discharged *(8/2017)*	5 yrs 2 mths	9 months (5 yrs 2 mths - 5 yrs 11 mths)	- Older child with a young brother aged 3 - Mother is the major caregiver and under employment
P0313	Mother #	4 yrs 7 mths	F	GD, ADHD	Not mentioned	Discharged to IP *(8/2017)*	3 yrs 5 mths	14 months (3 yrs 5 mths - 4 yrs 7 mths)	- Younger child with an elder brother aged 19 - Mother is the major caregiver and housewife

P0314	Mother #	6 yrs 3 mths	M	BD, ASD	Not mentioned	Discharged to P1 *(8/2017)*	4 yrs 8 mths	19 months (4 yrs 8 mths - 6 yrs 3 mths)	-	Younger child with an elder sister aged 18 - Mother is the major caregiver and quitted her full-time job to take care of the children
P0415	Mother#	5 yrs 11 mths	M	SD, ASD	Not mentioned	Active	4 yrs 1 mth	22 months (4 yrs 1 mth - 5 yrs 11 mths)	-	Elder child to a younger brother aged 3 - Mother is a housewife
P0416	Mother#	4 yrs 11 mths	M	SD, GD	Not mentioned	Active	3 yrs 3 mths	20 months (3 yrs 3 mths - 4 yrs 11 mths)	-	Mother is a housewife
P0417	Mother	4 yrs 1 mth	M	SD	Not mentioned	Active	3 yrs 2 mths	11 months (3 yrs 2 mths)	-	Younger child to an elder brother aged 7 and an elder sister aged 6 - Both parents are working
P0418	Father	5 yrs 5 mths	M	ASD	Not mentioned	Active	3 yrs 11 mths	19 months (3 yrs 11 mths - 5 yrs 5 mths)	-	Elder child to a younger brother aged 3
P0519	Mother#	5 yrs 2	M	ASD	Not mentioned	Active	Not mentioned	Not mentioned	-	Younger child to an elder brother aged 17 - Mother is a housewife

P0520	Father	4 yrs 8 mths	M	ASD	Not mentioned	Active	3 yrs 9 mths	11 months (3 yrs 9 mths - 4 yrs 8 mths)	-	Younger child to an elder sister aged 6
P0521	Mother	5 yrs 2 mths	M	SD, ASD	Not mentioned	Active	3 yrs 8 mths	18 months (3 yrs 8 mths - 5 yrs 2 mths)	-	Not mentioned
P0522	Mother#	4 yrs 10 mths	F	GD, ADHD	Not mentioned	Active	3 yrs 9 mths	13 months (3 yrs 9 mths - 4 yrs 10 mths)	-	Mother is a housewife
P0523	Father	6 yrs	M	ASD, ADHD	Not mentioned	Active	5 yrs	12 months (5 yrs - 6 yrs)	-	Young child to an elder sister aged 17 with Asperger's disorder
P0524	Mother#	4 yrs 1 mth	M	SD, GD, ASD, ADHD	Not mentioned	Active	Not mentioned	Not mentioned	-	Mother is a housewife

Table 19

Support to the Children of the Parent Participants Before Joining OPRS

Code of parents	Child's SEN type(s)	Child's age when assessed	Child's age at the start of OPRS service	Length of OPRS service received (age between)	Services explored/received before joining OPRS
P0101	ASD	3 yrs 0 mth	3 yrs 7 mths	6 months (3 yrs 7 mths - 4 yrs 1 mth)	- 2 yrs 6 mths: playgroup - K1: Attended intensive individual training (incl. sensory integration, speech) 3 times per week for half a year, later joined another social skill group training for 2 months - Expenses on SEN training cost $4000-5000/month
P0102	GD, SLD, ADHD	2 yrs 0 mth	5 yrs 6 mths	11 months (5 yrs 6 mths - 6 yrs 5 mths)	- (None)
P0103	GD, SLD, ADHD	K2	4 yrs 11 mths	11 months (4 yrs 11 mths - 5 yrs 10 mths)	- Attended some outside training for fine and gross motor - The training scattered in different districts
P0104	ASD	2 yrs 0 mth	3 yrs 4 mths	11 months (3 yrs 3 mths - 4 yrs 2 mths)	- 2 yrs 0 mth: learnt about the a rehabilitation project in an NGO - Received assessment there and started a 5-day intensive training afterwards

P0105	ID, SLD, ASD	2 yrs 0 mth	3 yrs 0 mth	12 months (3 yrs 0 mth - 4 yrs 0 mth)	-	Some ST training and then referred to a centre for formal assessment Intensive training that focused on discipline training and some other training on speech and cognition while attending nursery school Actively looked for different services scattered all over HK Expenses on SEN training could be up to $10,000/month
P0206	ADHD	Not mentioned	3 yrs 9 mths	10 months (3 yrs 9 mths - 4 yrs 7 mths)	-	(None)
P0207	GD	2 yrs 6 mths	4 yrs 3 mths	8 months (4 yrs 3 mths -4 yrs 11 mths)	-	2 yrs 6 mths Received 3 months of self-financing training in an NGO after being assessed to have speech delay there Commented that the training was expensive
P0208	SLD	Not mentioned	3 yrs 9 mths	11 months (3 yrs 9 mths -4 yrs 7 mths)	-	Joined a playgroup and some integrated training in a private sector Commented that the training was expensive
P0209	ASD	Not mentioned	3 yrs 8 mths	1 month (3 yrs 8 mths -3 yrs 9 mths)	-	Joined some training in an NGO
P0310	GD	Not mentioned	5 yrs 8 mths	12 month s	-	4yrs 0 mth received 1 year of SCCW service in an NGO
P0311	ASD	Not mentioned	5 yrs 5 mths	11 month s	-	2 yrs 0 mth: Attended 8 sessions of lessons for 30 hours once a week each month in a kindergarten Commented that parents also learnt a lot of skills and enhanced understanding of the child’s special needs

P0312	SD, ASD	Not mentioned	5 yrs 2 mths	9 month s	-	Assessed by OT of an NGO but did not receive service - Mother expressed frustration in the lack of formal training for the child for 2 years before OPRS
P0313	GD, ADHD	Not mentioned	3 yrs 5 mths	14 month s	-	(None)
P0314	BD, ASD	Not mentioned	4 yrs 8 mths	19 month s	-	Speech therapy in a tertiary institute: 2 courses, each with 10 sessions. One costs $800 for 45 minutes each session; another one cost $10,000 for 45 minutes each session - Community social group in local organisation on every Saturday for once a week which costs $120 for 4 sessions - Commented that the non-OPRS services are very effective, and stated that the child like the worker in the social group much. The child started to express himself verbally.
P0415	SD, ASD	Not mentioned	3 yrs 3 mths	20 months (3 yrs 3 mths - 4 yrs 11 mths)	-	(None)
P0416	SD, GD	Not mentioned	3 yrs 2 mths	11 months (3 yrs 2 mths)	-	(None)
P0417	SD	Not mentioned	3 yrs 11 mths	19 months (3 yrs 11 mths - 5 yrs 5 mths)	-	IP service when the child was in K1 before joining OPRS
P0418	ASD	Not mentioned	3 yrs 11 mths	19 months (3 yrs 11 mths - 5 yrs 5 mths)	-	Early training and IP service when the child was in K1 before joining OPRS

P0519	ASD	Not mentioned	Not mentioned	Not mentioned	-	(None)
P0520	ASD	Not mentioned	3 yrs 9 mths	11 months (3 yrs 9 mths - 4 yrs 8 mths)	-	(None)
P0521	SD, ASD	Not mentioned	3 yrs 8 mths	18 months (3 yrs 8 mths - 5 yrs 2 mths)	-	(None)
P0522	GD, ADHD	Not mentioned	3 yrs 9 mths	13 months (3 yrs 9 mths - 4 yrs 10 mths)	-	(None)
P0523	ASD, ADHD	Not mentioned	5 yrs	12 months (5 yrs -6 yrs)	-	(None)
P0524	SD, GD, ASD, ADHD	Not mentioned	Not mentioned	Not mentioned	-	(None)

Comments on OPRS as a Pilot Scheme by Discharged Group

OPRS in general

141. Nine out of ten parents were generally positive about the service. Among them, eight have children who had received the service for over 11 months and were discharged from the service only 1-2 months before the interview. The remaining two parents whose children were discharged from the service 9 months before was still willing to attend the interview to show her support.

142. Six out of ten parents (cases P0101, P0103, P0104, P0105, P0311 and P0314) had arranged self-financing special needs training for the child prior to the commencement of OPRS. The parents suspended those training for the child upon the admission to OPRS. For parents P0101, P0103, P0104, and P0105, their monthly expenses on those training ranged from a few thousand to $10,000. Before entering OPRS, parent P0311 learnt a lot of skills with enhanced understanding on the child's special needs in the 8 sessions of a local training. She also stressed the importance of early intervention as building a concrete foundation for the child to accommodate to the primary school learning. For case P0314, the mother commented that those self-financing services were very effective, and stated that the child like the worker in the social group. After the two programmes, the child started to express himself verbally.

143. The parents suspended those trainings for their children upon the admission to OPRS, and they agreed that the provision of OPRS had indeed alleviated their financial burdens. Parent P0105 particularly held a strong view in this as she had used up almost all the family savings on self-financing special needs training a year after the child's diagnosis. To her, the enrolment in OPRS afterwards was a timely support to provide sustainable training for her child. And best of all, OPRS had provided one-stop services for their children, and the communication among different therapists was guaranteed.

The lesson observation and training offered

144. Three out of five parents in group 1 (cases P0101, P0104, P0105) had observed the training sessions and parent P0104 even emphasised that it was made compulsory by the NGO. To meet this compulsory requirement, parent P0104, as a full-time working parent, either made adjustment at work or compromised with her domestic helper to ensure that either one of them was available to attend the training with the child. All three parents rated high about the lesson observation and deemed it important for them to acquire the skills from the therapists. However, as for parent P0102, she had never received any invitation and only came to know about the possibility of lesson observation in the interview. She suspected that the therapists might have found it inappropriate due to the child's poor attention. It was found that the arrangement of lesson observation varied among NGOs.

145. In group 3, both parents P0310 and P0314 noted therapist would do class observation, and communicate with the teachers and parents about the situation of the children. The therapists would also discuss with teachers on scheduling sessions, teaching skills, and class management. Parent P0314 appreciated the good arrangement between school classes and training sessions. Parent P0311 also noted that the teacher would communicate with parents on the classroom behavior of the children. Parent P0312 also noted that there was staff in the kindergarten to enhance the understanding and promote the services.

146. Both parents P0312 and P0314 appreciated the on-site services with its accommodation to the special needs of the children. With a familiar training environment where daily schooling happened, the children were more adaptable to the environment compared to centre-based training. Parents P0310 and P0312 valued the cooperation of kindergarten in allowing on-site OPRS services. Parent P0312 also appreciated primary school accommodation sessions, along with the related talks for parents because it prepared the child for the primary school lives.

147. All parents were generally satisfied with the quality of training. They appreciated that the therapists were caring. Children of parents P0104 and

P0105 were offered training from all four professionals, namely SCCW, ST, OT and PT. Centre-based training was arranged for OT and PT as they required larger space, professional facilities and equipment that were only available in centres. Regarding the number of training hours, two parents (cases P0102 and P0105) raised their concerns and expected to increase the frequency of ST training. It was found that a discrepancy in the number of ST training hours could exist among different cases. In the case of parent P0105, she successfully reflected to the organisation the needs of her child in order to increase the frequency of ST training from once per month to twice per month so as to better cater for the severe ASD conditions of her child. It was reflected that although assessment will be done by professionals to plan for the provision of suitable services for the children, parents' knowledge about the child's special needs conditions as well as their attitude towards the service (active vs. passive) could have also made a difference to the services their children received.

148. For centre-based training, the child of parent P0314 was offered training from all four professionals, namely SCCW, ST, OT and PT, with two sessions of each type of training provided every time. The parent P0314 participated in every training session. The child of parent P0312 was offered OT and ST training, while that of parent P0313 was offered PT and OT training. Children of parent P0311 received training from SCCW only. Both parents P0314 and P0312 appreciated the therapists of their close collaboration and services provided. Both P0314 and P0313 were satisfied with the facilities. However, the parent P0313 noted that sometimes the team could not reserve the room for providing the services. Parent P0311 appreciated that different types of trainings will be arranged depending on the child's needs.

The different service delivery modes

149. The parents were invited to give views on their preference on types of training on one or more than one type of training provided to their children.

150. Centre-based training was most preferred among the parents in the discharged group 1. Four out of five parents (cases P0101, P0103, P0104, P0105) rated it as their first priority as they perceived that the facilities in the centres could benefit their children's training to a larger extent. Three of these parents eventually opted for EETC/ SCCC which have already indicated their preference for centre-based training. The availability of the parents to escort and accompany their children for the centre-based training may also be a factor, as these four parents were confident that they could make time to accompany their children to centre-based training if necessary. However, parent P0102 objected this view as it was impossible for her to take leave from work on weekdays.

151. School-based training was also preferred by three parents in group 1 (cases P0103, P0104, P0105) and one parent in group 3 (P0311). Not only did it bring convenience and familiar environment to parents, but it also facilitated the communication between SCCW and kindergarten teachers, which in turn had benefited the children's adaptation in school. In group 3, both parents P0311 and P0312 agreed that centre-based training could be a supplementary support.

152. Two parents in group 3 (P0312 and P0314) noted the difficulty and the disobedience of the children during home-based training compared to those conducted by the therapists. Parents P0311, P0312 and P0314 noted that for home-based training, while the therapists did not do home visit, they taught them some training skills so that they could perform home training for the child. Parent P0312 suggested that when doing home training, parents needed to record the process and showed the video to therapists to keep track on the progress of the child and made sure that the child was able to manage certain skills in home training.

Parents' communication with and the services received from the OPRS professionals

153. Face-to-face communication with therapists was possible for the three parents (cases P0101, P0104, P0105) who could attend the child's training sessions. Other forms of communication, for example, WhatsApp and written records in training handbook were also mentioned. IP teacher and SCCW served as the coordinators for OPRS in cases P0103 and P0104 respectively. As for parent P0105, she was presented a biannual assessment report followed by an explanation in person every half a year to keep her informed of the child's progress. She found it useful to track the changes in the child.

154. Two parents in group 3 (P0311 and P0312) stated that the therapists explained the characteristics of the child to parents and taught them daily skills that help to cope with the child's conditions. Both of them appreciated the therapists for their instructions and professional and effective training as well. Parent P0311 appreciated the recommendations from the therapists tackling the challenges she was facing as her child was being isolated. Parent P0314 noted that the therapists require parent to participate in the training sessions in order to learn skills to help the child. Parents performed home trainings based on the knowledge and skills learnt in the session. She also suggested that there are parent support group in the NGO as a channel to share the stresses and provide emotional support and companionship for parents, in which the participants understood each other's difficulties.

155. Regarding the communication with the social worker, parents P0101, P0105, P0312, P0313 and P0314 reported that they had a social worker to follow up their children for three months or longer. Parent P0101 sought advice from a social worker on the child's discipline problems in school while parent P0105, who suffered from emotional disorder and had been physically abusive to her child due to difficult parenting, was referred to a social worker for counselling to sharpen her parenting strategies. For parent P0312, the social worker was experienced in organising supportive social group, providing emotional support for parents, and sharing skills with the parents as well.

When the child was in the training sessions, the social worker discussed foreseeable difficulties with the parents when promoting to primary school and the necessity in receiving emotional support. The worker also introduced phone applications in providing parents with more information about the primary schools. These supports helped parents to understand more about the upcoming situations and alleviate the parental stress. For parent P0313, the social worker often contacted her through phone updating the child's training progress after getting the report on the child's training progress from the therapists, and asking the child's conditions at school. The social worker would also share parenting skills and strategies with the parent. Furthermore, both parents P0313 and P0314 suggested the social worker was present from the beginning, providing long-term support. Both parents P0310 and P0311 seldom communicated with the social worker. However, parent P0310 suggested that the social worker also talked with her on future issues, including choosing primary school. Parent P0311 suggested that the social worker knew the training progress of the child as well, however, she was unsure about the real needs of having a social worker, whom only seldom communicate with the parent and was not involved in organising events like parent workshops, which were usually conducted by therapists.

Interdisciplinary communication

156. As previously mentioned, the parents appreciated the interdisciplinary approach of OPRS as the collaboration of different therapists was made possible under the Scheme. In case P0105, the head of the OPRS team, SCCW, ST, OT and PT had had a class visit together to observe the child's performance in a normal lesson. The OPRS professionals also shared their views about the child with the kindergarten teachers. As the OPRS professionals witnessed the child's being unable to follow in class, they took the mother's request and agreed to adjust the frequency of ST training afterwards. Moreover, to parent P0105's knowledge, the therapists had also provided training to the kindergarten teachers to polish their skills in handling children with special needs. Both parents P0104 and P0105 were quite certain that the therapists would arrange case meeting every week.

The support in kindergartens

157. Two out of five parents (cases P0101 and P0104) mentioned about the lack of adequate training space provided by the kindergartens. Due to physical constraints, their children were assigned to receive school-based training in Principal's Office and pantry respectively. The issue about the lack of facilities and equipment was also raised by these parents and it accounted for the reasons why most of them preferred centre-based training to school-based training.

158. The parents of the discharged group generally mentioned less about the level of involvement demonstrated by the school and kindergarten teachers. Parent P0103 cited an example about a teacher not being able to identify the use of TheraPutty to illustrate the teacher's lack of knowledge about supporting children with special needs. The headmaster of that kindergarten also admitted that OPRS was still new to the school and the staff, and it took time for them to familiarise themselves with the service.

Reasons for service transfer and situations of children after discharged from OPRS

159. In group 1, the child of parent P0101 was transferred to EETC because of the flexibility in schedule arrangement of EETC. Parent P0101 stated that the training schedule of EETC did not clash with the child's study in school, so there was no interference with her child's learning. In EETC, there were also additional activities, like flag-selling, and better facilities, like treadmill and horse riding machine for PT training. Compared to EETC, centre-based training could provide similar equipment but they were dispersed in different centres, so it was inconvenient for the parent and child to go to each of the centre for training. Both children of parents P0102 and P0103 entered primary school. Parent P0102 rejected the advice for her child to repeat K3 because she wanted her children to try adapting into primary school. Both children of parents P0104 and P0105 were transferred to SCCC. Parent

P0105 noted that there were too few training hours provided by OPRS despite of its good quality of service so she transferred her child to SCCC.

160. In group 3, the children of three parents (P0310, P0312, and P0314) did not receive any services. Parent P0310 reported that her child reached age 6 but was still attending K3 in the kindergarten, so she hoped that the scheme could extend service to children in similar situation in the future. Parent P0312 informed the school about the child's conditions and asked for special needs support in the school. She requested reports from the relevant government departments, including the CAC assessment report. The trainings requested were ST and social skill training. Her child was queuing for the ASD centre services of a local tertiary institution, as introduced by the OPRS professional at that moment. Parent P0314 informed the primary school her child was attending about the child's conditions and asked the special needs support in the school, with the arrangement of training in process from the primary school.

161. Parent P0311 also shared the OPRS assessment report to the primary school, and a group training session was arranged for her children. She expressed worries on the fact that when promoting to primary school, the child can only rely on the school services. It was difficult for her to find other services for her child.

162. The child of parent P0313 was currently in IP service. Before accepting the IP offer, she had many struggles on whether to switch to IP or stay in OPRS. The child attended a new school now.

Comments on OPRS as a Pilot Scheme by Non-discharged group (Current cases)

OPRS in general

163. Nine out of fourteen parents were generally positive about the service. Using a 10-point scale, five parents rated the service 8 or above. Both parents

P0521 and P0524 agreed that OPRS service was helpful and their children improved a lot. One parent (P0521) stated that OPRS service was comprehensive with huge developmental outcome shown.

The waitlist system

164. All four parents in parent group 2 and one parent in group 4 (P0415) agreed that the waiting period was short and did not give further comment on the waitlist system.

The lesson observation and training offered

165. Four out of fourteen parents (cases P0207, P0208, P0209 and P0416) had observed the training sessions upon invitation by the therapists. But at the same time, one parent (case P0209) had never received any invitation at all. All three parents who had had lesson observation agreed that it had facilitated their understanding and application of training skills. Parent P0208, who was a working parent, made adjustment at work to attend the sessions. The child's grandmother would replace her when she was unavailable. As for parent P0209, he was only invited to observe the centre-based training sessions but not the school-based ones. It was obvious that arrangement of lesson observation can lead to higher parents' involvement in training. Parent P0416 would have classroom observation regularly and observed that her child was more relaxed in the familiar school environment.

166. All four parents in group 2 were generally satisfied with the training. The use of frequent assessments to keep track of the child's progress was mentioned by Parent P0207. In her child's situation, the training schedule and objectives were adjusted regularly based on the results of the assessments. As for parent P0208, although he was absent from the training sessions, he maintained contact with the therapists on phone and sought their advice on how to handle the child's emotional issues. The parent found such communication effective.

167. Regarding the centre-based training, three out of four parents in group 2 were satisfied with the arrangement. One parent (case P0206) appreciated that the therapists constantly informed the child's class teacher of the training progress and schedule, and thus the class teacher would remind the parents to attend the centre-based training. Another parent (case P0207) acknowledged the effort of the staff to tactfully schedule two sessions on the same day to save her time on transportation. The small class size for training was also highlighted by a parent (case P0208). Almost all parents were aware that the centres were better-equipped and that the centre-based training sessions were arranged for the benefits of their children. Only one parent (case P0209) had more difficulty in travelling to and from centre due to the child's tight schedule.

168. For group 4, the child of parent P0415 received trainings from ST and OT, as well as group training in the centre for every 2-3 months. The child of parent P0416 received training from OT. The child of parent P0418 received trainings from PT, ST and OT once a month in the centre, as well as SCCW twice a month for training in the centre and once in a month in the school. There were compulsory group training sessions for K1-K2 students, and primary school preparatory training for K3 students. He stated that there were not many on-site professional services. However, the training was provided according to the individual development of his child.

169. For parent group 5, the children of six parents received training from OT. The children of four out of six parents (P0519, P0520, P0521 and P0524) received training from ST. The children of four out of six parents (P0519, P0521, P0522 and P0523) received training from PT. The children of both parents P0519 and P0522 received trainings from SCCW.

170. Parents P0415, P0416 and P0418 had the number of training session for their children reduced because their children had shown developmental improvement; for example, the child of parent P0416 received less OT training and the remaining hours were passed on to other severe children. This showed that the training session was delivered according to the developmental

needs of the children. Parent P0416 appreciated this arrangement, suggesting that the service should match with the individual development of the child, rather than according to a fixed schedule. This helped her to understand the stage and situation of her child as well.

The different service delivery modes

171. Two of the parents (P0416, P0418) agreed with the necessity of centre-based training because the room setting was absented in schools and there was group training provided in the centre with children sharing similar levels of disabilities, although it took long travelling time to the centre far away from their homes. Three out of the four parents in group 4 (P0415, P0416, and P0418) agreed that there was more sufficient equipment in centre than in school. Both parents P0416 and P0417 suggested there were more space in centre than in school.

172. In group 5, one parent (P0521) agreed that centre-based training was necessary with its more specialised training, more time for communication with the SCCW, and more advanced equipment. In terms of communication with the professionals, parent P0524 also agreed that the more interaction with the OT in the centre helped her understand the improvement of her child. Parent P0520 found centre-based training effective and more important than school-based training for its lack of disturbance from peers in training compared to the situation in kindergarten. Parent P0524 also suggested that centre-based training, for example, speech therapy, grouped children with similar levels of disability together but school-based training would not, so the children could interact with peers for their social developments. Parent P0522 also noted that the centre had more sufficient equipment than the school, however the centre located far away from her home and thus, she needed to cut the nap of her child and took her back to school after one of training.

173. On the other hand, both parents P0415 and P0417 did not think that centre-based training was necessary because of its similarity to school-based training. Due to the sufficient resources and space provided in the IP school,

parent P0523 only attended centre-based training two times. In group 2, one parent (case P0209) showed her preference in school-based training due to its convenience. The other parents in group 2 did not express their views on this issue.

174. In group 4, both parents P0416 and P0417 noted that there were parent talks provided by the team, but there were far from their home and there was less support for fathers. Parent P0417 also noted that the team was providing fewer activities for the parents recently. Parent 0415 was not aware of the parent talk offered by the team but noted they were given an assessment form as a reminder for their children's conditions, however there was not much parental support. For group 5, five out of six parents (P0519, P0521, P0522, P0523, and P0524) attended parent talks on emotion management and parenting skills before. One parent (P0520) never attended parent talk.

175. Both parents P0417 and P0418 received home training. Parent P0417 was provided an information sheet given out by the professionals with developmental tasks assigned. Parent P0418 was also given home training task monthly.

176. Three of the six parents in group 5 (P0519, P0520, and P0524) were visited by the professionals in their homes. Parent P0519 was visited twice from both OT and ST. She was also visited by class teacher for every semester to check the activity space and living condition of her home, as well as the developmental needs and progress of her children. Parent P0520 was visited once to see the cooperation and preparation needed for OPRS service before the service began. Parent P0524 was also visited to let the professional understand the situation and family background of her child before the start of the programme. While the other three parents (P0521, P0522, and P0523) did not have home visit.

177. In group 4, both parents P0415 and P0417 suggested that team would provide a form to them with information on the number of training sessions. Parent P0415 was satisfied with the coordinator in the team; and maintained a

close communication with the staff there for child's condition and future developmental plan, including reducing number of training sessions because her child was showing improvement. Parent P0417 also agreed to reduce her child's training session because of her child's improvement after discussion with SW. On the other hand, parent P0418 discussed her child's condition with the therapists and increased the ST training sessions afterward, showing the flexibility in the lesson arrangement to meet the child's developmental needs.

The communication with different professionals

178. For parents in group 2, training handbook was used most frequently as a tool of communication by working parents (cases P0206, P0208, P0209). There were also times when the parents met the therapists face-to-face or talked on phone. Apart from that, they had made use of other opportunities, for example, parent-child activities and parent talks to exchange information with the therapists. One parent (case P0209) commented that the parent talks organised by the centre were of high quality and specifically catered for the parents' needs. The small quota (usually < 20 participants) for the talks allowed more interaction between the speaker and the participants. Parents P0416 and P0417 and P0418 in group 4 discussed the improvements of their children with the therapists after training sessions. Parent 0416 was contacted by the centre half-yearly while parent 0417 was contacted once three months. Parent P0418 reported that the therapists discussed the situation of the case of his child and reduced the training session for the next quarter of the year. All four parents in group 4 (P0415, P0416, P0417, and P0418) suggested that the centre communicated with the school and parents separately, with no three-party conference involved.

179. Besides the therapists, two parents (cases P0207 and P0209) also mentioned the involvement of social worker in OPRS. One of them sought advice from the social worker on school selection matter while the other one on how to handle parenting stress. The parent found it useful and the social worker helpful. Both parents in group 4 P0415 and P0417 also appreciated

the helpful support from the social worker. Parent P0415, P0417 and P0418 would communicate with the social worker on skills on taking care of the children, as well as preparation for primary school. Parent P0418 reported that he had seldom chance to meet with the social worker; parent P0417 also noted that they communicated with therapists more frequently than with the social worker. Both parents P0416 and P0417 noted that there was no home visit done by social worker.

180. However, all four parents on group 2 seemed to have no idea about the roles of CP and EP in the service, probably because CP and EP are mostly deployed in providing consultation to teachers.

181. On the other hand, one parent in group 5 (P0523) appreciated his communication with the psychologist in the kindergarten on the condition of another child. The child was diagnosed with Asperger's disorder and was the sibling of the target children. The parent was told that the target child might be influenced by his sibling, so the parents learnt some skills taking care of both children from the psychologist. Parent P0523 appreciated the school considered the interest of his child.

182. Both parents 0415 and 0417 were informed by the coordinators regularly on their children's improvements and would discuss the future developmental plans with the school personnel. They appreciated this arrangement, allowing them to understand which developmental areas of the children need further improvement and the relationship of their children with the peers. Both of them had their children assessed by professionals regularly for future developmental plan. The child of parent P0415 was assessed every two to three months for the planning of the next quarter of the year while that of parent P0417 was assessed twice a year for future developmental plan.

183. One parent in group 5 (P0522) suggested that teachers should have greater understanding on children with special needs so that they could identify suspected case and reported to the therapists and parents.

The support in kindergartens

184. All four parents in group 2 were generally positive about the school support for students with special needs and in providing OPRS. In group 2, two parents (cases P0206, P0208) had had an open discussion with the kindergarten headmasters on the selection of service (IP vs. OPRS) and found it helpful. Three parents (cases P0207, P0208, P0209) acknowledged that the kindergartens were supportive and capable in teaching children with special needs (e.g. making special arrangement for the children). However, one parent (case P0207) commented that the kindergarten teachers seemed not to have much knowledge about the training progress and were only responsible for distributing the training schedule to parents.

185. In group 5, P0519 stated that the progress of her child was assessed half-yearly and was reported to the OPRS service team. She then discussed the cooperation on the situation of her child with the teachers. Parent P0521 appreciated that the importance of teachers and principal in the school who collaborated well with the OPRS service team. The class teacher for the child of parent P0521 also discussed the situation of her child with the professional in the team regularly, which contributed to the speech improvement of her child a lot. The class teacher proactively attended course on teaching children with special needs once the child of parent P0521 was diagnosed. Parent P0523 suggested that the teachers in the school provided him advice and instructions on the fine motor training for his child.

186. On the other hand, parent P0520 suggested that the comments from the teachers were less useful than those from the professionals in the centre, and there were more supports outside the school. Parent P0522 suggested the class teacher did not perceive the disability of her child and insisted on giving homework to her child. The parent needed to talk to SCCW so as to convince the class teacher to reduce the workload of her child. Parent P0522 also stated that her child was excluded from certain activities in the class by the class teacher. Thus, parent P0522 suggested that teachers should have greater understanding on children with special needs. However, parent 0522 did not

consider change the school as it would be difficult to adapt to the new professionals in the OPRS service.

187. One parent in group 5 (P0524) stated that she received suggestion from the teachers in the kindergarten on the decision of choosing IP service.

Views from the discharged group about regularisation of OPRS in the near future

Review of the existing waitlist system

188. One parent in group 1 (case P0103) pointed out the confusion she encountered in the application procedures. She presented the 'number' issued by Maternal Child Health Centre instead of the CAC number to file an application and was repeatedly told by a person-in-charge in the kindergarten that the parent had made a procedural mistake, resulting in a lot of misunderstanding between the parent and the kindergarten. It appeared that although the application procedures and the required documents had been clearly stated in the application forms and "Notes to Parents", assistance may be still be needed for the parents to understand the application procedures if the present application and referral system is to be maintained.

189. In group 3, one parent (case P0310) suggested the waiting queue was too long, so that upon the child received assessment report, the case should enter to OPRS service instead of waiting for the other subvented services. Another parent (case P0312) also suggested that OPRS should be included as another subvented services option upon receiving the CAC report. The parents should be allowed to locate the kindergarten providing on-site services for possible options.

190. The establishment of the central allocation system or inclusion of OPRS into the current CRSRehab-PS may be a solution to the above concerns. It can also minimise administrative work and maintain fairness and efficiency of application and allocation of case.

Collaboration between therapists and kindergarten teachers

191. One parent in group 1 (case P0101) expressed her concern about the interruption caused by school-based training to the child's normal curriculum in school. As the child was often taken away from class, the parent deemed it necessary for the teachers to provide make-up lessons for the child to compensate her loss. For this reason, the parent later withdrew the child from OPRS to receive similar training in EETC.

Extension of service

192. Three out of five parents in group 1 (cases P0101, P0103, P0105) supported the idea to extend the service for at least 1-2 years (i.e. till P1-P2) to facilitate the children's smooth transition from kindergarten to primary schools, or from SCCC back to mainstream kindergarten. In case P0105, the child was admitted to SCCC in K2. He had improved significantly and was expected to transfer back to a mainstream kindergarten to repeat a year before applying for a mainstream primary school. If so, it was anticipated that the child would exceed the age limit of 6 years old by the time he re-entered the mainstream kindergarten. In that year, he would no longer be eligible for OPRS and other subvented services, and would have a 'gap year' before studying P1. Parents considered that support during this transitional period was necessary.

193. There was also opinion about the allocation of funding for students with special educational needs in primary school settings. One parent (case P0103) opined that schools had spent the funding on hiring teaching assistants and purchasing IT equipment while she preferred the funding be used more on procurement of direct service to the students with special needs. She, therefore, suggested that the government should allocate the funding to NGOs directly to operate training (similar to OPRS) in primary schools rather than allocating the funding to the schools themselves.

194. Three parents in group 3 (P0310, P0312, P0314) agreed that OPRS should not set an age limit for the scheme. Instead, it should provide preschool service to those children who reached the age of six but were still attending kindergartens, because termination of services would affect the training and developmental progress of the child.

Enhancement of the support services for parents

195. One parent in group 1 (case P0101) preferred that more talks could be arranged in the evening to improve the attendance of working parents. Besides, that parent also suggested that lending of the training tools could facilitate parents to conduct home-based training.

Adjustment of training plans

196. One parent of a severe ASD child in group 1 (case P0105) proposed to increase the minimum level on the number of training hours and have the agreed level for each child clearly indicated in the training proposal. To have the training format (individual/group) and duration of each session clearly specified in the training proposal may be able to minimise the misunderstanding between the parents and the NGOs. Her suggestion to increase the number of training hours and frequency received positive responses from the other parents. Most of them welcomed this idea but one parent (case P0101) highlighted that the child's capacity to attend more frequent training should also be taken into consideration. Another parent (case P0104) thus proposed to adjust the training plan based on the needs and level of severity of special needs of each individual child to avoid a clear-cut.

Recruitment of therapists

197. One parent in group 1 (case P0105) remarked that from her observation, the number of training hours provided by SCCW was far greater than that of the therapists (ST, OT, PT), probably due to the difference in salaries. The parent suggested to increase the proportions of 3Ts (ST, OT, PT) for Individual Education Services to guarantee that sufficient professional training can be provided to the children. Another parent (case P0104) shared the same view on the reasons for lower level of therapist service compared to SCCW services, as the case manager once reflected to her that the recruitment of therapists was rather challenging.

198. With the service coverage expanded, parent P0312 suggested that more resources should be put to expand the training venues and the therapeutic manpower, with social worker involved in an early stage development of the child.

Views from the non-discharged group about regularisation of OPRS in the near future

Extension of service

199. Similar to the discharged group, the strongest request from the parents was to extend the OPRS service to primary school or children aged above six, at least at the transition stage from K3 to P1. Two out of four parents in group 2 (cases P0207 and P0209) proposed this idea and it was firmly agreed by all. Two parents in group 4 (P0415 and P0418) suggested that OPRS services should cover every kindergarten and be extended to primary school.

200. Parent P0415 also suggested that IP service should be a constant service. Parent P0416 suggested that IP service should be provided in an earlier time to improve the abilities of the children while waiting for other services.

Allocation of training and resources

201. In group 2, one parent (case P0206) expected to increase the number of training sessions and another one (case P0207) preferred to extend each training session to two hours if manpower and resources allow. All four parents in group 4 requested more resources and communication on the manpower. Parent P0415 suggested that every kindergarten should have a social worker. Parent P0416 expected more communication with social worker. Similarly, parent P0417 expected communication with the therapists should be reinforced and more regular parent talk should be provided. Parent P0418 suggested that more training and information on children with special needs should be provided to the staff in school. Both parents P0416 and P0418 expected to increase the number and duration of training session. In addition, parent P0416 expected to increase the flexibility of training session hours that the remaining training hours unused by children with improvement could be passed on to other children with greater severity in their conditions. In group 5, both parents P0521 and P0522 expected to increase more OT and PT manpower and services. Having two centre-based training sessions

scheduled on the same day was also proposed to save transportation time for both parents and children in group 2. Regarding the form of training, one parent (case P0209) preferred to have more group training so as to provide more opportunities for the children to socialise with others.

202. One parent in group 5 (P0519) suggested to increase resources for parental education by the therapists. One parent (P0520) expected more communication between the therapists in the service and the staff in CAC on the developmental needs of children. Another parent in group 5 (P0520) expected to have more home visit.

203. One parent in group 4 (P0417) expected more subsidy for expense on the training for the children, and more space for the centre.

Provision of immediate emotional support and explanation of services to parents upon receiving children's assessment reports

204. Two parents in group 2 (cases P0206, P0209) highlighted that parents are supposed to be the most stressful at the time when their children are diagnosed to have special education needs. They, therefore, suggested that emotional support (e.g. counselling services) should be provided to the parents immediately, followed by a detailed explanation of different subvented services (e.g. OPRS/IP/SCCC/EETC) by a social worker so that the parents are able to make the most suitable decision for their children. Besides, the leaflets about different subvented services could be presented in layman's terms to make it comprehensible to general public.

Questionnaire for Parents/Primary Carers

205. 12 parents/carers from each team were randomly selected to complete the parent questionnaires. 112 parents/carers from discharged and current cases in the longitudinal study were also randomly drawn to participate in the study which had a total of 420 copies of parent questionnaires. Parent questionnaires were sent to parents/carers by post from August to December

2017 to collect their information about the children's developmental progress and opinion on the Pilot Scheme (*see* Appendix A). Majority of the respondents were the parents of the children (81.5% were mother and 17.1% were father), the rest of respondents were the significant others of the children (1.4%), such as grandparents. The age of the children was ranged between 2.83 to 7.17 (M = 5.14) and majority of them were male (71.1%). Detailed demographic information of the respondents and their children was presented in Table 20.

Table 20

Demographics information of respondents and their children

	Respondents		Children	
	Frequency	Percent	Frequency	Percent
Gender				
Male	69	16.6	297	71.1
Female	347	83.4	121	28.9
Relationship with Children				
Mother	339	81.5		
Father	71	17.1		
Others	6	1.4		
Marital Status				
Married with spouse	379	91.3		
Single	36	8.7		
Family Income (per month)				
No income, receiving CSSA	24	5.9		
HKD$5,000 or below	10	2.5		
HKD$5,001 – 10,000	17	4.2		
HKD$10,001 – 20,000	116	28.7		
HKD$20,001 – 30,000	82	20.3		
HKD$30,001 – 50,000	89	22.1		
HKD$50,001 or above	66	16.3		
Employment Status				
Homemaker	15	12.3		
Working parent	53	43.4		

Education Level	29	23.8
Pre-primary education or below	3	0.7
Primary education	13	3.2
Lower secondary education	99	23.9
Upper secondary education	164	39.6
Tertiary education	105	25.4
Master degree or above	30	7.2

Instruments

Parents/carers' self-efficacy in childcare

206. *Maternal self-efficacy Questionnaire (MEQ; Teti & Gelfand, 1991).* A self-reported scale consisting of 10-item questions assesses parental self-efficacy in responding to children's emotions and their ability to perform daily routine tasks. The 5-point Likert scale was used ranging from 1 (strong disagree) to 5 (strongly agree). Summing the item scores yield a maternal self-efficacy score. Higher MEQ scores reflected higher level of parental self-efficacy. The original value of Cronbach's alpha of the instrument was .80 and Cronbach's alpha value of the instrument from current sample was .86.

207. *The Early Intervention Parenting Self-efficacy Scale (EIPSES; Guimond, Wilcox, & Lamorey, 2008).* A 16-item scale assesses parents/carers' perceived capability in parenting their children as well as their perceived importance to facilitate children development regardless of environmental influences or constraints, like the availability of community support and family background. The 7-point Likert scale was used ranging from 1 (strong disagree) to 7 (strongly agree). Total scores were computed by summing all items in the scale. Higher scores indicated greater perceived self-efficacy in parents/carers. The original value of Cronbach's alpha of the instrument was .80 and Cronbach's alpha value of the instrument from current sample was .71.

Parents/carers' psychological and physical health

208. *Parental Stress Scale (PSS; Cheung, 2000).* A 18-item scale assesses parents/carers' perceived level of stress in parenting. The 5-point Likert scale was adopted ranging from 1 (strong disagree) to 5 (strongly agree). Total scores were obtained by summing up all items in the scale. Higher scores reflected higher perceived level of stress in parenting. The original value of Cronbach's alpha of the instrument was .89 and Cronbach's alpha value of the instrument from current sample was .87.

209. *Aggravation in Parenting Scale (APS; Abidin, 1995; Hofferth, Davis-Kean, Davis, & Finkelstein, 2003).* A 9-item self-reported scale assesses parents/carers' perceived effectiveness in parenting. Items include measures of how often parents felt angry when taking care of children in past month and how often they perceived their children were much harder to nurture. Parents who report frustration and difficulty in caring for their children are likely to be less effective parents. The 5-point Likert scale was used ranging from 1 (strong disagree) to 5 (strongly agree). Total scores were obtained by summing up all items and dividing the total number of items in the scale. Higher scores indicated high aggravation in parenting. The original value of Cronbach's alpha of the instrument was .69 and Cronbach's alpha value of the instrument from current sample was .89.

210. *General Health Questionnaire (GHQ; Chan, 1993).* A 4-item self-reported scale assesses parents' current physical and psychological well-being, such as their sleeping pattern and motivation. The 5-point Likert scale was adopted ranging from 1 (strong disagree) to 5 (strongly agree). Total scores were computed by summing up all items in the scale. Higher scores indicated higher level of distress and poor general health. The Cronbach's alpha value of the instrument was .66.

Parents/carers perceived effectiveness of the Pilot Scheme

211. *The Effectiveness of Pilot Scheme*. A self-developed scale measures parents/carers' perceived effectiveness and satisfaction in the Pilot Scheme. Items include their perception of children improvement in different developmental areas, preference for service delivery mode, perceived support from NGOs and schools and general experience after participation in the Pilot Scheme. The 7-point Likert scale was used ranging from 1 (strongly disagree) to 7 (strongly agree).

Results

Quantitative results

Perceived child improvement from parents after participation in the Pilot Scheme

212. Descriptive analysis of parents' perceived child improvement in different developmental areas was shown in Table 21. Parents generally reported high evaluation of their child improvement in different developmental areas after participation in the Pilot Scheme, especially in language.

Table 21

Means and Standard Deviations of Parent's Perceived Improvement in Child Outcomes

	M	*SD*
Gross Motor (*N*=405)	5.61	.97
Fine Motor (*N*=407)	5.73	.99
Social-emotional Management (*N*=412)	5.64	1.03
Cognitive Ability (*N*=413)	5.92	.91
Language (*N*=415)	5.99	1.00
Self-care (*N*=400)	5.53	1.15

213. Parents were divided into two service duration groups that one group received service less than 1 year and the other group with more than 1 year to

see whether there was significant difference on parents' perceived child improvement between two groups. The results of the independent sample t-test corresponded with part of the findings from longitudinal study. Findings showed that parents with service more than 1 year significantly reported higher perceived child improvement in gross motor (t (381) = -2.84, p = .005) and self-care (t (376) = -2.12, p < .05) compared to parents who received service less than 1 year (*see* Table 22).

Table 22

Independent Sample T-test Comparing Parents' Perceived Improvement in Child Outcomes Between two Service Duration Groups

	Parents with service less than 1 year			Parents with service more than 1 year			
	N	*M*	*SD*	*N*	*M*	*SD*	*t-test*
Gross Motor	147	5.42	.94	236	5.71	.97	-2.84**
Self-care	138	5.34	1.32	240	5.60	1.03	-2.12*

Note. **p = .005, *p < .05.

214. It might be possible that the child improvement in gross motor and self-care was due to their natural development when they grew up. Therefore, hierarchical regression was further performed to control the effect of the child's age and tested the effect of service duration on perceived child improvement. The results of multiple regression showed that the age of child could not explain the variance of child improvement in gross motor (F (1, 380) = .01, p =.94, R^2 = .00), but the effect of service duration significantly explained 2.1% of variance in the perceived child improvement in gross motor (F (2, 379) = 4.14, p < .05, R2 = .02). That means, the length of participation in the Pilot Scheme predicted the perceived child improvement in gross motor (see Table 23).

Table 23

Hierarchical Regression Analysis of Child's age and Service Duration on the Perceived Improvement in Gross Motor Domain (N=382)

	Model 1			Model 2		
Variables	*B*	*SE B*	*β*	*B*	*SE B*	*β*
1. Age of child	-.00	.05	-.00	-.04	.05	-.04
2. Service duration				.30	.10	.15**
R^2		.00			.02	
ΔR^2		.00			.02	
F		.01			4.14*	

Note. * $p < .05$; ** $p < .01$.

215. However, the results of hierarchical regression showed that the age of child significantly explained 1.1% of variance in the perceived child improvement in self-care (F (1, 375) = 4.04, $p < .05$, $R^2 = .01$). After adding the service duration into the existing model, the total variance being explained by the child's age and service duration increased to 1.8% and was statistically significant (F (2, 374) = 3.49, p < .05, $R^2 = .02$). The service duration explained additional 0.7% of variance in the perceived child improvement in self-care. That means, neither the child's age nor the service duration presented alone could fully predict the perceived child improvement in self-care. Two factors should be considered as a whole to predict the perceived child improvement in self-care (*see* Table 24).

Table 24

Hierarchical Regression Analysis of child's age and service duration on the perceived child improvement in self-care (N=377)

	Model 1			Model 2		
Variables	*B*	*SE B*	*β*	*B*	*SE B*	*β*
1. Age of child	.13	.06	.10*	.10	.06	.09
2. Service duration				.21	.13	.09
R^2		.01			.02	
ΔR^2		.01			.01	
F		4.04*			3.49*	

Note. * $p < .05$.

Perceived support from NGOs and schools

216. Descriptive analysis of parents' perceived support from NGOs' professionals was shown in Table 25. Parents generally reported high evaluation of the professional support from the therapists, social worker, childcare worker and educational/clinical psychologist, especially in speech therapist.

Table 25

Means and Standard Deviations of Parents' Perceived Support from Professionals

	M	*SD*
Social Worker (*N*=412)	5.69	1.15
Speech Therapist (*N*=416)	6.17	.97
Occupational Therapist (*N*=410)	6.07	1.04
Physiotherapist (*N*=393)	5.74	1.14
Clinical/Educational Psychologist (*N*=387)	5.45	3.79
Special Childcare Worker (*N*=409)	6.04	1.03

Table 26

Independent Sample T-test comparing Parents' Perceived Support from Speech Therapist between Two Service Duration Groups

	Parents with service less than 1 year			Parents with service more than 1 year			
	N	*M*	*SD*	*N*	*M*	*SD*	*t-test*
Speech Therapist	149	6.03	1.00	240	6.26	.95	-2.23*

Note. *$p < .05$.

217. Parents from different service duration groups also reported significant difference on their perceived support from speech therapist (t (391) = -2.23, p < .05). Parents who participated in the Pilot Scheme more than 1 year had higher evaluation of the support from speech therapist compared to parents with service less than 1 year (*see* Table 26).

218. The results of bivariate correlation analysis also showed that there was significant relationship between parents' perceived support from three professional therapists and their perceived child improvement (*see* Table 27).

Table 27

Bivariate Correlation Analysis of the relationship between Parents' Perceived Support from Therapists and their Perceived Improvement in Child Outcomes

Variables	Speech Therapist	Occupational Therapist	Physiotherapist
1. Gross Motor	.31*** (*N*=405)	.41*** (*N*=403)	.43*** (*N*=386)
2. Fine Motor	.34*** (*N*=407)	.51*** (*N*=404)	.43*** (*N*=387)
3. Social-emotional Management	.33*** (*N*=412)	.32*** (*N*=407)	.32*** (*N*=390)
4. Cognitive Ability	.39*** (*N*=413)	.38*** (*N*=407)	.30*** (*N*=390)
5. Language	.50*** (*N*=415)	.34*** (*N*=409)	.26*** (*N*=392)
6. Self-care	.33*** (*N*=400)	.38*** (*N*=396)	.37*** (*N*=393)

Note. *** p < .001.

219. Parents' perceived support from speech therapist was positively correlated to their perceived child improvement in different developmental areas, especially in the child's language development (r (415) = .50, p < .001). That means, the higher the parents' perceived support from speech therapist, the higher the child improvement in language they reported.

220. Parents' perceived support from occupational therapist was also positively correlated to the perceived child improvement in different developmental areas,

especially in the child's fine motor development (r (404) = .51, p < .001). That means, the higher the parents' perceived support from occupational therapist, the higher the child improvement in fine motor they reported.

221. Parents' perceived support from physiotherapist was positively correlated to the perceived child improvement in different developmental as well, especially in the child's gross motor (r (386) = .43, p < .001) and fine motor (r (387) = .43, p < .001) development. That means, the higher the parents' perceived support from physiotherapist, the higher the child improvement in gross motor and fine motor they reported.

222. Besides, different service duration groups reported significant difference on their perceived support for parents. Parents who received service more than 1 year described the Project Operators to be more supportive of reporting their child's treatment progress (t (387) = -2.77, p < .01) and became more familiar with their difficulties being countered when taking care of their children (t (389) = -2.38, p < .05) compared to parents who received service less than 1 year (*see* Table 28).

Table 28

Independent Sample T-test comparing the Perceived Support for Parent between two Service Duration Groups

	Parents with service less than 1 year			Parents with service more than 1 year			
	N	*M*	*SD*	*N*	*M*	*SD*	*t-test*
Organisation actively communicates with me about the treatment progress of my child.	150	6.03	.91	239	6.28	.82	-2.77**
The professionals in organisation understand my difficulties encounter.	151	5.89	.88	240	6.10	.83	-2.38*

Note. *p < .05; ** p < .01.

223. Descriptive analysis of parents' perceived support from schools was shown in Table 29. Parents generally agreed that school environment provided sufficient support for them and the development of their child. But no significant difference was found in the independent sample t-test on parents' perceived support from schools between different service duration groups.

Table 29

Means and Standard Deviations of Parents' Perceived Support from Schools

	M	*SD*
Teachers can effectively cooperate the work in the programme. (*N*=415)	6.09	.93
School facilities take students with special educational needs in consideration. (*N*=412)	5.63	1.18
School polices take students with special educational needs in consideration. (*N*=413)	5.78	1.13
School provides sufficient support to my child and me. (*N*=415)	5.82	1.14
There is sufficient communication between school and me. (*N*= 413)	5.86	.98
It is hard for my child to take care of his/her schoolwork and on-site training at the same time. (*N*=413)	3.66	1.67
I feel difficult to pick up my child under the arrangement of his/her training. (*N*=407)	3.47	1.71

Parents' overall satisfaction in the Pilot Scheme

224. Parents reported high level of satisfaction in the Pilot Scheme in general (M = 6.14, SD = .83). The results of bivariate correlation analysis also showed a significant positive correlation between parents' overall satisfaction in the Pilot Scheme and their perceived child improvement in different areas. That means, the higher the parents' overall satisfaction in the scheme, the higher the child improvement they perceived. The relationship between their overall satisfaction and perceived child improvement in language was the strongest among other developmental areas in children (r (413) = .51, p < .001) (*see* Table 30).

Table 30

Bivariate Correlation Analysis of the relationship between parents' overall satisfaction in the Pilot Scheme and their perceived child improvement in different areas

Variables	Parents' overall satisfaction in the Pilot Scheme
1. Gross Motor (*N*=404)	.37***
2. Fine Motor (*N*=406)	.37***
3. Social-emotional Management (*N*=410)	.44***
4. Cognitive Ability (*N*=411)	.44***
5. Language (*N*=413)	.51***
6. Self-care (*N*=398)	.37***

Note. *** $p < .001$.

225. The results of independent sample t-test showed significant differences on parents' overall satisfaction in NGO service and communication between two parent groups with different employment status. Parents who were homemakers reported higher level of overall satisfaction in OPRS services (t (390) = 2.00, $p < .05$) and having more sufficient communication with Project Operators (t (388) = 2.82, $p < .01$) compared to parents who were working adults (*see* Table 31). Therefore, support for working parents from NGOs is needed to provide them with better understanding of the needs and developmental progress of their children.

Table 31

Independent Sample T-test comparing Parents' Overall Satisfaction in OPRS and Communication between two Parent Groups with Different Occupations

	Parents as homemakers			Parents as working adults			
	N	*M*	*SD*	*N*	*M*	*SD*	*t-test*
I am satisfied with the services provided by organisation in general.	177	6.33	.79	215	6.16	.82	2.00 *

There is sufficient communication between organisation and me.	178	6.03	.85	215	5.77	.94	2.82**

Note. * $p < .05$; ** $p < .01$.

Parents' experience in the Pilot Scheme

226. The results of independent t-test showed that there was significant difference on parents' understanding of child developmental progress between two service duration groups. Parents who participated in the Pilot Scheme more than 1 year were more clear about the developmental progress of their child compared to parents who received service less than 1 year (t (384) = -2.61, $p < .01$) (*see* Table 32). So the increased numbers of training and education programmes for parents may help them to be more familiar with their child's developmental progress, especially for those parents who are new to the service.

Table 32

Independent Sample T-test comparing Parents' Understanding of the Developmental Progress of their Child between two Service Duration Groups

	Parents with service less than 1 year			Parents with service more than 1 year			
	N	*M*	*SD*	*N*	*M*	*SD*	*t-test*
I clearly know the developmental progress of my child during the time of the programme	148	5.84	.86	238	6.09	.91	-2.61**

Note. ** $p < .01$.

227. Furthermore, parents generally agreed that the school-based, centre-based and family based service delivery modes could facilitate the development of their child, especially having high evaluation of school-based delivery mode (M = 6.17, SD = .90) (*see* Table 33).

Table 33

Means and Standard Deviations of Parents' Perception of three Service Delivery Modes

	M	*SD*
School-based service delivery mode facilitates my child's development. (*N*=412)	6.09	.93
Centre-based service delivery mode facilitates my child's development. (*N*=405)	5.63	1.18
Family-based service delivery mode facilitates my child's development. (*N*=403)	5.78	1.13

Qualitative results

OPRS in general

228. There were 105 parents further giving their detailed feedback about the Pilot Scheme from the parent questionnaires. 42 parents were generally satisfied with the service. They indicated that their children had significant improvement after participation in the Pilot Scheme. "I felt relieved when I saw my son keep improving" said by parent P223. Besides, 6 parents (P003, P018, P082, P088, P208, P238) mentioned that the Pilot Scheme provided them an alternative way for their children's early intervention. Even they had not yet received other pre-school rehabilitation services, the children could still be able to get appropriate training.

229. 11 parents also appreciated the professional support and effort paid by different therapists. The significant improvement in the children was attributed to the professional training plans designed by the therapists. They showed their respect to different professionals for therapists' unconditional patience and caring to their children as well as providing useful advice to them for home-based training. "I appreciated all the assistance from the Pilot Scheme to improve my child's performance. Some special child care workers

and physiotherapist provided useful advice for me to better understand and resolve different conditions happened in my child." said by parent D033.

The lesson observation and training offered

230. Parent P007 raised the importance of lesson observation by saying "Parents could not understand the weaknesses of their children if they did not attend the lesson observation (as mentioned by the focus group interviews with parents). They also did not know how to perform home-based training to their children when only following the instruction (of therapists) without the participation in lesson observation".

231. Parents pointed out some suggestions for the training offered to them in facilitating the development of their children. Parent L038 suggested therapists to improve parents' participation by having parents' training session to illustrate the training skills and purposes at the time when their children were trained. Parents (P211, P218, L034) suggested to improve the support for home-based training. They reflected difficulties in providing training for their children at home. "The concept and training in speech therapy were quite abstract. I hoped that therapists could provide more concrete methods and training tools for home-based training (P211)".

The different service delivery modes

232. School-based training was the most preferable approach among parents. Parents reflected that the unique on-site training could save their time to escort their children for centre-based training by saying "The Pilot Scheme was suitable for us. It excluded me from bringing my son to centre-based training which provided me with a more flexible schedule. The provision of on-site training also helped my son to be more adaptable to the environment. (Parent P257)".

233. 6 parents (P140, P227, P277, P290, P302, D024) raised their concern on centre-based training. 4 out of 6 parents complained about the location of the

training centre far away from their living places. "The travelling time for my child to receive occupational therapy in centre-based training took 1 hour that my child might feel exhausted after training." said by parent D024. 2 parents (P140, P227) complained that the Pilot Scheme did not take working parents into consideration as they felt difficult in bringing their children to centre-based training. "Centre-based approach did not match the need of working parent in single family. It was difficult for me to find other persons to bring my child to centre-based training. But as the mother of the child, I wanted to have training observation to facilitate the development of my child." said by parent P227.

The support in kindergartens

234. There were 3 parents (P075, P214, D055) indicated the inadequate training space in kindergartens that affected the quality of on-site training for their children (as mentioned by the focus interviews with parents). Parent P214 mentioned the distraction of her child during training session because of the limited space in the kindergarten by saying "School could not provide quiet and toy-free environment for on-site training due to the lack of school space. My child was always distracted by the teaching sound and the toys/books nearby". The provision of mobile training centre may relieve the problem of limited spacing in kindergartens and provide children with a more secured place for training.

235. Furthermore, 2 parents (P001, P318) perceived insufficient support from kindergartens due to the rigid school policy. The child of parent P001 was counted as absence from school because the child participated in the group training at centre. Parent P318 also explained her reason of why the child dropped out of the Pilot Scheme. "The time for on-site training was scheduled at the time when the child was having lessons…My child could not handle the assigned homework and catch up the knowledge learnt from classes during his study in K2…It was the crucial factor for me and my child to leave the service (parent P318)."

Extension of service

236. 6 parents (P110, P198, P244, D016, D036, D037) suggested to extend the service to primary school in providing continuous support for the development of their children and preparation of the transition from kindergartens to primary schools (as mentioned by the focus group interviews with parents). "I hoped that the service could be extended to primary school…It might prevent the regression of my child's performance…his emotions and learning performance might not be affected if the service could be extended to primary school." said by parent D037.

237. 4 parents (P056, P186, P188, D035) also recommended to extend the quota for children with special needs, so that more families could be beneficial from the Pilot Scheme. "I have twins who were both diagnosed with speech impairment. However, only one of my children could participate in the service. It was difficult to find private training for my child because of the inconvenient training location, expensive training fee and the lack of quota for private training." said by parent D035.

238. 5 parents (P028, P088, P090, P164, P279) suggested to exclude the age limit in the Pilot Scheme (as mentioned by the focus group interviews with parents). Parents pointed out that their children used most of time waiting for pre-school rehabilitation services. The age limit for participation in the Pilot Scheme might shorten their children to receive intervention service. Parent P028 mentioned that his child could not receive service in K3 because his child repeated K2 curriculum and already exceeded age 6. He was worried about the development of his child and wanted professionals to follow his daughter's developmental progress.

Adjustment of training plans

239. 19 parents suggested to adjust the frequency as well as the length of training sessions (as mentioned by the focus group interviews with parents). Parents generally wanted to increase the frequency of training to 2-3 sessions

per week. Parents P043, P079 and L021 mentioned that there were insufficient training sessions for their children, especially physiotherapy and occupational therapy. Also, 2 parents (P015, P025) concretely recommended to increase the length of training from 1 hour to 2 hours.

Recruitment of therapists

240. 4 parents (D014, D024, D029, D048) mentioned the high turnover rate among therapists and suggested to recruit more professionals to facilitate the development of their children (as mentioned by the focus group interviews with parents). "Occupational therapist was always changed in my service agency. 3 occupational therapists were changed within 6 months that required my child to adapt to new therapists frequently." said by parent D024. Besides, parent D029 found that there was inadequate numbers of physiotherapists. "The Pilot Scheme could only offer physiotherapy to severe children due to the lack of physiotherapists." said by parent D029.

Summary

241. The parents from focus group interviews and parent questionnaires showed their appreciation on the OPRS service as well as their emphases on the importance of early intervention. Parents from the focus group interviews expressed the possible financial burden without the aid from the OPRS service. Parents from the questionnaires also perceived high children improvement in different developmental areas when they received service for more than one year.

242. The parents were positive about the lesson observation and appreciated the support from the therapists, especially the support from speech therapists. On the service delivery modes, most parents were satisfied with school-based training as the on-site services were provided. However, they expressed their concerns on the limited space in the kindergartens for school-based training. The parents from focus group interviews also preferred centre-based training for the sufficiency of equipment, but some of them were in agreement with the

responses from the parent questionnaires on the inconvenience and long travelling distances to the centres. Respondents from the questionnaires preferred home-based training because the parents could provide training to their children once they were available. However, home-based training was less popular among the parents from the focus group interviews due to the parents' perceived difficulty in handling their children without the assistance from therapists.

243. The parents in focus group interviews and parent questionnaires would like to extend the OPRS service to primary school and continuously provide training for children above aged 6 but still in kindergarten. The increase of training sessions for children and parental talks for parents were also recommended. Parents generally agreed that there were insufficient numbers of professional therapists to provide training sessions and suggested to recruit more experienced therapists in near future.

244. A combination of focus group interviews with teachers and principals and questionnaires of teachers and principals is used. Statistical analysis was conducted on the quantitative questions and qualitative data was analysed to identify the main themes that underlie the responses in the focus group interviews. Sample questions included: how many known cases of children with special needs and their types of special needs in the school, how do teachers work with different professionals (e.g., ST, OT, PT, EP/CP), etc.

Focus Group Interviews with Teachers & Principals

245. Ten focus groups were conducted for the principals and administrative personnel participating in the Pilot Scheme (at least four from kindergartens or child care centres with high participation). There are 45 participants taking part in the interviews from May, 2017 to Feb, 2018. Participants included 23 principals, 18 teachers (including four teachers serving as a service coordinator), one social worker, three administrators, and one nurse. The demographic characteristics are listed in Table 34.

Table 34

Demographic Characteristics of Teacher Participants in Focus Group Interviews

Participant No	KG/KG-cum-CCC	Position	School Background	Sex	Age	Year of Teaching Experience	No. of Students	No. of OPRS Users Served in May,2017 (suspected cases)	No. of OPRS Discharges	No. of OPRS Waitees (May 2017)	IP School	OPRS School	Supporting Service
T0101	KG	Senior Teacher	NGO, low-mid SES, Shatin	F	N.A.	N.A.	Nil	30	Nil	Nil	Y	N	Nil
T0102	KG-cum-CCC	Principal	NGO, low SES, Fanling	F	N.A.	N.A.	Nil	10	Nil	Nil	Y	N	Nil
T0103	KG	Teacher	Non-profit making, mid-high SES, Mongkok	F	N.A.	N.A.	Nil	2-3	Nil	Nil	N	N	Nil
T0104	KG	Teacher	NGO, low SES, Tuen Mun	F	N.A.	N.A.	Nil	Nil	Nil	Nil	Nil	N	Nil
T0205	KG	Principal	NGO, low SES, Tuen Mun	F	N.A.	N.A.	Nil	Nil	Nil	Nil	Nil	Y	Nil

T0206	KG-cum-CCC	Principal	NGO, low-mid SES, North Point	F	N.A.	N.A.	Nil	Nil	Nil	Nil	Nil	Y	Nil
T0207	KG-cum-CCC	Principal	NGO, low SES,	F	N.A.	N.A.	Nil	Nil	Nil	Nil	Nil	Y	Nil
T0208	KG-cum-CCC	Principal	NGO, low SES,	F	N.A.	N.A.	Nil	Nil	Nil	Nil	Nil	Y	Nil
T0309	KG-cum-CCC	Principal	70% NCS students	F	44	1-5 years	124	4 (6 suspected)	4	3	Y	Y	Seminar, workshop, consultation, Collaborative lesson planning
T0310	KG	Principal	Non-profit making, Tsuen Wan	F	51	More than 20 years	130	8 (2 assessed but underreported) (6-7 suspected)	2	2	N	Y	Seminar, Consultation
T0311	KG	Associate Head Teacher	NGO, Tseung Kwan O	F	39	1-5 years	186	9 (2 queuing) (10 suspected)	0	1	N	Y	Workshop, consultation

T0312	KG	Head Teacher	NGO, Tseung Kwan O	F	38	1-5 years		9 (2 queuing) (10 suspected)	0	1	N	Y	Workshop, consultation
T0413	KG	Principal	Non-profit making, Low SES, To Kwa Wan	F	56	More than 20 years	260	10 (10 suspected)	1	0	N	Y	Seminar, consultation
T0414	KG	Principal	NGO, Low SES	F	52	More than 20 years	386	12 (3-4 suspected)	3	3	Y	Y	Seminar, workshop consultation, Collaborative lesson planning
T0415	KG	Head Teacher	NGO, Low SES, North District	F	41	More than 20 years	200	10 (7-8 suspected)	4	4	N	Y	Seminar
T0416	KG	Teacher & SENCO	NGO, Mid-low SES, Shatin	M	26	1-5 years	190	13 (20 waiting, 10 suspected)	3	7	N	Y	Seminar, Workshop, consultation

T0417	KG	Senior Teacher & SENCO	NGO, low SES, Tseung Kwan O	F	31	6-10 years	100	15 (20 suspected)	2	3	N	Y	Seminar, workshop, consultation
T0518	KG-cum-CCC	Principal	NGO, low SES, Fanling	F	65	More than 20 years	120	5	2	0	Y	Y	Seminar, workshop, consultation
T0519	KG-cum-CCC	Principal	NGO, low SES, Tai Kok Tsui	F	53	More than 20 years	100	2	1	0	Y	Y	Consultation
T0520	KG-cum-CCC	Principal	NGO, low SES, Tai Wo Hau	F	38	16-20 years	126	3	5	5	Y	Y	Seminar, workshop, consultation,
T0521	KG-cum-CCC	Teacher	NGO, low SES, Tai Kok Tsui	M	21	1-5 years	100	2	1	0	Y	Y	no
T0522	KG-cum-CCC	Teacher	NGO, low SES, Ma On Shan	F	36	16-20 years	272	10	3	5	N	Y	Seminar
T0523	KG-cum-CCC	Administrator	NGO, low SES, Ma On Shan	F	55	More than 20 years	272	10	3	5	N	Y	Seminar
T0624	KG-cum-CCC	Teacher	NGO, low-mid SES, Wan Chai	F	41	16-20 years	107	5	1	3	N	Y	Seminar
T0625	KG	Principal	NGO, low SES, Yau Tong	F	50	More than 20 years	133	8	0	3	N	Y	Seminar workshop, consultation

T0626	KG	Principal	Church, low SES, Tseung Kwan O	F	52	More than 20 years	140	6	1	3	N	Y	no
T0627	KG-cum-CCC	Principal	NGO, low SES, Sau Mau Ping	F	58	More than 20 years	123	5	0	5	Y	Y	no
T0628	KG-cum-CCC	Teacher	NGO, low SES, Tseng Kwan O	F	50	More than 20 years	118	8	2	5	Y	Y	Consultation
T0729	KG	Teacher	NGO, low SES, Wong Tai Sin	F	36	10-15 years	162	11	0	2	N	Y	Seminar, workshop, consultation
T0730	KG	Social Worker	NGO, low SES, Wong Tai Sin	F	35	6-10 years	256	10	4	5	N	Y	Seminar, consultation
T0731	KG-cum-CCC	Principal	NGO, low SES, Wong Tai Sin	F	N/A	More than 20 years	106	4	1	1	N	Y	Seminar, workshop, consultation, Collaborative lesson planning
T0732	KG-cum-CCC	Teachers & SENCO	NGO, low-mid SES, Aberdeen	F	32	6-10 years	181	12 (5 suspected)	6	6	Y	Y	Seminar, workshop, consultation

T0733	KG	Teacher	Private, mid SES, North Point	F	37	16-20 years	482	10	7	1	N	Y	Seminar
T0834	KG	Principal	NGO, low SES, Tai Wai	F	57	More than 20 years	249	13	6	17	N	Y	Seminar, workshop, consultation,
T0835	KG	Principal	NGO, low SES, Chai Wan	F	33	10-15 years	137	9	7	2	Y	Y	Seminar, workshop, consultation, Collaborative lesson planning
T0836	KG	Teacher	Private, low-mid SES, Kwai Fong	F	48	More than 20 years	268	14	5	4	Y	Y	Seminar, consultation
T0837	KG-cum-CCC	Principal	NGO, low SES, Kwun Tong	F	30	16-20 years	100	4	3	1	N	Y	Consultation
T0838	KG	School personnel	Private, mid SES, Tai Po	F	43	6-10 years	239	9	3	3		Y	Consultation, workshop, consultation, Collaborative lesson planning

T0939	KG-cum-CCC	Administrator	NGO, Hung Hom	F	37	16-20 years	208	15			Y	Y	Workshop, Consultation, Collaborative lesson planning
T0940	KG	Principal	NGO, Wah Kwai	F	67	More than 20 years	240	12			N	Y	Consultation
T0941	KG-cum-CCC	Principal	NGO, Ngau Tau Kok	F	55	More than 20 years	100	4			Y	Y	Workshop, Consultation, Collaborative lesson planning p
T1042	KG	Teacher	NGO, Sau Mau Ping	F	24	1-5		15-20			N	Y	Workshop, consultation
T1043	KG	Principal	NGO, Tsing Yi	F	58	More than 20 years	185	10			N	Y	Seminar, Workshop, consultation, Collaborative lesson planning

T1044	KG	Principal	NGO, Ma On Shan	F	53	More than 20 years	144	14			N	Y	Seminar, Workshop, Consultation, Collaborative lesson planning
T1045	KG	Administrator	NGO, Tsing Yi	F	42	More than 20 years	185	10			N	Y	Seminar, Workshop, Consultation, Collaborative lesson planning

Note: Information on age and teaching experience is not collected in the first two groups of teachers. The first group is the non-OPRS group.

Benefits of OPRS to children

246. Teachers participated in the focus group have observed significant child progress (T0413, T0414, T0415, T0416, T0417, T0729, T0732) on various dimensions within 3-6 months of training in the services as a minimum by T0102, e.g. fine motor skills (T0101), speech development (T0837, T0939, T0941), etc. This positive impact is also reported by parents, SCCW and class teachers (T0103). However a participant (T0837) observed that for children with attention deficits, they may show less remarkable progress. The greatest benefit is to have early identification and early intervention for children with special needs (T0104, T1044). Furthermore, another advantage of on-site training is to facilitate the integration of children with special needs into general classroom. Children felt more connected to teachers and classmates as they received training in a familiar school setting (T0941, T1044). Teachers also identified that parental support and home training made a difference in child outcomes (T0837). For those who are still in denial, parents are less ready for helping their child at home or bring them to centre-based training which may affect the children's improvement. Therapists would do classroom observation because the child might behave differently in individual training sessions and classroom setting (T0730). Some parents understand the need of centre-based training and are willing to attend but some are not due to various reasons, e.g. long working hours, long travel distance between home and the centre, grandparents as the primary caregiver (T0835, T1042). Below are some transcriptions by the teachers:

> *"The greatest benefit of the scheme is children with special needs can be identified early. The professional training is matched with class progress when specialists and class teachers collaborated with one another."* (T0104)

> *"A student with ASD has significant improvement after training. The parents' involvement is crucial. When the parent shows up in sessions and is willing to carry out home training, the student's improvement was expected. In contrast, the parent of a student with hearing impairment is in denial and didn't always come to session. It takes a lot of time for the parents to get a*

*hearing aid for the student or take him to do the assessment. With limited speech, the kid is not able to express themselves and has a hard time controlling his emotio*n." (T0837)

"Children feel less isolated as they do not have to take leave to go to centre for training. Not every child is capable of handling changes; getting trained in a fixed location enhances the treatment outcome." (T1044)

Benefits of OPRS to parents (EOS4)

247. Teachers serve as important witnesses of parental involvement in child and home training. Teachers participating in focus group remarked that parents benefited more if they had observation by attending the on-site training (T0104, T0102, T0309, T0310, T0211). Also, with more communications among therapists, teachers, and parents, it is easier for them to build a trustful relationship (T0101, T1042, T1044). Parents get information about special educational needs by attending seminars, talks and workshops on language development, parent-child interaction, and parenting from the Pilot Scheme (T0101, T0103, T0104, T0310). They generally appreciate the multi-disciplinary effort in early intervention (T0309). Parents also receive emotional support, family counselling and home visit from the team, e.g. SW, ST, etc. (T0836, T0838). The team relays community resources for parents to get extra support. Parents of Non-Chinese Speaking children require additional support in communicating the child progress, training schedule, and attending parental training (T0309). Below are some transcriptions by the teachers:

"Multi-disciplinary team, would involve class teachers and therapists in home visits to help integrate the training and learning in KG. …Parents generally appreciate the all-rounded help and support for the children. …Regular communication (meeting) with parents, teachers and therapists" (T0309)

"*Non-Chinese speaking parents (i.e. ethnic minority groups) may adopt an indulgent parenting style. The team conducts*

parenting workshops for them by the social worker and utilises the resources of service coordinator to help to promote parent training workshops, all parents are invited" (T0309)

"*Emotional support for parents is there. Have training handbook for parents to follow the training progress of the children and parents show confidence in front of therapists, and they are willing to share the SEN conditions of their children*" (T0523)

"*STs go home visit. Group meeting is helpful in supporting the families. The centre holds regular talks for parents to learn more about SEN. The NGO organise a visit to the farm. It creates opportunity for psychologists and therapists to talk about the children's progress during the visit.*" (T0835)

"*Our school holds a workshop, i.e. Channels of Love program (愛的器皿) every six months. Each workshop lasts for eight weeks, two hours each. It mainly serves the parents of OPRS participants or those who are on the waitlist. No children are included. The workshop creates an opportunity for parents to support each other.*" (T0838)

Benefits to teachers (EOS 6)

248. Teachers in the focus groups received support from therapists and professionals (T0101, T0102, T0104) and advice of what to do and which equipment to have for helping children with special needs (T0311), for example spinning plane for motor challenged children from physiotherapists (T0309), and ways to cope with disturbing behaviors in class for ADHD children from psychologists and SCCW (T0310). Therapists also made effort to talk with the teacher briefly after the training sessions on the child progress (T0309). Topics for teacher training seminars/workshops are mainly on identification of special educational needs, learning support, language development, fine and gross motor development, writing IEPs, sensation of children and arts, etc. (T0309, T0310, T0311, T0518, T0729, T0730).

Educational resources are available for teachers to use (T0101). Teachers opined that they are more able to take part in the training if it is an event in the staff development day (T0519), and they are less likely to go outside for training. Some teachers have expressed that consultations are more helpful so that the discussion and advice are tailor-made for the special child (T0523, T1042). A typical collaboration occurs when therapists observe the classroom behavior of the child, then recommend learning strategies (T0720, T0729), e.g. effective seating arrangements designed for children with language delay, emotional cue cards to be used with ASD child or homework accommodation (T0415, T0730, T0941). Another successful collaboration is reported by a senior teacher who oversees the school curriculum and also serves as the service coordinator that she is able to give designed small-group training for the children on her own (T0417). The collaboration has facilitated teachers' skills application and knowledge transfer of what they learnt from professional, and thus enhanced related training in daily classroom teaching. The knowledge transfer and professional collaboration should be further encouraged, e.g. having teachers observe the individual training by therapists (T0521), and active sharing of child information and feedbacks with therapists to give advice to parents (T0729). Below are some transcriptions by the teachers:

> *"For those who have motor challenges, therapists provided professional advice for teachers and recommended useful tools in helping children and recommend different strategies and tools and introduce to the children through games, e.g. straw sucking, moving chair, spinning plane…"* (T0309)

> *"In terms of collaboration in the multi-disciplinary team and the teacher in KG, there are two types: parallel (ST, OT, PT, EP, SCCW) all doing their own duties, and transdisciplinary when all professionals work for one individual child. After learning from the professional therapists, homework accommodation is made, e.g. use a large box for the child to write the Chinese words and use highlighters to help. After getting the professional advice from OT and PT, the school opens up all the classrooms for children to do the morning exercises for 15*

minutes every morning and children can move from rooms to rooms and facilitate their gross motor movement. With reference to the resource materials provided by the NGO, I devise a social skills training workshop for my students in addition to the weekly training from the SCCW." (T0417)

"Therapists might have different understandings of the children's conditions comparing with that of the teachers. I suggest that teachers should observe training sessions to know more about the training conditions of the situation" (T0521)

"I have good communication with the therapist. Every week the therapist comes to train two children in my class. After the session, we discuss and give advice to the parent and me. For example, I slowed down the teaching pace for the child." (T0729)

Special features of OPRS

249. The tripartite model integrating the school, the NGO, and home is very important (T0309, T0310, T0518). The on-site feature of the Pilot Scheme is unique and the school can get professional help specifically for the child. Multi-disciplinary expertise is offered to the school (T0309, T0311, T0312, T0519) and teachers also help therapists in managing the child's behaviors during training sessions (T0519). Effective liaison and communication between parents and teachers, professionals and teachers, parents and professionals can be ensured by the service coordinator (T0101, T0102, T0416, T0732, T0733). Some participants opined that the collaboration between teachers and professionals is undermined if the teacher just brings the child to the training room (T0835) and is not actively consulting with each other about the child's needs and behaviors. Some teachers are brought to EETC for a visit to gain more information about the preschool rehabilitation services in Hong Kong (T0837). Some kindergartens tend to choose NGOs that have a centre nearby the school (T0310, T0311) so that it is more convenient for parents to bring their children to the centre for training (T1043). Below are some transcriptions:

"On-site is good: more specific, have consultation, discuss with teachers case-by-case e.g. child behaves well in training sessions, but not in class, then teachers can consult therapists " (T0518)

"Service coordinator is an experienced teacher within the school and helped to differentiate the curriculum into three levels (high, average, below) and sometimes they conducted social groups and language learning groups. A service coordinator should be employed by the school to monitor the scheme quality." (T0102)

"Service coordinator is responsible for coordination. Service coordinator works with the students individually or in groups; responsible for scheduling with OT/ST, as well as parents (for class observation); coordination. Expect parents to conduct home training twice a month although some of them are busy to do so. There is handbook for the students to record all the training details (i.e. treatment goal). OT &ST will talk to the parents about the progress of the students in training. Also be responsible for home visit and doing (observation and assessment)." (T0416, T0732, T0733)

"KGs chose to collaborate with NGOs which are geographically close to their schools. Additionally, parents are likely to join the centre-based training when the centre is close to the school." (T0310, T0311, T1043)

"Teachers can also provide assistance to therapists, "e.g. a junior ST cannot handle the child, then the teachers teach ST on skills to manage the child and the professionals want to cooperate together with the teacher in helping the child" (T0519)

The details of the consultation sessions (related to EOS 5)

250. Consultation hours are used in multiple ways by the schools. All the professionals are involved, in particularly CP / EP. Most often, consultation is

spent with teachers on updating children's progress (T0312), doing classroom observation (T0311, T0417, T0838), having case conferences (T0523), discussing annual assessment reports (T0414), shooting classroom misbehaviors (T0730), discussing IEP (T0417, T0732)and classroom accommodation for the child (T0837, T0731, T0732, T0733), etc. Teachers also bring suspected cases for the professionals for consultations (T0733). A teacher was not aware of the quota of consultation as 10 (T0413), and some reported that the school had fewer (T0413, T0415). There is a voice to allow more flexibility in the duration of consultation session (T0838). Some teachers had little time to join the consultation (T0835, T0836). Interviewee teachers' transcriptions are listed below:

> *"Consultations can take the form of seminars and workshops for parents and teachers. The psychologist and therapists observed the classroom and advised the teacher how to deal with the suspected cases and the OPRS cases. We also consulted the therapists to give advice on curriculum accommodation and adaptation."* (T0417)

> "*We have consultation sessions for fewer than 10 times, the team explained to the teachers and met with the principal."* (T0415)

> *"Good to have CP consultations that have fixed amount of time, while flexible in the arrangement of the contents and format on need basis, e.g. we needed more CP consultation and then we made the request to NGO"* (T0518)

> *"Teachers write down the conditions of the children, and arrange a meeting with the principal, teachers and therapists to discuss the current trainings. Teachers read the training book of children to know the conditions of the children and talk with therapists on the progress of the children during breaks on issues that are usually asked by parents like promoting to mainstreams school rather than special schools" (T0523) "I bring questions to the consultation, e.g. how to help inattentive child"* (T0730)

> *"Class observation also counts as consultation [for the cases]. The school submits a list of students with special needs. The NGO will then send CPs for class observation. Consultation is conducted once a month. Around 4-5 teachers will stay after school for it. The topics include IEP, the progress of the training. The meeting is around 1.5 hours long. More flexibility on consultation is welcomed. PT or OT conduct meeting with teachers, as well as parents, on specific training, such as fine motor skill. The teachers are too busy. The therapist wasn't able to talk much to the teachers. ST and SCCW normally come once a week and stay for 0.5 day, OT once a month and PT depends on the progress of the students. For IEP meeting, it is challenging to arrange all the teachers to attend as they are busy."* (T0838)

Parents' choice to other subvented services

251. Teachers observed that parents often opted to stay in the Pilot Scheme. Most of the concerns are labeling effect of a special child care centre (T0103, T1042), and keeping the child in a familiar school setting. When parents see progress in children, they will choose to stay in the scheme (T0101). Transcriptions of the teachers are listed below:

> *"One parent of K3 child rejected the allocation to SCCC because the child will be promoted to primary school in less than 6 months' time. One parent of K1 child rejected the offer to SCCC because they saw the progress of the child."* (T0101)

> *"Those who got allocation to EETC mostly opted to stay. One child who repeated K3 transferred to EETC which is just one floor above the school."* (T0102)

> *"A parent rejected the offer of IP and stayed because of not labeling the child. Two parents were still indecisive."* (T0103)

Comparison between the other subvented preschool services

252. Some teachers gave the opinion that IP was better than the Pilot Scheme because daily training was more intensive than weekly (T0309 – an IP teacher, T0312- non IP teacher), and they could understand the child better (T0519, T0520 – both IP teachers). The IP teachers would provide immediate support to the child and to the school (T0312) and would design appropriate IEP for the child (T0835 – an IP teacher). Parents should have an informed choice (T0520). Teacher transcriptions are presented as follows:

> *"IP teachers will put the teaching resources in the classroom, and teachers can include those materials in class, integrating training into daily learning. Daily training is much better than once a week. IP teachers build a better rapport with the children" (T0309).*

> *"In case there are emergencies, IP teachers, as staying in the KG, are available to provide immediate support. OPRS act as transition services provided for children, better than none" (T0312)*

> *"IP, in some ways, is better than OPRS because teachers from IP are more able to follow the students' progress and design curriculum based on the students' needs." (T0835)*

> *"IP is best because it intensely focuses resources on the children on-site. OPRS therapists may not be able to understand the children comprehensively, but better than none." (T0519)*

> *"IP cannot be replaced by OPRS, as a SCCW on-site really knows much deeper about the children and the two services can co-exist, and each has its values" (T0520)*

Improvements of OPRS in future

253. Teachers have suggested that extra personnel should be provided to the school to serve as a service coordinator to coordinate the training for the school

(T0101, T0415, T0518, T0522), a shadow teacher to help constantly in the classroom (T0415, T0416, T0729, T0730, T0731, T0732, T0733), a substitute teacher for the class teacher to take part in training observation (T0518). Teachers also asked for more resources on renovation of an appropriate training room in the school (T0310, T0519, T0520), and extra coordination with the parents (T0835, T0836). A mobile van is mentioned. Most considered it as an extension of the school space (T0104, T0939, T1041). Concerns over the mobile training centres' operational issues, such as parking, were stressed. However, flexibility is requested in the teacher training hours (T0520) that is focused on the problems of the school (T0523).

254. They also recommended that the school and NGO operator should co-sign an agreement which clearly indicates the service provision details (T0414). A central allocation system and a monitoring system may also be required to safeguard the service quality (T0102, T0103). With reference to the training needs and quality, teachers agreed that training should be provided to match the needs of the child (T0835, T0838) and individual training sessions should not be as long as one hour (T0519). The centre-based training should consider the location of the centre and the travelling time from school/home to the centre (T0311, T0518, T0520). The most needed service in centre-based training is PT (T0520, T0835, T0838). A continuous learning support mechanism can be suggested to better use of resources when the child's ability has improved and reached a typical standard agreed by professionals (T0836, T0838). Selected transcriptions are listed below:

"An extra teacher who is well trained in the special education for coordination would be greatly appreciated. Manpower is important, especially in a class with multiple students with special needs. Some staff is stressed out taking care of students with special needs. Not enough training provided for current teachers." (T0415, T0518, T0522) or a shadow teacher is required (T0416, T0729, T0730, T0731, T0732, T0733) and a shadow teacher for ASD cases is required (T0415). *"If more resource is available, we can have a staff to substitute the class teacher and have the concerned teacher to observe the training session"* (T0518) *"At least an extra teacher is needed to keep track of the students' progress. More resource could be allocated to hire more teachers for coordination."* (T0835, T0836)

"A service coordinator should be there to coordinate the service and monitor progress. Additional resources should be allocated to schools to have a service coordinator. EP consultations should be increased." (T0104)

"Instead of taking up too many teaching duties, the coordinating teacher is expected to spend more time on students with special needs. Class teacher barely have the time for this. Besides, a successful coordinating teacher should hold a senior position in the school and receive a certain amount of training on special education." (T0939, T1042)

"Lack space, utilise the medical room and pantry for training, has to coordinate with other colleagues in school on using the facilities" (T0310) *"Not enough space in the school. Needs to re-construct the store room to be a multi-function room"* (T0519) *"There are insufficient resources. SWD should provide more subsidies for the training space and other resources e.g. PT training, not in school as there are no resources."* (T0520)

"*And a mobile van is available for sensory training with appropriate equipment and toys (玩具感統車). That is useful and convenient*."(T0104)

"If the mobile training centre could replace a sensory integration room, it is good to have one around for training. It's because some equipment for PT is hard to install at school and therefore, certain students have to go to the centre for training." (T0835)

"The limited size of the van could affect students' abilities to focus during training. A proper training room should be provided to ensure better treatment outcome.(T0940)"

"*An agreement for services should be signed between the school and the NGO so that clear information on parent workshop, and teacher workshop should be stated*." (T0414)

"*For teacher training, we have accumulated three hours, otherwise it is not feasible to have a one-off session that last for three hours. Each session is around 30 minutes*." (T0520)

"We have workshops on SEN knowledge. But it might be better to have training focusing on the needs of the school" (T0523)

"A centralised allocation system should be made." (T0102)

"We've developed a positive and trusting relationship with the NGO for the past two years. It would be great if the schools could work with the same agency after regularisation." (T1044)

"There are other concerns: for Non-Chinese Speaking parents, the school needs manpower on translation and helping the parents on understanding the services because most of the documents are all in Chinese" (T0309)

"*Monitoring is required in particular when there is a change of therapists, e.g. if the new therapist is not aware of the progress and the training goal does not match the child ability. To solve the space, maybe KG can collaborate and negotiate with primary schools to use their space.*" (T0103)

"Provide parents with much information on different subvented services (OPRS, IP, S, E). The bridge between subvented services should be enhanced, and should allocate children to one of the services instead of waiting in several queues at a time" (T0311)

"Reduce the ratio of teachers to students. More training is needed for teachers. More resources should be distributed to students with suspected special needs (without any diagnoses)." (T0417)

"….centre-based services need parents to take children to centre to receive services. Parents, especially working parents, might not have time to take children there and parents often wonder if certain services can be done on-site. Why do they need to go to the centre?" (T0311) *"The centre needs to be near to the KG"* (T0518, T0520)

"During vacations, the school can open to be the site for services" (T0523)

"The most needed service in the centre is PT training" (T0520)

"If the school doesn't have space, the students will be rearranged to the centre for training. During summer, all the students will go to centres for training. Training in centres may even be better for some cases as they have all the necessary equipment for PT/OT training. Parents don't mind going to centre for training." (T0835)

"Most parents understand it is necessary for some training, such as PT, have to be done in the centre as some equipment cannot be brought to school." (T0838)

"Not flexible on arranging training sessions, e.g. if children are absent, the next child still needs to wait till the scheduled time" (T0519)

"Most of the colleagues agreed that one of the students, who is currently on the waitlist for CAC, does not need any training. It seems that the resources could be used in a better way." (T0836)

"Training amount and intensity should depend on individual needs; more severe cases, such as cases with severe ASD, require more training hours." (T0835)

"Training hours varies from therapies to therapies. It all depends on the students' needs. If a student reaches the standard level, it is suggested that one's training hours could be shortened if a student's ability reaches the standard level. Therefore, more resources could be allocated to some other students." (T0838)

"During the half-year review, it is reported that children made good progress within 3 to 6 months of training because professional training is offered to children directly." (T0102)

Questionnaires with Teachers and Principals

255. Two teachers per participating KGs/KG-cum-CCCs: one being the school coordinator and the other a front-line teacher actively involved in the services were invited to complete the questionnaire survey (see Appendix B). Questionnaires were sent to the 488 KGs and KGs-cum-CCC by post in late August 2017 and collected between September 2017 and February 2018. A total of 278 kindergartens completed and returned two sets of questionnaires with a response rate of 57%.

Participants and Procedures

256. A total of 557 respondents from 278 kindergartens completed and returned the questionnaire (46 of questionnaires were missing of identification information). These were divided in two groups: one group of teachers (*N*= 253) and one group of administrators, including principal/ vice principal/ senior teacher (*N*= 254) (*see* Table 35). The differentiation of the two groups of teacher participant would provide information the roles and views of the front line teachers and the service coordinator who are usually administrators.

257. The former group included 253 teachers, 3 males and 248 females (mean age = 34.96, age ranged from 21 to 60) while the latter group consisted of 254 administrators, 2 males and 251 females (mean age = 43.87, age ranged from 25 to 65). The respondents included 112 principals, 17 vice-principals, 103 senior teachers, 53 nursery class teachers, 44 lower kindergarten teachers, 36 upper kindergarten teachers, 7 of nursery lower class teacher, 10 of nursery upper class teachers, 50 integrated programme teachers and 20 others (i.e. kindergarten curriculum leaders). The educational level of participants was 4 of QKT, 113 of CE, 244 of BEd in Early Childhood Education, 34 of BEd in Special Education, 38 of MEd in Early Childhood Education, 7 of MEd in Special Education, and 19 of others. The teaching experiences (also experience of teaching students with special needs) of participants were classified in five categories: 67(209) were less than 5 years, 64(111) were between 6 and 10 years, 82(47) were between 11 and 15 years, 103(44) were between 16 and 20 years, and 188(95) were more than 20 years.

Table 35

Demographic Characteristics of Participants in Teacher Interviews

	Teachers (*N*=253)		Administrators (*N*= 254)	
	Frequency	Percent	Frequency	Percent
Gender				
Male	3	1.2	2	0.8
Female	248	98.0	251	98.8
Total	251	99.2	253	99.6

Job Title				
Principals	-	-	112	44.1
Vice-principals	-	-	17	6.7
Senior teacher	-	-	103	40.6
Nursery class teacher	53	20.9	-	-
Lower kindergarten teacher	44	17.4	-	-
Upper kindergarten teacher	36	14.2	-	-
Nursery lower class teacher	7	2.8	-	-
Nursery upper class teacher	10	4.0	-	-
Integrated programme teacher	50	19.8	-	-
Others	16	6.3	4	1.6
Total	216	85.4	236	92.9
Education Level (*M*= 3.19)				
QKT	3	1.2	1	4.0
CE(ECE)	88	34.8	25	9.8
BEd (Early Childhood Education)	101	39.9	143	56.3
BEd (Special Education)	19	7.5	15	5.9
MEd (Early Childhood Education)	10	4.0	28	11.0
MEd (Special Education)	1	0.4	6	2.4
Others	9	3.6	10	3.9
Total	231	91.3	228	89.8
Teaching Experiences (*M*= 4.56)				
Less than 5 years	59	23.3	8	3.1
Between 6 and 10 years	47	18.6	16	6.3
Between 11 and 15 years	38	15.0	44	17.3
Between 16 and 20 years	48	19.0	55	21.7
More than 20 years	58	22.9	130	51.2
Total	250	98.8	253	99.6
Teaching SEN Experiences (*M*= 2.42)				
Less than 5 years	134	53.0	75	29.5
Between 6 and 10 years	46	18.2	65	25.6

Between 11 and 15 years	18	7.1	29	11.4
Between 16 and 20 years	19	7.5	25	9.8
More than 20 years	35	13.8	60	23.6
Total	252	99.6	254	100.0

Instruments

258. *The Attitudes toward Mainstreaming Scale (ATMS) – Chinese version (C-ATMS) (Yuen & Westwood, 2002).* The teachers' and principals' attitudes and beliefs toward special educational need students highly influence the success in mainstreaming or inclusion programme in the schools. The Cronbach's α of original scale was .82. There are two subscales used in the assessment, including presumption of leaning capacity and general integration issue. The factor (total 8 items, with Q5,6,7,8,9,10,11,12) was labeled as presumption of learning capacity which reflected the positive attitudes on whether the disability of a student interferes his/her capacity to learn. The Cronbach's α of these eight items was .90. Another factor (total 7 items, with Q1,2,3,4,13,14,15) was labeled as general integration issue which assessed the general principles relating to integration of students with special educational needs. The Cronbach's α of these seven items was .84. The 6-point Likert scale was used for each item (1= Strongly disagree, 2= Disagree, 3= Slightly disagree, 4= Slightly agree, 5= Agree, and 6= Strongly agree). Higher scores represented teachers having more positive belief toward mainstreaming than lower scores. The total raw score for the CATMS used in the assessment ranged from 15 to 90. A total score of each subscale would be calculated by summing the scores across items loading on each factor. The Cronbach's α of CATMS used in the report was.93.

259. *Teacher Efficacy for Inclusive Practice (TEIP) Scale (Sharma, Loreman & Forlin, 2012).* The teachers' and principals' self-efficacy to create an inclusive classroom environment was measured in the scale with total 18 items. The Cronbach's α of original scale in Hong Kong was .89. There were three subscales: Efficacy to use inclusive education, efficacy in collaboration and efficacy in managing behavior. The 6 items (Q5,6,10,14,15,18) that grouped into the subscale of "efficacy to use inclusive education" reflected the efficacy

on helping students with special needs to understand the content in class by different instruments (i.e. designing learning tasks). The Cronbach's α of these six items was .87. The 6 items (Q3,4,9,12,13,16) that grouped in the second subscale of "efficacy in collaboration" assessed the collaboration with others (i.e. professionals) to help the students with special needs. The Cronbach's α of these six items was .84. The 6 items that grouped in the third subscale of "efficacy in managing behavior" was used to measure the efficacy in dealing with students with behavioral problems. The Cronbach's α of these six items was .89. The 6-point Likert scale was used for each item (1= Strongly disagree, 2= Disagree, 3= Slightly disagree, 4= Slightly agree, 5= Agree, and 6= Strongly agree). Higher scores represented to higher level of self-efficacy in implementing inclusive education. Total raw score ranged from 18 to 108. The mean score of each subscale was used for analysis. The Cronbach's α of TEIP used in the report was .94.

260. *Perceived difficulties of implementing inclusion (Tsui, Tse., et al. 2006).* The scale with 14-items measured the difficulties encountered when implementing inclusive practices. Difficulties regarding classroom management included 2 items (Q1, 2) to measure the difficulties faced if individual differences vary greatly (α = .49, because of small number of items). Another subscale of instructional difficulties, including 8 items (Q3,4,5,6,7,8), was used to assess whether lack of resources or trainings for implementing inclusive education (α = .89). The last subscale of difficulties on philosophies differences included 4 items (Q9,10,13,14) which people's mindset affect the implement of inclusive education (α = .74). The principals/teachers indicate their agreement to the items on a 5-point Likert scale with 1 = "Strongly disagree" 2= "Disagree", 3= "Neutral", 4= "Agree" and 5 = "Strongly agree". Higher scores represented to higher level of difficulties perceiving in implementing inclusive education. The mean score of each subscale was used to measure different aspects of difficulties. The Cronbach's α of PDII used in the report was .89.

261. *The Effectiveness of Pilot Scheme.* A self-developed scale measured teachers/principals' perceived effectiveness and satisfaction in the Pilot Scheme. Items included their perception of student improvement in different developmental areas, preference for service delivery mode, perceived support from NGOs and schools and general experience after participation in the Pilot Scheme. The 7-point Likert scale was used ranging from 1 (lowest evaluation) to 7 (highest evaluation).

262. *Professional Support Scale (Lam, 2015).* The scale measured the professional supports from the Pilot Scheme to four parts, including school system, teachers, parents and students, school personnel. The evaluation of the professional support to school system was consisted of four items which asked about the supports to diverse students with special needs, the case referral system and the curriculum development (α in the original study = .76; α in the recent report = .82). The evaluation of the professional support to teachers included five items which assessed on supports to teachers in teaching skills and managing students with emotional/behavioral problems, IEP implementation, talks/case conferences/workshops (α in the original study = .82; α in the recent report = .83). The evaluation of the professional support to parents and children was measured by six items which evaluated on the supports from the Pilot Scheme, such as centre-based training, explaining training progress, providing school-based suggestions (α in the original study = .89; α in the recent report = .85). The last evaluation of the professional support to school personnel with two items which evaluated on the overall supports from the scheme (α in the original study = .54; α in the recent report = .83). The 5-point Likert scale was used for each item (1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly agree). Higher scores represented to higher agreement of receiving professional supports from the Pilot Scheme. Total raw score ranged from 18 to 90. The mean score of each sub-evaluation was used for analysis. The Cronbach's α of the scale was .93.

Results

Quantitative Results

The Descriptive Statistics of Variables

263. Descriptive statistics of teachers' and administrators' opinions on mainstreaming and students with special educational needs are shown (*see* Table 36). The mean and standard deviation of each item of teachers' and administrators' self-efficacy on implementing inclusive education was shown (*see* Table 37).

Table 36

The Means and SDs of Teachers' and Administrators' Attitudes on Inclusive Education (C-ATMS)

	Teachers		Administrators		General	
	M	*SD*	*M*	*SD*	*M*	*SD*
In general, integrated education is a desirable educational practice.	4.97	0.75	5.08	0.68	5.02	0.71
Students should have the right to be in regular classrooms.	5.03	0.70	5.06	0.59	5.05	0.65
It is feasible to teach gifted, normal, and mentally retarded students in the same class.	3.98	1.05	4.05	1.05	4.01	1.05
Educable mentally retarded students should be in regular classrooms.	3.90	1.01	3.95	1.04	3.92	1.03
Students with speech difficulty should be in regular classrooms.	4.72	0.78	4.64	0.78	4.68	0.78
Students with global developmental delay should be in regular classrooms.	4.16	1.10	4.11	1.02	4.13	1.06
Students with borderline developmental delay should be in regular classrooms.	4.61	0.93	4.57	0.86	4.59	0.90
Students with delay in fine motor development should be in regular classrooms.	4.84	0.73	4.79	0.81	4.82	0.77

Students with delay in gross motor development should be in regular classrooms.	4.75	0.78	4.64	0.81	4.70	0.80
Students with Autism Spectrum Disorder should be in regular classrooms.	4.10	0.98	4.04	0.99	4.07	0.98
Students with Attention Deficit/Hyperactivity Disorder should be in regular classrooms.	3.98	0.99	3.83	0.98	3.90	0.99
Students with Special Learning Disabilities should be in regular classrooms.	4.42	0.87	4.36	0.94	4.39	0.91
Students with behavior disorder who cannot readily control their own behaviors should be in regular classrooms.	3.65	1.09	3.58	1.05	3.61	1.07
Students who present persistent discipline problems should be in regular classrooms.	3.98	1.04	3.86	1.10	3.92	1.07
Integrated education will be sufficiently successful to be retained as a required educational practice.	4.68	0.86	4.78	0.80	4.73	0.83

264. About the attitudes on inclusive education among teachers and administrators, they generally gave the highest score on the statement of "Students should have the right to be in regular classrooms." and gave the lowest score on the statement of "Students with behavior disorder who cannot readily control their own behaviors should be in regular classrooms.", showing their agreement that children even with special educational needs should also be educated in regular classroom (*see* Table 36).

Table 37

The Mean and SD of Teachers' and Administrators' Self-efficacy on Implementing Inclusive Education (TEIP)

	Teachers		Administrators		General	
	M	*SD*	*M*	*SD*	*M*	*SD*
I can make my expectations clear about student behaviors.	4.83	0.60	4.93	0.58	4.88	0.59
I am able to calm a student who is disruptive or noisy.	4.43	0.71	4.48	0.82	4.45	0.77
I can make parents feel comfortable coming to school.	4.97	0.55	5.05	0.60	5.01	0.57
I can assist families in helping their children do well in school.	4.60	0.66	4.65	0.74	4.63	0.70
I can accurately gauge student comprehension of what I have taught.	4.74	0.62	4.74	0.68	4.74	0.65
I can provide appropriate challenges for very capable students.	4.81	0.58	4.90	0.60	4.86	0.59
I am confident in my ability to prevent disruptive behavior in the classroom before it occurs.	4.21	0.86	4.25	0.98	4.23	0.92
I can control disruptive behavior in the classroom.	4.37	0.81	4.38	0.99	4.37	0.90
I am confident in my ability to get parents involved in school activities of their children with disabilities.	4.60	0.77	4.72	0.79	4.66	0.78
I am confident in designing learning tasks so that the individual needs of students with disabilities are accommodated.	4.46	0.84	4.63	0.76	4.55	0.81
I am able to get children to follow classroom rules.	4.73	0.66	4.78	0.68	4.75	0.67
I can collaborate with other professionals (e.g. special child care workers or speech pathologists) in designing educational plans for students with disabilities.	4.82	0.80	4.98	0.70	4.90	0.76
I am able to work jointly with other professionals and staff (e.g. assistants,	4.83	0.77	4.98	0.65	4.91	0.72

other teachers) to teach students with disabilities in the classroom.						
I am confident in my ability to get students to work together in pairs or in small groups.	4.83	0.77	4.91	0.74	4.87	0.76
I can use a variety of assessment strategies (e.g. portfolio assessment, modified tests, performance-based assessment, etc.).	4.87	0.64	4.97	0.68	4.92	0.66
I am confident in informing others who know little about laws and policies relating to the inclusion of students with disabilities.	4.46	0.84	4.66	0.82	4.56	0.84
I am confident when dealing with students who are physically aggressive.	4.27	0.88	4.30	1.01	4.29	0.95
I am able to provide an alternate explanation for example when students are confused.	4.76	0.66	4.77	0.73	4.76	0.70

265. About the self-efficacy on implementing inclusive education among teachers and administrators, they generally reported highest confidence in making parents to feel comfortable when coming back to school, but reported to have the lowest confidence in preventing students' disruptive behaviors in classroom (see Table 37).

266. The teachers' and administrators' difficulties on creating inclusive environment in classrooms and schools in each item were reported (*see* Table 38). Each item in the self-developed scale of the effectiveness of Pilot Scheme reported by teachers and administrators was assessed by a descriptive analysis (*see* Table 39).

Table 38

The Means and SDs of Teachers' and Administrators' Difficulties Perceived on Implementing Inclusive Education (PDII)

	Teachers		Administrators		General	
	M	*SD*	*M*	*SD*	*M*	*SD*
There is a wide range of variation (diversity) in class.	3.48	0.90	3.29	0.90	3.39	0.90
There is a high child to teacher ratio. (More students and less teachers)	2.73	0.95	2.50	0.97	2.62	0.97
Teachers cannot handle numerous types of children with special needs at a time.	3.52	0.89	3.60	0.89	3.56	0.89
The financial subsidies and resources are insufficient to support integration (or inclusion).	2.78	0.93	2.96	1.00	2.87	0.97
It is difficult to accommodate the curriculum and teaching materials to cater every child's needs.	3.14	096	3.06	1.02	3.10	0.99
The special education training received is not adequate.	2.97	0.96	2.98	0.99	2.98	0.97
A suitable assessment strategy in measuring children with special needs is not easy to be made.	2.92	0.94	2.92	1.01	2.92	0.97
It is difficult to adapt different strategies to cater every child's need.	3.05	0.94	3.02	1.02	3.03	0.98
The timetable has not provided flexibilities for accommodation.	2.74	0.99	2.68	0.97	2.71	0.98
There is inadequate parental support.	2.75	0.88	2.78	0.91	2.76	0.90
The school curriculum does not support children with special needs for transition to primary school.	2.61	0.97	2.70	0.98	2.65	0.97
The school does not provide adequate assistive technology to support young children with special needs.	3.00	0.89	3.10	0.97	3.05	0.93

Traditional cultural beliefs about elitism (emphasises on educating excellent students and perceives that they are outstanding) still exist among teachers, administrators and parents.	2.12	0.84	2.01	0.86	2.08	0.85
Stereotypical ideas about the abnormalities of children with special needs still exist among teachers, administrators and parents.	2.17	0.83	2.13	0.87	2.15	0.85

267. About teachers and administrators' perceived difficulties in implementing inclusive education, they generally reported that handling numerous types of children with special needs at a time was the most challenging thing under the implementation of inclusive education. However, they had the lowest agreement that traditional cultural beliefs about elitism still exit among teachers, administrators and parents (*see* Table 38).

Table 39

The Means and SDs of the Effectiveness of the Pilot Scheme Perceived by Teachers and Administrators

	Teachers		Administrators		General	
	M	*SD*	*M*	*SD*	*M*	*SD*
Gross Motor	4.87	1.06	4.87	1.05	4.87	1.06
Fine Motor	5.04	0.99	5.04	0.94	5.04	0.97
Social-emotional Management	5.02	0.95	5.07	1.01	5.04	0.98
Cognitive Ability	5.14	0.86	5.09	0.89	5.12	0.87
Language	5.38	0.89	5.42	0.85	5.40	0.87
Self-care	4.86	0.99	4.95	1.09	4.90	1.04
I clearly know the developmental progress of my students during the time of the programme.	5.19	1.00	5.20	1.04	5.19	1.02
School-based service delivery mode facilitates students' development.	5.41	0.90	5.47	0.91	5.44	0.91
Centre-based service delivery mode facilitates students' development.	5.04	0.94	5.11	0.98	5.07	0.96

Family-based service delivery mode facilitates student's development.	5.33	0.95	5.37	1.04	5.35	1.00
Lecture courses for teachers held by organisation enhance my knowledge on students with special needs.	5.43	1.09	5.47	0.97	5.45	1.03
I am satisfied with the quality of professional therapist/ social worker/ childcare worker/ clinical psychologist.	5.76	0.91	5.75	0.93	5.75	0.92
Social Worker	5.15	1.23	5.21	1.13	5.18	1.18
Speech Therapist	5.63	0.89	5.53	1.01	5.58	0.95
Occupational Therapist	5.36	1.03	5.35	1.11	5.35	1.07
Physiotherapist	5.15	1.16	5.20	1.16	5.18	1.16
Clinical Psychologist/ Educational Psychologist	5.02	1.28	5.12	1.29	5.07	1.28
Special Childcare Worker	5.54	1.11	5.58	1.11	5.56	1.11
Organisation actively communicates with me about the treatment progress of my students.	5.45	1.02	5.61	1.03	5.53	1.03
The professionals in organisation provide me with information of other services if necessary.	5.48	0.93	5.64	1.02	5.56	0.98
The professionals in organisation understand my difficulties encounter.	5.40	1.01	5.50	0.99	5.45	1.00
The professionals in organisation make me believe my ability in teaching students with special educational needs.	5.23	1.04	5.30	1.04	5.27	1.04
The professionals in organisation help me find out my undiscovered merit.	4.78	1.10	4.77	1.17	4.77	1.13
There is sufficient communication between organisation and me.	5.32	1.06	5.59	0.98	5.45	1.03
I am satisfied with the services provided by organisation in general.	5.60	0.92	5.67	0.92	5.63	0.92

I can effectively cooperate the work in the programme.	5.71	0.81	5.81	0.84	5.76	0.82
School facilities take students with special educational needs in consideration.	5.15	1.03	5.16	0.98	5.16	1.01
School polices take students with special educational needs in consideration.	5.30	0.96	5.40	0.93	5.35	0.94
School provides sufficient support to my students and me.	5.27	0.91	5.39	0.87	5.33	0.89
There is sufficient communication among school, parents and me.	5.60	0.82	5.61	0.77	5.61	0.79
I have sufficient knowledge in the content of the programme.	5.38	0.92	5.63	0.84	5.51	0.89
I clearly understand the differences between the programme and other pre-school rehabilitation services provided by Social Welfare Department.	5.22	1.01	5.59	0.89	5.40	0.97
The government devotes adequate resources to children with special educational needs.	3.86	1.98	3.94	1.41	3.90	1.40
I become more confident in handling the developmental needs of my students after participation in the programme.	4.98	0.94	5.04	1.01	5.01	0.98
I am satisfied with the programme in general.	5.38	0.97	5.44	1.01	5.41	0.99

268. About the significant improvement of students perceived in different developmental areas after participating the Pilot Scheme, the teachers' and administrators' gave the highest score on language (*M*= 5.40), and the lowest score on gross motor (*M*= 4.87) (See Table 39). They felt that school-based training was the most facilitating service delivery mode on students' development (*M*= 5.44), and the second most facilitation by family-based

service delivery (*M*= 5.35), the less facilitation by centre-based service delivery (*M*= 5.07). About the professionals in the programme, teachers and administrators reported that speech therapist provided the most assistance to students (*M*= 5.58) and also the special child care worker (*M*= 5.56). The clinical psychologist and educational psychologist provided the least assistance to students (*M*= 5.07) which was perceived by teachers and administrators. The mean scores and standard deviations of professional support from the Pilot Scheme reported by teachers and administrators was shown (*see* Table 40).

Table 40

The Means and SDs of Professional Support from the Pilot Scheme Reported by Teachers and Administrators

	Teachers		Administrators		General	
	M	*SD*	*M*	*SD*	*M*	*SD*
Programme helped our school implement need assessment so that we can develop appropriate supports for students (SCH)	3.78	0.69	3.75	0.70	3.77	0.70
Programme provided professional support that is pertinent to the Early Identification and Case Referral System (SCH)	3.88	0.66	3.88	0.71	3.88	0.68
Programme provided professional support on how to cater for the diverse special education needs of children (SCH)	3.91	0.61	3.93	0.59	3.92	0.60
Programme provided support to the curriculum development in our school (SCH)	3.41	0.78	3.40	0.90	3.40	0.84
Programme helped teachers develop appropriate Individual Education Plan (IEP) for referred students (TEA)	3.51	0.87	3.46	0.94	3.49	0.90
Programme provided effective consultation to teachers in case conference (TEA)	3.75	0.63	3.84	0.59	3.79	0.61

Programme provided professional support to teaching and learning (e.g. teaching methods and skills) (TEA)	3.72	0.70	3.78	0.69	3.75	0.69
Programme provided helpful professional advice to teachers on managing students' emotional and behavioral problems (TEA)	3.70	0.73	3.84	0.68	3.77	0.71
Programme conducted useful talks and workshops for teachers (TEA)	3.72	0.80	3.85	0.70	3.78	0.76
Programme arranged appropriate centre-based training as follow-up for the referred students (P&C)	3.94	0.62	3.97	0.59	3.96	0.61
Programme explained clearly the training progress to teachers and parents (P&C)	3.88	0.68	4.02	0.60	3.95	0.64
Programme enhanced teachers' and parents' understanding of the developmental needs of the referred students (P&C)	3.92	0.62	3.99	0.62	3.95	0.62
Programme provided school-based follow-up suggestions that were helpful to students and teachers (P&C)	3.78	0.70	3.88	0.70	3.83	0.70
Programme provided home training recommendations that were helpful to students and parents (P&C)	3.90	0.60	3.99	0.55	3.95	0.58
Programme conducted useful talks and workshops for parents (P&C)	3.77	0.68	3.82	0.64	3.80	0.66
According to self-evaluation, our school has made obvious improvement in supporting students with special education needs (EVA)	3.98	0.61	3.99	0.62	3.99	0.61
The project has supported our school in catering for the special education needs of students (SUP)	3.94	0.63	3.94	0.65	3.94	0.64

Note: SCH = support to school systems, TEA = support to teachers, P&C = support to parents and children, EVA = self-evaluation that the school supports students with special needs, SUP = perceived support from the pilot scheme

The Differences between Teachers and Administrators

269. The Independent T-test was used to measure which group of teachers and administrators (principals, vice-principals and senior teacher) perceived more benefits or more supports from the Pilot Scheme. The differences of support services (e.g. talk, workshop, on-site professional consultation or counselling and collaborative lesson planning) were measured between two groups (front-line teachers and school administrators). A Chi-square test of independence was performed to examine the relationship between groups and support services. The significant difference was found in on-site professional consultation between teachers and administrators, χ^2 (1,469) = 11.33, p = .001 (*see* Table 41). The result showed that administrators had mostly been provided on-site professional consultation of support services in the Pilot Scheme.

Table 41

Results of Chi-square Test and Descriptive Statistics for Professional Consultations by Teachers of Different Ranks

	Groups	
On-site Professional Consultation	Teachers	Administrators
No	70 (62.5%)	159 (44.3%)
Yes	42 (37.5%)	200 (55.7%)

Note. χ^2 = 11.33, *df* = 1. Numbers in parentheses indicate column percentages. *p < .05.

270. Most of teachers did not receive the professional consultation sessions. The on-site professional consultation provided from the professional therapists is also vital in engaging teachers to develop better understandings and skills with students with special needs. This calls the need to establish a service coordinator in the school system.

The Differences between Different Groups of Teaching SEN Experiences

271. Teachers' teaching SEN experiences were divided into five groups to analysis: less than 5 years, from 6 to 10 years, from 11 to 15 years, from 16 to 20 years and more than 20 years. The results showed that the attitude toward mainstreaming between different levels of teachers' teaching SEN experiences was significant, F (4,240) = 3.96, $p < .05$ (*see* Table 42). Post hoc analyses using the Turkey Honestly Significant Difference Test (HSD) showed that teachers with more than 20 years teaching SEN experiences (M = 35.33, SD = 6.00) reported significantly higher scores in positive attitude toward mainstreaming than teachers with less than 5 years teaching SEN experiences (M = 34.67, SD = 5.92). Another finding showed that the self-efficacy of teachers (efficacy for collaboration) between different levels of teachers' teaching SEN experiences was significant, F (4,244) = 3.80, $p < .05$ (*see* table 43). Post hoc analyses using the Turkey HSD showed that teachers with more than 20 years teaching SEN experiences (M = 4.72, SD = 0.56) got significantly higher scores in self-efficacy for collaboration than teachers with less than 5 years teaching SEN experiences (M = 4.65, SD = 0.53) and teachers with from 6 to 10 years teaching SEN experiences (M = 4.70, SD = 0.45).

Table 42

One-Way Analysis of Variances of Positive Attitude and Self-efficacy toward Mainstreaming by Teachers with Different Levels of Teaching SEN Experiences

Source	*df*	*SS*	*MS*	*F*	*p*
CATMS_PLC					
Between groups	4	447.03	111.76	3.96	.005
Within groups	240	7128.17	29.70		
Total	244	7575.20			

TEIP_EC					
Between groups	4	4.13	1.03	3.80	.005
Within groups	244	66.41	0.27		
Total	248	70.54			

Note. CATMS_PLC= the Attitudes Towards Mainstreaming Scale (Chinese version) Presumption of Learning Capability; TEIP_EC = Teacher Efficacy for Inclusive Practice Scale-Efficacy in Collaboration

The Differences between Different Levels of Teaching Numbers of SEN Types

272. The Independent T-test was used to measure teachers' different levels of teaching numbers of SEN types on positive attitude in mainstreaming, self-efficacy in implementing inclusive education and difficulties perceived during creating inclusive environment. The number of SEN types taught by teachers was cut-off by the median (=5). Teachers with teaching 5 or below SEN types was a group of less teaching different SEN type experiences (N = 150) and teachers with teaching 6 or above SEN types was a group of more teaching different SEN types (N = 98). The finding showed that teachers with more teaching different SEN types' experiences indicated a higher score on self-efficacy in implementing inclusive education (including efficacy to use inclusive education and efficacy in collaboration) than teachers with less teaching different SEN types' experiences, t_{TEIP_EII} (243) = -3.20, p < .05; t_{TEIP_EC} (246) = -2.00, p <.05 (*see* Table 43). Teachers with less teaching different SEN types' experiences significantly perceived more difficulties toward implementing mainstreaming (including instructional difficulties and difficulties of philosophies difference) than teachers with more teaching different SEN types' experiences, t_{PDII_ID} (244) = 2.98, p < .05; t_{PDII_PD} (245) = 2.47, p < .05 (*see* Table 54).

Table 43

The Differences of Scores Perceived by Teachers between Less and More Teaching Experience of Different SEN Types by using Independent T-test

	Less teaching different SEN types' experiences			More teaching different SEN types' experiences			
	N	*M*	*SD*	*N*	*M*	*SD*	*t*
TEIP_EII	147	4.67	0.47	96	4.89	0.55	-3.20*
TEIP_EC	149	4.67	0.51	97	4.81	0.55	-2.00*
PDII_ID	147	3.08	0.67	97	2.82	0.67	2.98*
PDII_PD	147	2.51	0.67	98	2.30	0.61	2.47*

Note. *$p < .05$. TEIP_EII = Teacher Efficacy for Inclusive Practice Scale-Efficacy to use Inclusive Education; TEIP_EC = Teacher Efficacy for Inclusive Practice Scale-Efficacy in Collaboration; PDII_ID = Difficulties of Implementing Inclusion-Instrumental Difficulties; PDII_PD = Difficulties of Implementing Inclusion-Philosophies Difference

273. Teachers with more SEN experience and more experience on teaching different types of special needs would be more positive on mainstreaming, higher self-efficacy on inclusive practice and less difficulties on creating inclusive environment in the classroom. Teachers have years of experience in teaching students with special needs are more easily to have better understanding on inclusive education. To foster the sense of inclusion for the students with special needs and the school's adaption, the service coordinator should have SEN educational background and well-experienced in working with students with special needs.

The Differences between Receiving Special/Inclusive Training or Never Receiving Special/Inclusive Training

274. The Independent T-test was used to measure what extent of differences teachers with special/inclusive training when compared with teachers without receiving special/inclusive training. There were two groups of teachers: a group of never received the special or inclusive training ($N = 172$) and a group of received the special or inclusive training ($N = 78$). The Independent T-test performed that teachers receiving special or inclusive training had a higher score on positive attitude and self-efficacy on mainstreaming than teachers

without receiving special or inclusive training, t_{CTAMS_PLC} (243) = -2.77, p <.05; t_{CTAMS_GII} (242) = -2.30, p < .05; t_{TEIP_EII} (244) = -3.58, p =.001; t_{TEIP_EC} (247) = -2.84, p < .05; t_{TEIP_EMB} (248) = -2.41, p <.05 (*see* Table 44). The results further showed that teachers never receiving special or inclusive training perceived more difficulties on implementing mainstreaming than teachers receiving special or inclusive training, t_{PDII_ID} (244) = 2.04, p < .05; t_{PDII_PD} (246) = 3.21, p < .05.

Table 44

The Differences of Scores Perceived by Teachers with Training in Special/Inclusive Education by using Independent T-test

	Never Received special/inclusive training			Received special/inclusive training			
	N	*M*	*SD*	*N*	*M*	*SD*	*t*
CATMS_PLC	166	35.04	5.85	77	36.99	4.73	-2.77*
CATMS_GII	170	29.81	4.91	72	31.32	4.07	-2.30*
TEIP_EII	167	4.68	0.52	77	4.92	0.49	-3.48**
TEIP_EC	170	4.66	0.54	77	4.87	0.47	-2.84*
TEIP_EMB	170	4.42	0.60	78	4.61	0.51	-2.41*
PDII_ID	167	3.05	0.70	77	2.85	0.65	2.04*
PDII_PD	169	2.52	0.68	77	2.25	0.68	3.21*

Note. **p =.001, *p < .05. CATMS_PLC= the Attitudes Towards Mainstreaming Scale (Chinese version) Presumption of Learning Capability; CATMS_GII = the Attitudes Towards Mainstreaming Scale (Chinese version) General Integration Issues; TEIP_EII = Teacher Efficacy for Inclusive Practice Scale-Efficacy to use Inclusive Education; TEIP_EC = Teacher Efficacy for Inclusive Practice Scale-Efficacy in Collaboration; TEIP_EMB = Teacher Efficacy for Inclusive Practice Scale-Efficacy in Managing Behavior; PDII_ID = Difficulties of Implementing Inclusion-Instrumental Difficulties; PDII_PD = Difficulties of Implementing Inclusion-Philosophies Difference

275. Teachers receiving inclusive/special training showed more positive attitude and higher self-efficacy on inclusive education, and perceived fewer difficulties on inclusive practice. They had trainings on special educational needs that help to facilitate the extension of service trainings in daily school environment. It is suggested that the service coordinator should educate parent on inclusion and carry out inclusive teaching and training in the class.

Qualitative Results

276. There were three open questions in the questionnaires for asking teachers' and administrators' opinions on the Pilot Scheme. The questions included: (a) comments on the programme; (b) the difficulties and challenges encountered in the operation of the programme; (c) comments on regularizing the programme.

The Support from the Pilot Scheme

277. The comments on the programme generally included five aspects: children support, parent support, teacher support, professional support and government support. A total of 195 participants answered this question.

Support to Children

278. About the support to the children, 78 of participants (40%) felt that the Pilot Scheme can help the children, such as children have trainings through early intervention and fully supported by the therapists. One of administrators stated that OPRS is a good scheme that children with special needs can have early intervention and trainings in the critical period of early childhood (P10017). A total of 22 participants felt being supported from the therapists who provided the professional suggestions and skills. An administrator admired that the service team had professionals who provided support to the children, parents and teachers (P04011).

> *"The scheme helps the young children with special need who can receive training earlier. It avoids passing prime and waiting the service. That's a great service plan..."* (P10017)

> *"I appreciated that the professionals were recruited in the service team. Instead of benefits to the students, parents also received the support. The teachers and both of students and parents with non-OPRS were benefited…"* (P04011)

279. However, eight participants (4%) mentioned that there was not sufficient support to the children, including five teachers and three administrators (P04014, T07008, T02012, P14012, T15013, T03016, P09004). Some were concerned about the therapists' insufficient support to the children, such as insufficient understanding to the children because they come to school only one to two days a week. In addition, some training areas were not enough to the children, like gross motor, fine motor, and social skills. A teacher mentioned that the children got only supported from special child care worker and speech therapist while there was lack of training in gross motor and fine motor domains (T02012).

> *"The scheme can provide the support to the young children which avoids wasting time, especially mostly supported from SCCW and ST. However, there was not significant progress on gross motor and fine motor…"* (T02012)

Support to Parents

280. About the support to the parents, 24 of participants (12%) appreciated that the parents understood more about their children and the treatment progress of the children after participating the scheme. One administrator appreciated that the scheme provided the support in school that benefited the parents who can reduce the traffic issue (P07041). Another administrator mentioned that parents received support and education from the scheme to know more about the concrete information related to the service (P15033).

> *"(The scheme) can reduce the traffic problems which are concerned by the parents. The parent support of On-site Pre-school Rehabilitation Service scheme did a great job!"* (P07041)

> *"Parents received support and education (from the scheme) and got more concrete information."* (P15033)

281. On the contrary, a total of 9 participants (5%) thought that there was lack of support to parents (P04014, T09025, T08019, T15020, P09012, P08046, T14002, P12004, T01005). Some suggested that there should be more talks about parenting skills (T15020, P08046, T01005) and highlighting the importance of home-training from the therapists (T08019). Some also mentioned that there were few parents who participate in the training session with the children (T09025, P04014). Two administrators were concerned about the parents' insufficient understanding on the service (P09012, P12004). A teacher suggested that there should be communication between teachers, parents and professionals who design the training plan to share the case in different time points (T14002).

> *"Parents' participation was relatively low. Few parents will accompany with their children to attend the training session for learning parenting skills. If they actively participate in the training, they can use the skills at home to help their children."* (T09025)

Supports to Teachers and Administrators

282. About the support to the school, 22 of participants (11%) reported that they received support from the Scheme. Generally, the participants appreciated the therapists and professionals who gave advice to them for implementing inclusive education and teaching the children with special needs. The therapists provided some concrete skills to deal with the children with special needs under the supports and professional suggestions which mentioned by an administrator (P07028). Instead of the support from the therapists, teachers can understand the training progress of the children through communication with the therapists.

> *"(The organisation) provided a lot of professional suggestions and supports that helped our school to strengthen the confidence on teaching and dealing with the children with special needs. There were concrete skills to help teachers in implementing inclusive education."* (P07028)

283. A total of 45 participants (23%), nevertheless, felt they were not supported under the scheme because of insufficient talks and consultation from the therapists and special trainings. 27 participants wished that the communication between the therapists and the school should be better, especially when discussing with the children's training process and developmental needs. Some of them worried that a frequent turnover of therapists and that a new therapist had to catch-up the case. Some were also concerned about the new or junior teachers could not know how to help the students with special needs and how to implement inclusive education in the classes. One administrator suggested that new teachers should understand the service plan before employed (P12017).

> *"Our school employs new teachers every year. If new teachers can know the service plan before employed, it would be smoother."* (P12017)

Government Support

284. Teachers and administrators hoped that the service system and support from the government could be improved. 83 participants (43%) mentioned that there was not enough support from the government. They suggested that there should be an increase in manpower, especially the coordinator (like service coordinator) and kindergarten social worker (to deal with the family issue). Most of them also suggested that the service quota should be increased for the children in the waiting list.

The Difficulties and Challenges of the Scheme

285. Teachers and administrators had mentioned the similar difficulties and challenges encountered in the operation of the scheme. A total of 285 participants answered this question, 276 of participants found difficulties and challenges while 9 of participants felt that the scheme was very smooth and no difficulties found.

The Arrangement of Service Schedule and Training Venue

286. The greatest challenge stated by teachers and administrators was the arrangement of service schedule and training venue inside the school premises. A total of 144 participants (51%) felt very hard to schedule the students' training time that needed to take into account both the availability of the training room and to discuss with the Project Operators to arrange the training schedule of the professionals. Some of them also worried about the time clash of lessons which might hinder the students' learning progress in class. The limited school space created problems for teachers and administrators when they tried to arrange the training room for the professionals and the students, especially a quiet room for speech therapists and arranging the training room for Integrated Programme teachers and the therapists at the same time. An administrator reported that the limited school space and the difficulty on arranging service schedule as the greatest challenge for them (P03011).

> *"Due to limited school space, it is the greatest challenge that we need to arrange the training venue for social worker or therapist. Also, the date and time of training session are needed to accommodate other schools which increase the difficulty during planning…"* (P03011)

Lack of Resources

287. The second greatest challenge was lack of resources, including financial, manpower and teaching materials. 63 participants (22%) reported that the limitation of manpower that led to the heavy workloads. The workloads included administrative works and coordinative works. The participants suggested that a service coordinator was needed for coordinating the case and communicating with the therapists. Some of them recommended adding a service coordinator with well-experienced on dealing with children with special needs and administrative work (P12020, T04007, P03016, P12017, P04014). A teacher suggested the role of service coordinator should be a well-experienced SEN coordinator as assisting to arrange the training venues and training timetable with the organisation (T04007). The service coordinator also should communicate and cooperate with the therapists to plan

the individual educational programme on each case together (P13012, T14005, P14005).

> *"(Our school) suggests adding a coordinator to follow the training progress of the case after the training from the professionals. The coordinator should be responsible on acting a bridge between the school and the therapists…" (P14005)*

288. Moreover, the teaching materials in schools were not professional and not enough for the training, such as teaching aids for sensory integration (P12021). The teachers and administrators concerned about the children also cannot bring the teaching materials back home after the training.

> *"Our school cannot provide the professional teaching aids, such as climbing frames. The participants of the service are substantially increasing that would become the challenge on manpower."* (P12021)

Few Qualified Teachers

289. Few qualified teachers were identified as the third greatest challenge. A total of 48 participants (17%) thought that some new or junior teachers without receiving special and inclusive trainings found difficulties on implementing the inclusive education in the classroom (P14004). They felt that it was difficult to understand the needs of children with special needs.

> *"The teachers found difficult to master the training progress of children with special needs. It might be not efficient on cooperation with the training in the class."* (P14004)

Other Challenges

290. Other challenges included the therapists' turnover problem, lack of communication between therapists and schools, the limitation of service system, parents with insufficient knowledge and skills, and lack of training sessions. 38 participants (13%) stated that therapists were unstable or some were

part-timers. The quality of therapists was not consistent that some were junior and some were senior. The participants felt that they did not know the progress or contents of the training due to lack of communication with therapists or lack of time on discussing the case (T03008). A total of 31 participants (11%) were concerned about the problems of service system. The problems generally consisted of limited service quota, too many parent talks, unpredictability on the exact number of service targets, problems of student-to-teachers ratios, failure on early intervention for the children in waiting list. 29 participants (10%) considered the position of parents. Teachers and administrators felt that parents did not fully understand the service, such as giving up other services that is more suitable for children, enquiring services a lot, absence on trainings and showing very dependence on the therapists and schools (P08019). They also mentioned that some parents did not have sufficient knowledge on SEN and emotional management skills. 11 participants (4%) reported that there were some problems of training hours and training sessions for the children, such as overlong training hours, insufficient training hours each month.

> *"It is difficult to communicate with professionals about the training progress of the student regularly."* (T03008)

> *"…Parents did not understand about SEN. The service is dependent on home-trainings that are provided from parents. If parents skipped the home-training, the improvement would be limited."* (P08019)

Regularisation of OPRS

291. Total 258 of participants answered this question, including 124 of participants who agreed on scheme regularisation (48%), 8 of participants who disagreed on scheme regularisation (3%) and 126 of participants who did not specify on Scheme regularisation (49%).

Agreement on Scheme Regularisation

292. A total of 124 teachers and administrators mentioned that the Scheme was beneficial to children and should be implemented in the mainstreaming. They reported that the greatest benefit is to have early intervention for children with special needs. Most of participants observed that the children had a significant progress.

Disagreement on Scheme Regularisation

293. Eight teachers and administrators were not satisfied in the Scheme. They stated that the government should put more resources on optimising the Integrated Programme rather than starting a new scheme. Some of them suggested that the scheme of OPRS could be combined with Training Subsidy Programme (TSP).

Not Specified on Scheme Regularisation

294. 126 participants believed that successful regularisation of the scheme depends on some factors. Most of them gave the suggestions to improve the scheme if regularising it. The suggestions were as similar as the comments on the programme. Generally, the teachers and administrators gave the following suggestions: increasing the service quota, increasing the manpower (e.g. service coordinator and kindergarten social worker), increasing the training sessions, offering more space for the training, adding funds on acquisition of teaching aids for the schools, offering the report of children's training progress from the therapists, enhancing the communication with the therapists and providing social skill trainings for the children.

Summary

295. As with quantitative focus group's findings, our qualitative questionnaire results reveals that the lack of training space inside the school premises was considered as the greatest challenge for the schools. The limited school space created problems for teachers and administrators when they tried to arrange a room for the professionals and students for training. Some teachers and

principals from the focus groups agreed that the provision of a mobile van is able to resolve the spacing issue. Furthermore, the van is also able to provide a quiet environment for training such as speech therapy. Concerns over parking were expressed in the focus groups, however. Some argued that teachers were less likely to be informed of the children' progress if most of the training was conducted in the van.

296. Some teachers from the focus groups stated their workload is heavy and are unable to provide more support to students with special needs due to additional administrative work created by the Pilot Scheme. The results of our questionnaire provided empirical support to this view. Compared to administrators, teachers received less on-site consultation from professionals. Some teachers claimed that they rarely have time to talk to the therapists as they spend most of the time teaching in the classrooms. In light of this, some suggested that a service coordinator, who is well-experienced and receive special education training, is needed to ensure smooth coordination, as well as communication, among different parties. Our findings suggested teachers who receive no special education training perceived more difficulties on implementing inclusion, especially with instrumental difficulties and difficulties on dealing with philosophical differences. Conversely, teachers with special/ inclusive trainings have higher self-efficacy on implementing inclusion and are more positive on mainstreaming than teachers without similar training. The service coordinator also plays a vital role in designing curriculum for children with special needs. In order to provide better support, the service coordinator is deemed to be essential and their involvement in academic teaching should be reduced.

297. All in all, our findings reveal both teachers and principals thought highly of the scheme. School-based training is deemed as the best kind of service delivery mode and their students' improvement in various domains, especially in language skills, was observed. Among different professionals, teachers and administrators considered both ST and SCCW the major source of support provided to students with special needs.

Chapter 7 Study with Project Operators in the Pilot Scheme

298. A mixed method of self-reported questionnaires and focus group interviews is used to collect quantitative and qualitative data from administrators and professionals from the Project Operators. The questionnaires were distributed to the administrators and professionals of the operators in February 2017. The consulting team completed 15 focus group interviews with professionals of Project Operators from February to April 2017. Two rounds of focus group interviews with administrators from 16 Project Operators were conducted in September-October 2017, and in January-February 2018 respectively.

Questionnaire with Administrators and Professionals

299. The research team developed a self-constructed evaluation form for the programme implementers to evaluate the implementers of their perception on the effectiveness of staff deployment, services rendered, and service mode adopted. The objective is to investigate the effectiveness of staff deployment, perception on effectiveness of services rendered and service mode adopted. A total of 124 participants returned the questionnaires, including 16 administrators and 108 professionals.

300. The first part includes 32 items extracted from the Recommended Practices suggested by the Division of Early Childhood (DEC) of the Council of Exceptional Children (2014). The DEC Recommended Practices inform the practitioners and families about the most effective ways to enhance the learning outcomes and facilitate the development of young children from birth to five years old, who have or are at-risk for developmental delays or disabilities. The questionnaire is divided into three parts: (a) items related to practices of early intervention, (b) open-ended questions on effectiveness and implementation of the project, and (c) demographic details of the organisation and the project team. A copy of the questionnaire is attached as Appendix C.

Items of the DEC Recommended Practices (Division of Early Childhood of the Council of Exceptional Children, 2014)

301. Thirty-two items from the DEC Recommended Practices were included. These items cover seven areas: leadership (6 items), assessment (3 items), environment (4 items), family (4 items), instruction (4 items), interaction (4 items), collaboration (5 items), and transition (2 items). Each item is rated on a 7-point scale (from (1 = strongly disagree, 2 = disagree, 3 = Slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = strongly agree). The Cronbach's alpha coefficient is 0.953 for the administrators and 0.964 for the professionals which indicate that the reliability of the items is satisfactory.

Demographic Data of Participants

302. The professional role of the 124 participants is as follows: 16 administrators completed the questionnaire (15 social work professionals, 1 from other professional); the other 108 participants included 15 occupational therapists (13.9%), 10 physiotherapists (9.3%), 11 clinical/educational psychologists (10.2%), 23 social workers (21.3%), 22 speech therapists (20.4%), and 27 special child care workers (25%).

Findings from the Questionnaire

303. Both the administrators and the professionals agreed to the items in the areas of Assessment and Interaction with the highest rating, and slightly agree to the items in the area of Environment with the lowest rating. The Project Operator teams conduct assessment to identify the child's strengths and needs, to formulate learning targets and individualised planning, to monitor child progress and revise instruction and intervention. They also provide responsive interactional practices that facilitate children's cognitive, emotional, language and social development by using appropriate strategies which promote specific child outcomes. These strategies include responding contingently to the range of the child's emotional expressions, using language to label and expand on the child's requests, needs, preferences, or interests,

joining in and expanding on the child's focus, actions, and intent through play and social activity, and encouraging the child to initiate or sustain positive interactions with others through modeling, teaching, feedback, or other types of guided support. However, they feel less possible to modify or adapt the physical, social, and temporal environments to promote children's access to and participation in learning experiences. It is also challenging to create environments that provide opportunities for movement and regular physical activity to maintain or improve fitness, wellness, and development across domains. Table 45 presents the descriptive statistics of the DEC items. No statistically significant difference is found in the eight DEC areas among organisational experience in operating other subvented preschool rehabilitation services. No significant difference is found in the DEC areas among different groups of professionals.

Table 45

Means and Standard Deviations of the DEC Items

DEC Areas	Administrator (*N*=16)		Professional (*N*=108)	
	Mean (Ranking)	*SD*	Mean (Ranking)	*SD*
Leadership	6.29 (3)	0.42	5.84 (5)	0.68
Assessment	6.48 (1)	0.44	6.28 (1)	0.71
Environment	5.94 (8)	0.78	5.67 (8)	0.70
Family	6.06 (7)	0.58	5.95 (3)	0.64
Instruction	6.22 (4)	0.46	5.94 (4)	0.64
Interaction	6.39 (2)	0.40	6.15 (2)	0.66
Collaboration	6.14 (5)	0.63	5.84 (5)	0.75
Transition	6.09 (6)	0.61	5.80 (7)	0.84

Focus Group Interviews with Professionals

304. Apart from the quantitative data, the consultant team also conducted a qualitative research by inviting programme implementers from 16 Project Operators to participate in a focus group(s) study. A total of 53 professionals took part in the 15 focus group interviews, including 2 CP/EP, 9 OT, 3 PT, 14 ST, 10 SCCW and 15 SW. The interview lasted about 1.5 hours and each

group usually had about 3-5 professionals from various disciplines. Questions covered five major areas, including general comments on the OPRS, professional comments, collaboration with the parents, collaboration with the schools, challenges and solutions, and suggestions for regularisation of OPRS.

Findings of the Focus Group Interviews with Professionals

305. Qualitative comments for the open-ended questions were analysed using content analysis. Table 46 shows the qualitative feedback and the respective responses from the questionnaire, and Table 47 summarises additional themes raised in the focus group interviews.

Table 46

Qualitative Comments Generated from the Questionnaire

What are the strengths of your organisation in addressing the goals of OPRS on helping children, parents and teachers?

1. A tripartite approach (school, community, family) in building collaboration with parents and teachers (82/124)
2. A multi-disciplinary team of occupational therapists, physiotherapists, speech therapists, special child care workers, social workers and teachers to provide assessment and training, and monitor child progress (63/124)
3. Rich experience in providing training services to children with special education needs and their families (51/124)
4. An eclectic approach in matching school-based training with centre-based training in similar districts (12/124)

How effective is OPRS as a service for children and families in need?

1. Early intervention for children while they are waiting for other rehabilitaton services (95/124)
2. Convenience to parents when children have school-based training (94/124)
3. Professional consultations and talks/workshops with teachers enhancing teachers' understanding and competence to include the child in the classroom and school (42/124)
4. Authentic observation in children's natural school settings can inform professionals about children's responses to the intervention (37/124)
5. Good collaboration with parents by inviting them to the school-based or centre-based training and providing them with family-based training to further consolidate the treatment impact (17/124)

How effective is the current service delivery mode, staff deployment, facilities and equipment requisition?

1. Convenient for parents because the majority of the training sessions are held in kindergartens (94/124)
2. Environmental constraints in most of the kindergartens (53/124)
3. Comprehensive training for children with three intervention services by occupational, physio- and speech therapists (27/124)
4. District-based matching for kindergartens and training centres to save traveling time of the professionals (12/124)
5. Experienced and senior therapists, special child care workers and social workers to build good rapport with teachers and parents (11/124)

What are your concerns/difficulties regarding: 1) Manpower; and 2) Finance in running OPRS?

1. Hiring therapists in particular physiotherapist (74/124)
2. Few kindergartens have an appropriate room for individual trainings and for the team to store teaching aids and equipment (45/124)
3. Great variation of cases and locations of the kindergartens posing challenges in coordination and communication (31/124)
4. Limited office space for the team in the organisation due to the low rental allowance (22/124)
5. Meeting the output standard of 10 consultations for teachers in particularly those kindergartens which have few cases (20/124)
6. Lack of training centre designated for the Pilot Scheme (14/124)

7. Little time allocated to counsel and reach out to the parents because the counselling role of social worker is less recognised (12/124)
8. Some absentees in centre-based training sessions which is a huge waste of professional manpower (8/124)

Please comment on the future design and implementation of OPRS as a regular scheme to be run in future.

1. A guideline for the notional establishment of the professional team (59/142)
2. A budget for kindergartens to renovate a special training room and purchase training equipment (44/142)
3. A central allocation system (e.g. CRS-Rehab) to be implemented and matching the location of the home/school and the training centre (42/142)
4. Teacher consultation hours to be flexible, e.g. on a 15-mins basis (28/142)
5. Flexible standard on child training hours to be based on the developmental and training needs (23/142)
6. A reasonable budget to rent an office for the team (26/142) and to provide a training centre (14/108)
7. More teacher training on inclusive education (19/142)
8. A briefing for kindergartens to get their commitment and provide office and training space for the team (16/142)
9. A quota for kindergarten with reference to the total number of children, e.g. for every 100 children, 4-6 quota, fewer than 100, 1-3, etc. (8/142)
10. More quota for the suspected cases (10/142)
11. A systematic monitoring system to ensure quality of service across different teams (9/142)
12. Providing mobile training centres to kindergartens which cannot have an appropriate training room (5/142)

Table 47

Summary of Focus Group Interviews with Professional

Themes	
Effective early intervention enabling children to have services earlier	Get service quickly and have obvious progress Parents with children awaiting placement in SCCC can get more understanding about SEN, support from social workers to have emotional relief and learn how

	to manage the challenging behaviors of their children by observing the therapy sessions
Convenient for parents	Parents save time to take children for therapy in particularly for families with dual earners
Connecting teachers with other helping professionals and making adaptation in child learning	Teachers gain more understanding on how therapists and special education teachers can help children with special needs by observing the therapy sessions or getting advice on curriculum adaptation or daily classroom routines PT explains to teacher that a child is poor in balance and suggests to teacher to include standing with one leg in physical play design SCCW observes a child's classroom behavior and discusses and analyses with teacher SW observes that teacher felt helpless at first when she did not know how to manage the wandering behavior of an ASD child. After getting advice and learning more about TEACCH, teacher made adaptation and gradually the child's behavior is managed appropriately.
School ethos, attitude towards inclusion and knowledge of SEN	Schools are willing to collaborate, offer an appropriate room for individual training, provide storage space for teaching aids if they value diversity, hold a positive attitude to inclusion and have or want to have more understanding of SEN
Active engagement with the school	Active engagement with the school can be enhanced if an information briefing is held at the beginning of the school year. There should be an agreement indicating the interdisciplinary support and the resources for furnishing an appropriate training room and appropriate educational toys and aids the school may receive.
Active engagement with the parents	Active engagement with the parents should be secured by inviting them to observe the training sessions. Some

	professionals wondered if penalty or warnings can be issued to parents absent from the training, similar to the procedures of the Training Subsidy Programme.
Inadequate space for training in the school setting	Most of the training takes place in the principal's office, music room, parent resource room or the resource room for IP teachers, and worst in the end of the corridor or in adjacent to the kitchen or toilet. There are a lot of distractions to the child.
Inadequate office space for the team	The current rental expenses is inadequate for the operators to offer an office for all the team members to do their tasks, e.g. writing reports, formulating training plans, holding case meetings, etc.

Focus Group Interviews with Chief Administrators

306. A total of visits to 16 Project Operators were conducted from late January to late February 2018 after getting feedback from the Project Operators in the second Engagement Meeting to disseminate preliminary findings of the Interim Report on January 17, 2018. During the agency visits, major concerns raised in the Engagement Meeting were discussed: centre-based training, mobile services, service coordinating, etc. It is noted that some of the output standards adopted in the Pilot Scheme may be adjusted in light of operational experience. The following summary included views on the AOS of hours for centre-based services, the usage of mobile van, the role and duties of a service coordinator, progressive training programme, the flexibility in teacher consultation session, and the notional establishment of the professional team.

Comments on the AOS requirement on hours of centre-based services

307. In centre-based services, the training hours provided to children ranged dispersedly from 8 hours to 23 hours under the Pilot Scheme. The availability of Project Operators' own resources is a major factor affecting the provision of centre-based training. Project Operators also stressed that long travelling distance between the training centre and children's home and parents'

expectations on the modes of training undermined children's participation in centre-based training.

308. Project Operators stated that OT, sensory integration and PT trainings were some major types of training provided in the centre-based training. To carry out some of these trainings, large size equipment is required. Some Project Operators have deployed their own financial resources to establish one or a few centres to provide training venues with appropriate training equipment to meet the AOS. For the Project Operator who provided exceptionally high number of centre-based training hours, they have more than 30 centres that could be used for centre-based training and most of the centres were equipped with facilities like training rooms with sensory integration equipment and tools for gross motor training.

309. Eight of the 16 Operators reported that the long travelling distance between the training centre and their home discouraged parents from bringing their children to the centre-based training. For example, a child living in Tuen Mun need to go to centre in Tsuen Wan for the training. Children whose parents cannot afford the travelling have little participation in the centre-based training.

310. Parents' expectations for on-site training also affect children's participation in the centre-based services. Seven of the 16 Operators reflected that parents expected that all trainings to be provided on-site. The service teams have put extra efforts in explaining to parents the benefits of the centre-based training on enhancing their children's developmental progress. Still, an operators reported that 70% of the cases did not receive centre-based training due to parents' rejection, while another reported that 43% of parents did not showed up for the centre-based training. For the Project Operator reporting high numbers of centre-based training hours, most parents were supportive of the training in centres. In a half-yearly survey conducted by the Project Operator on parents' views on OPRS, among 90-98% of the parents stated that they 'agree' or 'strongly agree' with their children participating in the centre-based trainings, many stated that there were more sophisticated and

professional facilities in the centres. This suggests that the availability of training resources of the Project Operators may also contribute to the parents' attitude towards centre-based training.

Comments on mobile training centre and other resources to ensure an optimal training environment in the school

311. All 16 Project Operators responded to the idea on mobile van. According to the comments from the Project Operators, they explored several possible functions of the mobile training centre. First, three of the Project Operators stated that the mobile van is able to provide continuous training for children when the schools are closed during holiday. Second, three of the Project Operators claimed that the mobile training centre could be utilised for logistical purposes such as transporting training materials and equipment. Third, one agency considered the mobile training centre as an extension of the school space, especially for schools with many cases or with limited spaces for on-site training. Fourth, one agency stated that they may use the mobile van for storage of equipment and teaching aids. Fifth, one of the agency operators claimed that the mobile training centre could be turned into a mobile library, in which teaching and training resources could be available for parents and teachers.

312. Concerns over the mobile training centres' operational issues were stressed during the meetings with the Project Operators, however, since most training for gross motor skills and sensory integration requires large equipment, the feasibility to conduct such trainings in the mobile training centre is questioned. Nine out of 16 Project Operators share similar concern. Additionally, the parking problems were deemed as another challenge by the Project Operators. Currently, some vehicles are not allowed to park in certain areas, such as private housing estates. Also, eight Project Operators worried that they would face difficulties in hiring drivers.

313. For the service types provided at the mobile training centres, Project Operators had two suggestions. Firstly, it could be utilised to provide

individual training for children. Due to space limitation, the Project Operators described that only table tasks training, such as fine motor skills and language skills training, could be conducted at the mobile training centre. Alternatively, some Project Operators also suggested that the mobile training centre could be used to provide training and support for parents. Through regular meetings or counselling sessions with parents, families would have a better understanding about their children's development and needs.

314. In addition, the Project Operators had expressed their views on an optimal environment in the school to ensure quality school-based training for individual child in an operation meeting held on April 10, 2018 with SWD. A list of items that requested by Project Operators to be provided by KGs in overcoming on-site constraints is attached in Appendix D.

Comments on service coordination during on-site services

315. From the agency visits, among the 16 Project Operators that participated in the Pilot Scheme, nine of them reported there were designated personnel for service coordination in the kindergartens under their own Project Operators; only three of them reported having none in the schools. Nine of the 16 NGOs preferred to have a service coordinator, for the fact that the schools with a service coordinator cooperated with the service team better, and a service coordinator could alleviate the workload of teachers on following up with the cases.

316. Currently, the role of the service coordinators was covered by other manpower in the schools as reported by most of the Project Operators. 13 Project Operators responded to this issue. Nine of the Project Operators reported senior teachers in the kindergarten were coordinating the service, seven reported IP teachers (for IP schools), three reported principals, two reported vice principals, one reported a junior teacher, one reported an administrator, one reported a school personnel and also one reported an additional teacher to be the service coordinator.

317. Recommended experience and background for the school personnel to have good service coordination was suggested by 10 Project Operators, including education background in special education for children with special needs, experience in mobilising and providing relevant information to teachers, as well as having impact on school policies, etc.

318. All of the 16 Project Operators gave comments on the question about the role and duties of service coordinator. Two major areas were delineated: (a) supporting classroom teachers by observing the children's behavior in the classroom, settling down the children with therapeutic skills, transferring training by therapists to the daily schooling of the children with special needs, identifying and screening out suspected children with special needs, following up the IEP of the case, and providing group training on a daily basis; and (b) contacting and updating parents on the training progress of their children, reaching out to parents on their understandings of the conditions of their children and their family background, convincing parents to make decisions on providing training, launching case conference meeting with the parents for case review, teaching parents on the usage of the material for daily training, providing emotional support to parents once their children were diagnosed, and explaining Tier-1 supports to the parents. Project Operators stated that service coordinators were important to collaborate with teachers and therapists. A list of the duties of a service coordinator as suggested by the Project Operators is attached as Appendix E.

Comments on a progressive learning mechanism

319. There were 12 Project Operators reporting the current case discharge system. One Project Operator stated the dischargeable cases were currently assessed by ST, and with ST training reduced but social training provided by SCCW continued once the cases were assessed to be reaching their developmental goal. Another Project Operator suggested that services were still provided to those dischargeable cases in order to fulfill the minimum requirement of training hours set for each case.

320. A Project Operator suggested that the abilities of the students were assessed every 6 months. Those borderline cases with significant improvement in different areas shown would not be discharged and provided with continuous training. For those dischargeable cases, training hours would be reduced.

321. Another Project Operator suggested case discharge system was based on the consideration of age equivalent level, the training needs, and the social needs of the cases. For the dischargeable cases, the frequency of training would be reduced. The agency would arrange groups for the cases with regular monitoring and keep adjusting the expectation of the parents via communications on the children's conditions. For some cases that all three parties (parents, teachers, therapists) agreed that the child reached age appropriate level of development, the Project Operator would discharge the case with regular monitoring.

322. One Project Operator suggested that more group trainings and classroom trainings would be held for those dischargeable cases. The case would be discharged per half year or per semester. There would be an objective assessment for each case every six months, and this would assess whether the case reached age-appropriate standards. Before the discharge, there would be arrangement of counselling session for those parents to prepare them for the case discharge. All professionals, including CP, EP, all therapists and SCCW needed to have a consensus before making the discharge decision.

323. On the other hand, four Project Operators reported there were not so many dischargeable cases, with one Project Operator stating there was 10% of the total caseload waiting for discharge. One Project Operator noted that the service team was considering the arrangement of a discharge system at the moment. Different therapists had different ways to handle this issue. The ST would team up with SCCW to focus on social training in groups, especially for primary school setting. The PT would also conduct more group trainings for children reached the developmental standard on the field of gross motor,

preparing the children to enter primary school setting. The involvement of OT in providing fine motor and SI training for children with sufficient improvements was limited. The OT might set the monitoring goal on the strength of fine motor of the children, for example, holding a pen. SCCW would focus more on cognitive training. If the children reached the standard in this area, they would discuss with other team members on the needs of the case. Some parents would stop certain therapy because they already buy service from outside. So, the team would adjust the training hours for that case in other domains.

324. Responding to the current system, four Project Operators commented that some parents chose not to discharge to other services even though the alternative services would be more suitable to the cases compared to the OPRS service. Thus, one of the Project Operators sought for more authority on case discharge, such as CAC.

325. Six Project Operators proposed progressive training systems in different ways. One Project Operator stressed the importance on the professionals setting baseline and goal of developmental outcome for each case. One Project Operator emphasised the importance of the involvement of professionals in the re-assessment system, such as referring the discharge case to CAC or employing additional staff to determine whether the case could be discharged. One Project Operator specifically proposed that a fade-out system should also be included, with the number of training hours reduced progressively, and case conference held among different professionals with teachers on case review and discharge. In addition, one Project Operator suggested that the training intensity of the three-year training of the dischargeable case should be differentiated and those who showed greater improvement should be grouped together for training.

326. In the proposed system, three Project Operators stressed the necessity of a step-up or re-entry path system which allowed the discharged cases to re-enter the service with a lack of improvement shown in later assessment after the

discharge. This could ensure the parents' confidence and alleviate their worry about discharging their children from the service.

327. There was one Project Operator proposed that the progressive training system could refer to the one in IP service in which children reaching the age of 5.5-year-old needed to go back to CAC for re-assessment, to determine whether they could be discharged from the service.

328. There were four Project Operators suggested that the progressive training programme could refer to the similar one in EETC. In EETC, children were assessed half-yearly. If they reached the age of six and reached the standard in those six developmental fields, they were asked to be discharged. If the parents rejected the decision on discharge from the service, the children would be sent to CAC for assessment. The parents would then be provided a CAC report proving that their children reached the developmental standard. The service team, therefore, could convince the parents to accept the discharge arrangement. On the other hand, there was another Project Operator suggesting that the reference could be amended with the OPRS team, instead of CAC staff member, making the decision of discharge and assessing the case.

329. Eight Project Operators responded to the reactions of parents on case discharge. Four of them reported parents were positive on facing case discharge and appreciated the help from the OPRS service. One Project Operator suggested that children reaching the age of 6 preferred to receive continuous training. Two Project Operators expected complaints from discharging parents, with one of them stating that parents would be disappointed from the lack of sustained service. One Project Operator suggested that those who got EETC and SCCC offer showed greater hesitation to service transfer, but were willing to discharge from the service after professionals providing information on how children could get benefits of those services. One Project Operator also stated that the parents of children with ASD and borderline delay would not be willing to discharge from the service.

330. Replying to the crucial factors to parent's acceptance of the discharge decision, two Project Operators mentioned the impact of the OPRS on supporting the parents as well as the children with special needs. One Project Operator mentioned that the service encouraged the participated parents to accept the support from other services.

331. The presence of a case review system was also a crucial factor, reported by seven Project Operators. Four of the seven Project Operators mentioned that they would have case assessments every six months, or even every three months. The nature of the assessments involved assessments on each child's abilities, including their neurological and physiological challenges, daily life functioning skills or whether the cases are age appropriate. One of the Project Operator mentioned conducting the assessment every 6 months helped to reduce the negative feelings from the parents over a cut-down of services. As listed by the Project Operators, the case assessments involved regular classroom observation by therapists and helped by the EPs.

332. There were seven Project Operators mentioned that continuous services and five Project Operators on follow-up works for the discharge case would convince the parents to accept the discharge decision. Three Project Operators mentioned that SW assigned to follow the discharge cases. The follow up engagements were done every six months for one Project Operator, some were completed to explain the post-discharge support to the parents and some were done by providing community's support and resources for the parents. One Project Operator mentioned they would send a service coordinator to follow up the discharged cases. Another Project Operator mentioned the beneficial role of the EP in this situation that EP could provide services to follow up the cases and communicate with the parents.

333. Pre-discharge preparation was also mentioned by two Project Operators. For both of these Project Operators, prior the stage of discharge, counselling and consultations had been taken place. The counselling sessions involved providing preparation to the parents, and they mentioned that it is essential to prepare those parents and to deliver messages to them as a form of good news.

Additionally, one Project Operator explained that they invited the parents to attend the consultation sessions and allow the parents to understand the developmental progress of his/ her child, including the mention of the improvements of the children and lessening their worries, due to their lack of training.

334. One Project Operator suggested the effectiveness of the progressive training programme relies on the policy. The Project Operator preferred the system to restrict the parents of the dischargeable cases to accept the offers into alternative services (EETC, IP and SCCC) and restricted the parents only to appeal or reject offer with proof on the lack of developmental progress from other recognisable assessment systems.

335. One Project Operator highlighted parents would feel better if the decision on case discharge was made by professionals; such as doctors or EP. One Project Operator mentioned that the decision-making system should be well monitored to provide confidence for the parents to accept the case discharge.

336. Eight Project Operators suggested that the role on making discharge decision was also crucial to the acceptance of the parents over the case discharge decision, with 4 reported that the role relied on EP, 4 on CP, 1 on DH and CAC, and 5 on service coordinator.

337. Regarding the criteria for case discharge, two Project Operators suggested age to be included as one of the criteria, 5 suggested the acceptance and attitude of parents toward the discharge decision, and 7 on reaching standards of the developmental goal.

Comments on flexibility in teacher consultation session

The current situation of teacher consultation

338. Thirteen Project Operators provided their comments on the current practice on the teacher consultation session. Only two Project Operators were

satisfied with the current practice. Five Project Operators reported their difficulties in fulfilling the requirement of consultation hours. They could conduct the teacher consultation for only 15 to 20 minutes due to teachers' heavy workload in school. The most effective communication between therapists and teachers were the period of escorting children to training, teachers' lunch breaks and class preparations. They generally reflected that the consultation sessions helped teachers examine and evaluate the suspected cases at schools and built a closed relationship between the schools and the professionals. They suggested that the current practice of teacher consultation should be reviewed by looking at the calculation method of consultation hours and the caseloads among different schools.

Different modes of consultation session

339. There were thirteen Project Operators provided suggestions on the possible modes for the calculation of consultation hours. Phone calls and email exchanges were suggested to be included into the calculation of consultation hours by ten and seven Project Operators respectively. In addition to that, face-to-face interview was also suggested by four Project Operators. There were three Project Operators suggesting classroom observation. Other possible modes for the calculation of consultation suggested by the Project Operators included case conference and screening, ITP meeting, survey on teacher's satisfaction on the service and talk.

The number and duration of consultation sessions

340. Four Project Operators reported that the heavy workload and tight working schedule was the largest obstacle for the teacher consolation to happen. Fifteen Project Operators provided their preferred number and duration of consultation sessions. In the number of consultation sessions, seven of them recommended that a minimum number of sessions should be set and two of them further recommended that there should be at least two consultation sessions for school teachers. Seven Project Operators suggested that the number of consultation sessions should be determined on a pro-rata basis

depending on the total number of cases in schools or by team. Three Project Operators suggested the calculation should be carried out by average. There were also 1 Project Operator suggesting setting a ceiling and another Project Operator suggesting setting a total number of hours as a requirement.

341. Ten Project Operators also recommended that the duration of each consultation session should be within 30 minutes. The consultation session was better to be counted from 15 minutes for eight Project Operators, and 30 minutes for two Project Operators and allowed them to take an average from the total consultation hours. For phone calls, two Project Operators suggested that it should be counted in 15-minute unit, while one suggested counting with 30 minutes, and another one suggested counting by 1 hour each. For case conference, one Project Operator suggested that it should be counted by 1 hour each. For ITP meeting, one Project Operator suggested that it should be counted by 30 minutes.

342. Five Project Operators called for greater flexibility in the calculation of teacher session hour. There was one Project operator proposed that calculation of the teacher session hour should be set according to the individual needs of each child. Another Project Operator suggested similar opinion, advising that the remaining hours left of certain cases could be invested on other cases with cases with stronger needs and to the schools with larger caseloads.

Comments on notional staff establishment in the regularisation of OPRS

343. According to the essential service requirements from the service specification of the OPRS, each project team shall comprise the essential staff for the services, i.e. registered social worker, qualified physiotherapist, occupational therapist, speech therapist, clinical/educational psychologist and special child care worker. The Project Operator may decide on the rank and number of the above essential staff taking into consideration the actual service needs, the nature of the duties to be performed and the overall manpower

deployment, and may employ other support staff such as occupational therapy assistant to assist the professionals with service delivery.

344. Through different focus groups and meetings with the Project Operators, the consultant team and Operators had discussed the notional staff establishment in the regularisation of OPRS. The staff establishment is directly related to the service quality, EOS and effectiveness in enhancing performance of the children with special needs. After collecting the views from all the 16 operators, the proposed notional staff establishment per team by average is submitted to the Steering Committee and the duties and needs for each profession is listed in Appendix F.

345. Providing the successful outcomes of the Pilot Scheme, it is suggested that a notional staff establishment should match the prevalence of children's needs. For example, according to the official statistics from the SWD, there are about 61.34% of children were diagnosed as having speech impairment or suspected having it. Such patterns were also found in the longitudinal study with about 58% of the children are diagnosed as having speech impairment. An additional provision of speech therapist might be needed.

346. For intervention of physiotherapists and occupational therapists, most of cases like children with Autism Spectrum Disorder (42.35% in the population) and developmental delay (46.36% in the population) would have fine motor, visual perception, visual-motor integration and sensory integration problem. Service Operators suggested that therapists with paediatric training and more years of experience in working with young children with special needs would be preferable in OPRS. Also, Service Operators suggested that additional manpower of PT and OT is needed to cater for the gross motor and fine motor needs of the children.

347. Therapists (ST/PT/OT) with senior grade and more experiences in frontline are needed in the current services. Most of the Project Operators had employed senior therapists in matching the prevalence of children's developmental needs. In addition, in order to provide quality service,

supervision from therapist is essential for those junior therapists. In current practice, some Operators deployed their senior therapists to provide additional training to support the junior therapists. It is suggested that additional senior staff should be included for the services and providing supervision and coaching particularly to the junior therapists who are in working the frontline for such an itinerant service.

348. The role of SSCCW and SCCW is critical, as they would follow and consolidate the recommendation from the therapists in providing intensive training and training plans to the children. One Operator had integrated the role and function of SCCW with service coordinator for stationing in each school to provide immediate and intensive support and co-ordination of the school and team.

349. Tier-2 and Tier-3 support and direct training are mainly delivered by the therapists and SCCWs to the children. The role of psychologist is providing a Tier-1 support in the Pilot Scheme. Educational psychologists provide professional advice and seminars to the kindergartens on Tier-1 support, e.g. classroom management, curriculum adaptation, teaching strategies, early identification support like psycho-educational assessment and early screening. For some desperate or family in crisis, they would provide in-depth counselling by clinical psychologists. Therefore, it is suggested that the manpower strength of psychologists could be further increased in response to demand elevation from kindergarten on continuous classroom instructional support and early identification on children with special needs.

350. Lastly, the role of social worker is also important in OPRS not just in the way to act as a bridge in a multi-disciplinary team but also supporting family and parents in needs by casework, group work and programme approach. Therefore, it is suggested that the team should include social workers ranging from SWO, ASWO and SWA grades to work across levels within the organisation and the education sector, to develop and implement the services to cater the diverse needs of children and parents in the family, teachers and

principals in the kindergartens, and also to mobilise community resources to support the family and the school.

Summary of Views from Professionals and Project Operators

351. From the focus group interviews with the professionals, they agreed that OPRS provided effective early intervention service for the children as well as convenience for parents. From the response of the questionnaires, the administrators and the professionals appreciated most the effectiveness of assessment and interactional practices on enhancing the learning outcomes and facilitating the development of children. They also reported some appropriate strategies used by the Project Operator team to promote specific child outcomes, including contingent responses to the emotions of the children, and labelling and expanding on the child's needs and focuses with language social activity, and encouraging the children to initiate positive interactions with others.

352. On the comments on the AOS requirement on hours of centre-based services, the resources availability of the Project Operators is a major factor affecting the provision of the centre-based trainings. In addition, noting that the number of centre-based training hours required varied with children's disability types and levels, the Consulting Team will propose a minimum average number of centre-based training hours per year per child as the output standard, so as to allow greater flexibility for NGO service operators in formulating individual training plans for the children in accordance with their actual needs. For the Operator that provided exceptionally high number of centre-based training hour, considerably more centres can be deployed for the centre-based training. For children's participation in the centre-based training, long travelling distance between the training centre and the children's home and parents' expectation that all trainings are conducted on-site has discouraged parents from bringing their children to attend centre-based training.

353. It is noted that environmental constraints at participating KGs under the Pilot Scheme may adversely affect the effectiveness of OPRS. From the responses of the questionnaires, the administrators expressed their concerns on the difficulty on modifying the physical, social and temporal environment for the learning experiences of the children, and on the lack of environment for training on physical fitness. From the focus group interviews with the professionals, they also agreed on the lack of space for training and office space in the school setting. Echoing to these concerns, one of the Project Operators agreed that the mobile van could be used as an extension of school space, providing more training environments for those schools with limited space and many cases. However, most of the Project Operators expressed their concerns over the feasibility of conducting gross motor training due to the limited space of the van. Some Project Operators also concerned with parking of the van and employment of driver. In response to the limited space of the van, some Project Operators proposed a number of alternative uses of the mobile van, including providing training during holiday, providing logistics and storage of training equipment for the professionals as well as for the parents to borrow for home training, conducting table task training on fine motor skills and language skills training, as well as providing a counselling and meeting space for the parents and the professionals. Therefore, SWD may explore with individual NGO operators the feasibility of providing mobile training centres in the form of vehicles. SWD may also liaise with EDB on the provision of basic space, furniture and equipment as appropriate and feasible for the OPRS multi-disciplinary service teams.

354. Nine out of the 16 Project Operators expressed the need of service coordinator, with three of them preferred a full-time service coordinator, for better coordination with the service team and reduce the workload of the current manpower who took the additional duty as service coordinators. In responses to the increased teacher-children ratio of 1:11, five Project Operators agreed that the raise could only draw level with the current practice in the school-setting but did not secure any additional manpower for the duties of the service coordinator, with a possibility that employed manpower would be set to take up other duties. One of the Project Operators therefore called for clearly

defined duties of service coordinator. All Project Operators expressed their views on the duties of the service coordinator, mainly involving the coordination on the communication between the schools, parents and the professional team on the developmental progress of the children and other administrations, including setting the time and room schedule for training, echoing with the professional in the focus group interviews who addressed the importance in collaboration with the school, teachers and the parents.

355. On the progressive training system, a variety of current systems from different agencies with different features were reported from 12 Project Operators, most of them included setting up of clear developmental goal for each case, and a fade-out system with gradual reduction of training session provided to the dischargeable cases. Three of them agreed to include a step-up or re-entry pathway in the system. Regarding the possible negative reactions from the parents facing discharge, a number of important factors were suggested by the Project Operators to encourage the parents to accept the discharge, including setting up a case review system, pre-discharge counselling, continuous services and follow-up work for the discharged case, and involvement of and monitoring by professionals on the discharge judgment (including EP, CP, CAC, and service coordinator) with clear dischargeable criteria (including age, acceptance and attitude of parents and reaching the developmental goal).

356. On the teacher consultation sessions, only two Project Operators were satisfied with the current practice. The rest of them reported difficulty in fulfilling the requirement of consultation hours and would like to review the current practice of teacher consultation in calculating the consultation hours and the number of the consultation sessions. Majority of the Project Operators suggested including phone calls and emails into the calculation of consultation hours. The duration of consultation sessions was suggested to depend on the total number of cases in schools/ by team and at least set a minimum number of two consultation sessions with the length of 30 minutes.

357. Given the successful outcomes in children of the Pilot Scheme, it is suggested that a notional staff establishment of professionals and supporting personnel should be provided. Human resources should be sufficient to promote efficient and coordinated service delivery for children and parents, teachers and principals by creating the conditions for professionals from multi-disciplines, the family and the school to work together as a team for the benefits of the child.

Suggestions based on Findings of the Questionnaires and Focus Group Interviews with Professionals and Administrators of the Project Operators

358. With reference to the recommended practices of early intervention, it is suggested that the environment in the school, and support to transition from kindergarten to primary school education should be enhanced. Ideally, a quiet environment for school-based training for individual child, and some space for storage of teaching and training materials could be provided as far as feasible.

359. Timely support and information on smooth transition should be provided to parents through an interdisciplinary collaboration. Active engagement of parents and caregivers of young children in early intervention can be ensured by their participation in observations in individual training in school-based and centre-based sessions with support from the professional teams and the service coordinator in the school. It was noted that active involvement of parents is a crucial factor for the success of OPRS. The Consulting Team will propose to adjust the output standard of parent training upwards. The output standard on parent training (EOS4) can be increased from 2 to an overall average of 6 (equivalent to teacher training sessions).

360. The Consulting Team also proposes to adjust the output standard for consultation sessions for teachers to better suit their busy schedules. We would suggest that the output standard on teacher consultation sessions (EOS5) should be modified by reducing the duration of consultation from 2 hours to 30 minutes and various modes of communication can be included, e.g. telephone consultations.

361. We also suggest that the minimum hours of centre-based training for each child (AOS) should be adapted to counting an average of centre-based training for each team to allow flexibility for the professionals to provide training to meet the developmental needs of individual child.

362. To ensure successful interdisciplinary and tripartite collaboration, it is suggested that school-based service coordination should be enhanced during the implementation period for supporting special needs children in the regularisation of OPRS. The service coordination work includes liaising with professionals or Project Operators about individual training and classroom accommodation for each child, advising and supporting frontline teachers working with young children with special needs, and ensuring parents are actively involved in the process. Depending on the exact requirement and circumstances of individual schools, such service coordination work could be provided by a school-based teacher, SW or SCCW. In this connection, it is worth to note that the enhanced teacher-pupil ratio of 1:11 for kindergartens has created room for various professional and coordination activities (such as professional collaboration and development, communication with parents and catering for diverse needs of students). It is also noted that SWD will launch a new pilot scheme under which social work service will be introduced to provide in phase in all subsidized/aided KGs/KG-cum-CCCs/CCCs for early identification of and assistance to pre-primary children and their families with welfare needs; hence also covering students with special needs. It is worth exploring if the new pilot scheme can supplement OPRS in this aspect, and if so, the role and duties of the social worker teams under the new pilot scheme should be clearly defined to ensure coordinated service delivery between the two schemes.

363. It is noted that parents of those OPRS children who have made significant progress would nevertheless insist on staying in the Pilot Scheme, resulting in less service places available for new intakes. It is also considered that early support for other children at a less intensive level (i.e. Tier-1 support) may help prevent some of them from deteriorating to become Tier-2 children.

Therefore, the Consulting Team considers the merits of developing a continuous support mechanism that is commensurate with the actual training needs of the children concerned, also covering Tier-2 students on the waiting list for OPRS and those who have made significant progress under OPRS and should "mirgate" to receive Tier-1 support only. In parallel, feasibility of testing out new modes of suitable services for Tier-1 children should be explored.

364. Regarding the progressive learning mechanism, we suggest that the discharge to an alternative learning programme could be based on the children's performance against the age equivalent level, their training and social needs. For the dischargeable cases, pre-discharge preparation should be made and clear discharge criteria should be set and parents should be informed of the child's progress continuously, so as to prepare them to understand the need of reduced training and discharge. A fade-out system with continuous services and follow-up works can be included, with the frequency of training reduced progressively. Case conference should be held among different professionals with teachers and parents on case review and to agree upon the revised training programme for children with significant improvement.

365. Given the successful outcomes in children of the Pilot Scheme, it is suggested that a notional staff establishment of professionals and supporting personnel should be provided. The Consulting Team considers optimal mix of multi-disciplinary team under the Pilot Scheme is generally appropriate while there is room for enhancing the establishment of the service teams to meet services needs such as the prevalence of speech problem among the participating children. Also, social work inputs in providing support for parents/ carers is important. Human resources should be sufficient to promote the interdisciplinary and tripartite approach with child-centred and family-focused features.

Chapter 8 Observations on the Literature Review

366. The current literature review includes policies and practices of three places- Australia, the United States, and Taiwan. Below is a summary of assessment and intervention services for young children with disabilities and their parents in the three places with a focus on the relevance to the OPRS scheme. Please refer to Appendix G for more details.

Early Identification and Early Intervention in Australia

367. In Australia, identification and assessment of young children with disabilities are conducted by different professionals based on age range. Medical doctors (General Practitioners) mainly perform assessment for children from birth to before preschool. After entering preschool, school personnel take part in the identification process. Developmental assessments are conducted by health professionals, while rehabilitation services are delivered by professional therapists and individual education plans are prepared by kindergarten teachers. A trans-disciplinary approach with professionals and support to parents and teachers are emphasised (Clapham, Manning, Williams, O'Brien, & Sutherland, 2017). Therapy services may be provided by a range of different allied health professionals such as speech pathologists, occupational therapist, physiotherapists, social workers and psychologists (Department of Communities & Disability Services, Government of Western Australia, 2017). These health professionals form a team with children and their families. Therapy outcomes can be achieved using a range of different modes of service delivery, e.g. one-on-one sessions at home or centres, child care, school, or at community activities. Specialist training and consultancy for early childhood educators are provided to service-related professionals to meet the individual needs of the child with a disability, such as adjustments, ongoing adaptations and modifications of the kindergarten program (Kindergarten Inclusion Support Program, State Government of Victoria, Australia, 2017). Much effort is put to support teachers and educators in working with children with special needs, e.g. accommodations, consultation and home visits. They organise meetings, and facilitate conversations to support planning for the child. A key worker is identified as a case manager

to coordinate among the three contexts, family, school and centre (Clapham et al., 2017). Interventions are delivered to all children in the natural environments (e.g. home) that involve the people who are part of the children's lives, and children engage, participate and practise skills through many learning opportunities (Early Childhood Intervention Australia, 2016). To reach out to families in the rural areas or culturally diverse backgrounds, a mobile van "Extreme Preschool" offers mobile preschool services to children from indigenous communities in the Northern remote part of Australia (Nutton et al., 2011).

368. The crucial components of early intervention services in Australia include a trans-disciplinary approach to early intervention, one-on-one services to children at various contexts (home, schools, and centres), and supporting teachers and parents by a key worker. A mobile van service is delivered to reach children from special backgrounds and in remote areas.

Early Identification & Early Intervention in Taiwan

369. In Taiwan, confirmed cases of young children with special needs are required to be reported to the Early Intervention Notification, Referral and Case Management Centre for Children with Developmental Delays in each county. The clinical assessment is conducted by medical professionals and each assessment would be around 60 minutes and may involve teachers and parents (Tsai, 2009). The Centre of Team Evaluation would recommend appropriate rehabilitation services to be delivered in different settings, such as hospitals, clinics, inclusive kindergartens, nursery for children with special needs, kindergarten section of special schools, and rehabilitation centres of Project Operators, etc. The manager of the individual case will invite experts and parents to take part in the intervention meeting to draft the Individualized Family Service Plan (IFSP) together in the Case Management Centre (Huang, 2007). Itinerant consultation services are provided to support teachers in meeting the special needs of children by special education teachers and professional therapists through individual training, group training, demonstrative teaching, co-teaching, and class observation (Chen & Chung, 2010). Parental involvement is encouraged by home-based training with

children (Yeh, 2009), and informed by the assessment result, the recommendations of rehabilitation service and family service (Chang, 2009). The Early Intervention team includes occupational therapist(s), physical therapist(s), speech therapist(s), special education teacher(s) (similar to SCCW in HK), social worker(s), clinical psychologist(s), counselor(s), and parent(s) of children with developmental delays, etc. (Chang, 2009; Sun & Chang, 2011). Direct therapy sessions are mainly delivered in public and private hospitals and clinics; the costs are covered by the National Health Insurance (Liang & Chang, 2007). The role of social workers is to provide direct support and consultation to family, connect the family with relevant resources, assist parents to engage in relevant groups and organisations, etc. (Chang, 2009). An inter-departmental collaboration is emphasised and resources are allocated to the Department of Health, Department of Social Welfare and Ministry of Education (Huang, 2007; Sun & Chang, 2011). Digitisation of special education administration and establishment of administrative support networks are available (Ministry of Education, 2014). The system is accessible for teachers and case managers to keep track of the progress of the students and inform teachers of the next learning stage to enhance transition.

370. The crucial components of early intervention in Taiwan include a formal mechanism of reporting, referring and managing cases for children, a case manager with professionals and parents to take part in the intervention meeting to draft the family service plan, itinerant consultation services to support teachers through demonstrative teaching, co-teaching, class observation, social workers to provide family consultation and connecting parents to community resources, an emphasis on inter-departmental collaboration, and a digitised online system accessible for teachers and case managers to keep track of the child progress and enhance smooth transition to the next learning stage.

Early Identification & Early Intervention in the United States

371. In the US, early identification and assessment is mainly conducted by medical doctors and/or professionals with inputs from parents and teachers, depending on the age range of children. The Individuals with Disabilities Education Act (IDEA) stipulates regulations about services for children from birth to three and their families under Part C and for children from 3 to 5 years old under Part B. Each state has discrepancy of eligibility and services under IDEA. Early intervention service is provided for young children from birth to age 3 with a focus on the needs of the family. With parental permission, a service coordinator will be assigned and develop an Individualized Family Service Plan (IFSP) for the families with a child under 3 years old, while an Individualized Education Program (IEP) is required for children with disabilities who are above 3 years old (Johnson, 2001). An Individualized Family Service Plan is drafted and reviewed every 6 months. Special education and related services are offered to children and individuals from 3 to 21 with a focus on the child's needs. An Individualised education plan is drafted and reviewed every year at school; a full review is required every 3 years. Parent Training and Information Centre & Community Parent Resource Centre provides families information about the disability of their child, early intervention services (for babies and toddlers), school services (for school-aged children), therapy, local policies, transportation, etc. while Community Parent Resource Centre offers parents similar type of support and training (Centre for Parent Information and Resources, 2017). Special Education Itinerant Services are offered by a teacher certified in special education to students and teachers and a service coordinator helps coordinate all services across agencies, facilitating connections between families and potential supports, as well as serving as the single point of contact in helping parents obtain the services and assistance they need (Department of Education, New York State, 2015). Some states such as California provide different modes of service to ensure services are reached out to every child and family. For example, Early Intervention (PEI) Mobile Services provides services to children aged from 0 to 5 years old and their families to promote social and emotional development in the Riverside County, California (Fernandez, 2016; Hoang, Girard, Lee, & Loza, 2016).

372. The crucial components of early intervention and special education services in early childhood stage in the U.S. include individualized family service plan for children from birth to three and their families and individualized education program for children from 3 to 5 years old, parent training and support in community parent resource centres, itinerant services to children and teachers in schools, a service coordinator connecting agency, school and family, and state discretionary services such as a mobile service to reach out to families in the community.

Chapter 9 Discussion and Recommendations

Successful factors on current service delivery mode

373. The following five key successful factors on the service delivery mode were drawn from the different data sources. These include:

a. An interdisciplinary approach of a strong professional team to provide assessment and monitoring of progress with support from experienced and senior professionals through supervision and consultation provision;
b. A tripartite approach integrating the essential social environments for children (family, school, community) into one comprehensive model for early intervention;
c. A family-focused approach to maximise parental involvement to have better understanding of parents on children developmental issues and training needs as well as the knowledge on resources available in the community;
d. A combined model of intervention: From generalist to specialist through collaboration with schools and teachers in a process for problem-solving and coping by heightening specific interactions among chosen professionals/teachers/parents, and finally to achieve an intervention goal on individual child;
e. Effective liaison and communication between parents and teachers, inter-disciplinary service teams and teachers, and parents and inter-disciplinary service teams.

374. Most of the above elements were present in the various service delivery modes of the Project Operators. Based on the significant improvements found in the longitudinal studies and case studies, findings from the teachers and parents in both qualitative interviews and quantitative questionnaires, high satisfaction level towards the services from parents reported by the Project Operators, it is recommended that the Pilot Scheme be regularised.

375. The consulting team strongly agrees that a comprehensive interdisciplinary approach and inter-departmental collaboration model should be adopted. The family-focused, school-based, and training integrated with community facilities should be complementary to one another and a tripartite approach involving the family, the school and the community should be encouraged. An on-site training approach in the schools is considered as a prevalent option for majority of the children as they can receive services in a familiar environment where daily schooling happens and parents are not required to bring the children to receive training in other service centres if their children do not have such needs. Our team is fully aware that early detection, diagnosis and appropriate intervention can make significant differences to children who have (or are suspected to have) special needs. We would also like to emphasise and respect that each child is unique and the developmental pacing of each child is different. The more we focus on the holistic child, the easier we can simultaneously address the development in the physical, intellectual, emotional and social domains of a child. Before we consider allocating hours of individual training that aim at addressing a child's specific developmental concern, we should also give more thoughts to how the training needs can be better met in daily life and by working with the whole child in her/his ecological systems.

376. The requirement of essential staff comprising of SCCW, SW, professional therapists and CP/EP is vital for the delivery of interdisciplinary approach for providing comprehensive assessment and training to children and support to teachers and parents. Parental engagement in children's intervention, parent self-help group, and parent resource centres all enhance better understanding on children developmental issues and training needs as well as the knowledge on resources available in the community and strengthen parenting efficacy as caregivers of young children with special needs. Consultation, programmes and workshops for teachers which are part of the essential output requirements are also important in engaging teachers and the school in developing better understanding and skills in working with children with special needs and in adapting the school environment and accommodating curriculum to suit the needs of the children.

Family-centred approach to maximise parent engagement

377. Provision of training and education programmes for parents is the only required output for delivery for support and training to parents. However, all NGO Operators actively involved parents throughout the whole training process. Parents, KGs and Project Operators echo the importance of parents' engagement in contributing to successful intervention. Case studies also revealed the importance of the family support and positive parenting style. Parents who are able to have better understanding to the problems, needs and training of the children as well as the resources available can help in the children's training process. All of the Project Operators welcomed family members to join in their training sessions. Moreover, they involved parents in the assessment process, provided ITP, handbook, progress reports and conducted meetings for parents to understand the progress of training. Home-training kits, toy loans and even home-based training are available for continuation of the children's training to the home environment.

378. Information from case studies showed that weak communication with parents and lack of parents' involvement due to their own emotion and stress may be contributing factors to below average performances, even with a high level of professional training and input. In addition to the essential outputs for provision of education programmes, social workers and psychologists of Project Operators had been providing consultation and counselling for parents. Moreover, parents were introduced to various community resources and referrals had been made to Parents' Resources Centres (PRC). Despite the presence of PRC, some Project Operators still maintained their own parents' resources corner, conducted parent groups and association and provided hotline service to families of children under the OPRS. Various means and strategies such as training programmes, home-based training support, internet-based resource corner, counselling service, connecting parents with community resources, e.g. PRC, self-help group, etc. should be considered and developed.

379. The early intervention community resource centres in Taiwan is similar to PRC. The consulting team has compared the practice in providing support to parents in other non-local areas, collect further views from parents through the

focus group interviews and analyse the importance of parent support to the outcome of the children through longitudinal study so as to make recommendation on the need and service delivery mode to enhance the services for parents, as well as to explore the need for enhancement of the existing PRCs. The output standard of parent training (EOS4) should be increased to at least the similar level of teacher training.

Mode of training

380. Training for children were mostly conducted in KGs and most school personnel supported the parents to observe the training process in schools. Project Operators were also required to provide a minimum number of centre-based training similar to EETC for each child. While some centre-based services were designed to enable children to receive high quality individual and group training opportunities in a well-equipped facility, such as a sensory integration room for occupational therapy, special equipment for physiotherapy, a wide variety of training materials for speech therapy, and space and peers for social skills training, it was noted that some centre-based services are only provided to solve practical space limitation of individual KGs that children to receive training outside the school environment is not necessarily required.

381. For some Project Operators, all of their services were provided in KGs, except for certain services for some children who were in need of special equipment that were only available in centres. Nevertheless, the operators and professionals noted and reported difficulties in engaging parents of those children who do not have the need to attend centre-based training. Some operators had difficulties in providing on-site services in KGs due to the limited space and closing of KGs during summer holidays. They therefore offer intensive training facilities in the community in school holidays. These operators could attain a higher level of centre-based training hours, especially in the months of July and August. The number of centre-based training hours to be provided by respective Project Operators was related to the service delivery mode adopted, as well as the constraints in providing on-site training in KGs.

382. As indicated in the previous monthly statistics, over 20% of the children did not receive any training in centre facilities despite efforts made by Project Operators to meet the required output. Project Operators explained that there were children whose intervention needs could be fulfilled by school-based services and had little needs for centre-based services. Parents of these children were reluctant to attend centre-based training because they did not find the need to go to these centres for services. Some centres were not located near the KGs. To address a child's specific developmental concern, it is suggested to adopt a child-centred approach that there should be flexibility in averaging the centre-based service hours for the project team, instead of a minimum amount of centre-based hours for each child. Parents also expressed that they preferred school-based services more in the questionnaires. Findings in the case studies reported that working parents had great difficulty in bringing the child to centre-based training.

383. In the longitudinal study, regardless of centre-based training hours, children who had received OPRS services for over one year had significant gains in all domains. For children who received no centre-based training at all in the old case group, they also got significant improvement through school-based training. Children with different severity types and levels may be in need of different mode of training. It is better for the children to receive school-based training as they could receive services in a more familiar environment. As an alternative and for the children require training with big and specific tools or equipment, training in centre or other suitable community facilities may be considered. It is more practical or meaningful not to impose a minimum number of centre-based training hours for every child. The provision of centre-based training should be subject to the professional judgment of individual cases by inter-disciplinary service teams in consultation with school teachers. It is recommended that the centre-based training hours should be provided on the children's individual needs and counted on an average basis for each team so that children who need more can be provided with more centre-based training hours and children who need little are not required to receive a minimum amount of centre-based training hours.

Optimising resources

384. To explore possible solutions for Project Operators with a lack of training space in providing adequate training in future, there are a few suggestions: (a) to provide support for establishing an office with training facilities if they do not have any, and (b) providing a mobile training centre to interested Project Operators. The trans-disciplinary model requires resources to encourage parents, specialists and teachers to work together. For the parents, a mobile training/resource centre nearby will encourage them to connect with the professionals and community organisations as observed in the Community Parent Resource Centres in the US and the Child Development Centres in Taiwan.

385. The size of the new mobile training centre is a 24-seater van that offers two individual training rooms for mainly table tasks delivered by SCCW and ST. Similar mobile services are available in Australia and the United States. Extreme Preschool offers mobile preschool services to children from indigenous communities in the Northern remote part of Australia (Nutton et al, 2011). Early Intervention (PEI) Mobile Services provides services children aged from 0 to 5 years old and their families to promote social and emotional development in the Riverside County, California (Fernandez, 2016; Hoang, Girard, Lee, & Loza, 2016).

386. The consultant team further collected opinions on the cost-effectiveness of providing the mobile training centre in minimizing the difficulties in provision of training areas by obtaining the views of the users, including the KGs and parents of children receiving training in the mobile training centre. Aside from the benefits of the mobile training centre, some Project Operators have expressed concerns over operational difficulties, including the escort of children to the vehicle, locating of parking area and access to electricity supply, hiring drivers, etc.

387. Some Project Operators made use of the training equipment and facilities of nearby centres under their Project Operators to provide services for children receiving OPRS. Others made use of the facilities of the KGs. Some KGs spared lockers or certain areas in the school premises for the Project Operators to store relevant files and training kits. Sometimes, the training and teaching materials were shared among KGs and Project Operators, to avoid duplication of resources and to facilitate continuous training of the child in need. Training space should also be provided in the office if the children's need for training with centre facilities could not be met by other community facilities. Electronic platform had also been employed by a number of Project Operators to facilitate information dissemination and documentation of developmental and educational progress for interdisciplinary intervention.

388. A few children who had already received a certain period of pre-school rehabilitation training may be able to improve to a significant level that intensive intervention on all domains are no longer required. They can be advanced to a progressive learning mechanism to consolidate their improvement prior to discharge. Comprehensive assessment should be conducted by interdisciplinary team and there is a need to set up a standardised assessment as well as a review system with the help of multidisciplinary professionals.

Ways of optimising manpower

389. The consulting team has examined the manpower composition of Project Operators. As stipulated in the Service Specifications, SW, PT, OT, ST, CP/EP and SCCW are essential staff for OPRS. Project Operators have different service delivery models and the role of each profession may vary. Project Operators had discussed the notional staff establishment in the regularisation of OPRS and shared their views on the numbers and professions of the notional staffing. Meanwhile, it was better to decide a notional staff establishment practically such as taking reference to the prevalence of children's needs and the service delivery mode.

390. We observed that some Project Operators operating two or more project teams had been exercising flexibility in the deployment of staff and resources among project teams to deal with staff shortfall and meet operation need. Effort to enhance communication and expert exchange within agency had been made, including regular meetings and sharing of progress through electronic platform.

391. The average number of staff for each team is on par with the notional staffing proposed by SWD, with the exception that more resources had been deployed for ST services by the Project Operators in general. The consulting team identified that the number of PTs, OTs, and STs in each project team was consistent with their respective proportion in the overall training hours. The need for more ST services can be supported by the analysis of disability type of the children receiving OPRS. There are over 58% of the children suffering from speech delay which could account for the larger proportion of training from ST than the training from other professionals. For intervention of physiotherapists and occupational therapists, most of cases like children with Autism Spectrum Disorders (42.35% in the population) and developmental delay (46.36% in the population) would have fine motor, visual perception, visual-motor integration and sensory integration problem, it is suggested that therapists with paediatric training and more years of experience in working with young children with special needs would be preferable in OPRS.

392. Therapists (ST/PT/OT) with senior grade and more experiences in frontline are needed in the current services. Most of the Project Operators had employed senior therapists in matching the prevalence of children's developmental needs. It is suggested that additional senior staff should be included for the services and providing supervision and coaching particularly to the junior therapists who are in working the frontline for such an itinerant service.

393. The role of SSCCW and SCCW is critical, as they would follow and consolidate the recommendation from the therapists in providing intensive training and training plans to the children. Tier 2 and 3 support and direct training are mainly delivered by the therapists and SCCWs to the children.

394. The role of social worker is also important in OPRS not just in the way to act as a bridge in a multi-disciplinary team but also supporting family and parents in needs by casework, group work and programme approach. Therefore, it is suggested that the team should include social workers ranging from SWO, ASWO and SWA grades to work across levels within the organisation and the education sector, to develop and implement the services to cater the diverse needs of children and parents in the family, teachers and principals in the kindergartens, and also to mobilise community resources to support the family and the school.

395. Lastly, ancillary staff such as programme assistant and driver for mobile training centre should be included in the team so as to facilitate the daily operation of OPRS upon regularisation.

Recommendations for regularisation

(a) Enhancement for Staffing of Inter-disciplinary Service Team

396. The provision of an inter-disciplinary service team comprising SW, PT, OT, ST, CP/EP and SCCW is a key success factor of OPRS. These teams should be further strengthened in the following areas:

(i) With about 58% of the children in the longitudinal study diagnosed as having speech impairment, the need for enhanced speech therapy service is essential.

(ii) Social work support should be enhanced in view of the importance of the role of social worker who not only acts as a bridge in an inter-disciplinary team but also supports family and parents in needs by casework, group work and programme approach.

(iii) Inclusion of ancillary staff such as programme assistant and driver (for mobile training centre) can facilitate the daily operation of OPRS.

(iv) Professional supervision should be enhanced on an agency basis to support front-line OTs/ PTs in inter-disciplinary service teams so as to enhance service quality.

(v) The notional number of professionals and staff in inter-disciplinary service teams should be published to set out the specific roles of each professional for Project Operators to ensure efficient and coordinated service delivery.

(b) Measures to Overcome Environmental Constraints

397. From the qualitative data collected from both teachers and professionals, and also from on-site visits of the consulting team, the following environmental constraints are observed:

(i) There is lack of training space in some KGs and little provision of a quiet room with suitable facilities or equipment to be used by the inter-disciplinary service teams in most of the schools.

(ii) Inter-disciplinary service teams face great difficulties in keeping their teaching aids and learning resources in the school campus but have to carry them in and out each time they visit schools.

(iii) The long travel distance between home/school and some off-site centres which provide supplementary training support for inter-disciplinary service teams creates disincentives for parents to bring their children to these centres.

398. To overcome the above-mentioned environmental constraints, it is proposed that:

(i) Establishment of mobile training centres with adequate equipment can be considered as an interim solution to overcome the lack of training space in schools and the inconvenience in bringing children

to receive centre-based training. Mobile training centres could serve as an extension of schools (especially for schools with many cases or with limited spaces for on-site training, and when the schools are closed during holidays) to provide training for children and counselling sessions with parents/ families. Apart from table tasks training (e.g. fine motor skills and language skills training), it is suggested that the feasibility of installing equipment for some sensory integration training sessions in mobile training centres should be explored.

(ii) For planning purpose, consideration should be given to provide a training room in the future Schedule of Accommodation for the provision of OPRS when providing office bases for Project Operators, taking into account the proposed new output standard on centre-based training in paragraph 401 (i) below.

(iii) It is proposed that SWD should liaise with the Education Bureau (EDB) on the provision of basic space, furniture and equipment as appropriate and feasible for the OPRS multi-disciplinary service team.

(iv) Making use of recreational resources in the community can be encouraged and recommended to parents and teachers. For example, the inclusive playground in Tuen Mun which may extend the training needs of sensory integration of children with special needs and cater for holistic development of all children to promote an inclusive society.

(c) <u>Strengthening of Parental Support</u>

399. As family supporting and positive parenting attitude are paramount factors for children's improvement and holistic development, it is recommended that :

(i) Extensive support should be provided to parents/primary carers in the family to enhance their knowledge of parenting children with special needs and help them cope with parenting stress. Project

Operators are suggested to develop different means and strategies (such as training programmes, hotline services, home-based training support, internet-based resource corner, counselling service, connecting parents with community resources, self-help groups, etc.) to strengthen parent-child relationship, increase parenting knowledge, and enhance parenting self-efficacy, beliefs and practices. In a longer-term perspective, this model of resources compilation and sharing should be encouraged. Besides initiating and managing these resource centres by Project Operators, we also encourage parents who have gone through the treatment process to participate in managing such resource centres and continuing their connections with the service as volunteers.

(ii) It is worth exploring how the existing PRCs and the additional PRCs in the pipeline could help support children with special needs and their families through support services (including educational and support groups, talks, workshops, programmes and parent-child group trainings by professionals) in order to equip parents with knowledge and skills to enhance their acceptance and understanding of their children. PRCs may also provide these families with information of related social services, give them practical advice to get necessary services and refer them to receive relevant services as needed.

(iii) More efforts should be made by social workers in Integrated Family Service Centres (IFSC) to reach out high-risk parents including those who have mental health issues and those who have difficulties in accepting their children's needs (e.g. the below average group in the case study).

(iv) Enhancement of services for the children and parents from the ethnic minorities in the community are also recommended in consideration that it is difficult for these children to access to service owing to their language differences.

(d) Strengthening of Support for Teacher

400. The current "collaborative partnership" between school teachers and on-site inter-disciplinary service teams should be stepped up for building teachers' competence to immerge concepts of identification and rehabilitation for children with special needs, as well as accommodation to the curriculum and classroom management. It is proposed that training for teachers to further enhance their pedagogical understanding and advanced competence in relating to parents and children with learning and developmental needs should be enhanced. Examples of such training include: instructional strategies, evidence-based best practices on managing problem behaviors, skills to coach parents to enhance positive adult-child interaction. With competence in early identification, educational accommodation and liaising with professionals, parents and teachers, teacher's roles in supporting effective coordination and fidelity in implementing home-based, school-based and community-based training can be maximised to promote child learning and development.

(e) Adjustment of Output Standards

401. In light of operational experience, it is recommended that the following output standards adopted in the Pilot Scheme should be adjusted.

(i) Under the Pilot Scheme, the minimum number of centre-based training proposed by Project Operators is 8 - 23 hours per child per year. As observed in paragraph 4, children's needs for centre-based training are subject to individual developmental conditions and it is not practical or meaningful to impose a minimum number of centre-based training hours for every child. It is noted from the study findings that Project Operators spent an average of 10 hours of centre-based training per year per child. Hence, it is proposed to spend around the same average number of hours overall but the inter-disciplinary service teams should assess and decide on the extent and number of centre-based training hours

that each child should require, based on the child's developmental conditions.

(ii) Under the Pilot Scheme, the number of consultation sessions provided for teachers for each KG/KG-cum-CCC is 10 sessions per year and only consultation sessions lasting for at least two hours should be counted. To better suit the busy schedules of teachers, it is considered that the number of consultation sessions for teachers can be calculated on an average basis and the duration of the two hours of consultation session can be relaxed to 0.5 hours per session. In addition, more flexibility in the delivery mode of consultations, e.g. telephone consultation, is suggested.

(iii) Under the Pilot Scheme, the number of training and educational programmes provided for parents/ guardians/ carers is 2 programmes per year. Each training and educational programme must last for at least two hours. Given that the actual number of training/ programmes provided by Project Operators for parents ranged from 3 to 82 programmes per year under the Pilot Scheme, it is suggested that the Essential Output Standard of parent training should be increased to at least 6 programmes a year (i.e. on par with the training programmes for teachers).

Long-term Recommendations

402. It is noted that the Pilot Scheme will be regularized in 2018/19 school year and the number of service places will increase from 3 000 to 5 000 in 2018/19 school year and to 7 000 in 2019/20 school year. When the waiting time for pre-school rehabilitation services is substantively shortened, it is considered that there are opportunities for reviewing the positioning of on-site training and centre-based training as well as further enhancing the services of OPRS by leveraging on the strengths of other existing pre-school rehabilitation services.

(a) Pursuit of early assessment and intervention in the prime learning period

403. While research findings show that the optimal age for early intervention is 2-3 years old, most of the children with special needs currently begin to receive pre-school rehabilitation services from the age of 4 years old. To achieve the objective of early intervention, there is a need to speed up the assessment for children with special needs by the Child Assessment Service under the Department of Health, so that more children could start to receive appropriate services as early as practicable. In addition, when the waiting time for pre-school rehabilitation services is substantially shortened as a result of the regularization and possible further expansion of the OPRS and other pre-school services, the Government may explore refocusing the EETC service to serve children before the age of 3 in order to strengthen intervention before their admission to KGs. Other possible future directions worth exploring include implementation of complimentary support measures (e.g. procurement of premises as OPRS office bases cum training facilities, establishment of mobile training centres, etc) and interfacing between OPRS and EETC service.

(b) Enhancement of school-based social work support

404. The significance of parental support and involvement is validated by the evaluative study. Given that family and parental support is a key success factor for the Pilot Scheme on OPRS, social workers play an imperative role in identifying family in need of counselling and support, introducing and referring them for suitable assessment and welfare services in the community, and coordinating with the interdisciplinary service teams and the school personnel on follow-up support. However, there is currently no provision under the OPRS for school-based professional social work support. It is noted that SWD will launch a new pilot scheme under which social work service will be introduced to provide in phase in all subsidized/aided KGs/KG-cum-CCCs/CCCs for early identification of and assistance to pre-primary children and their families with welfare needs; hence also covering students with special needs. It is worth exploring if the new pilot scheme can supplement OPRS in this aspect, and if so, the role and duties of the social worker teams under the new pilot scheme should be clearly defined to ensure coordinated service delivery between the two schemes.

(c) Introduction of a "Continuous Support Mechanism" for children who have made significant progress

405. After a substantial shortening of the waiting times for CAC assessment and the EETC service being made available to most of the eligible children under the age of 3, there are merits of developing a "Continuous Support Mechanism" (CSM) that is commensurate with the actual training needs of the children who have made significant progress under pre-school rehabilitation services. Under the CSM, the rehabilitation services may be provided in the form of group training, targeted sessions on selective developmental domains, etc., in accordance with the assessment made by inter-disciplinary service teams in consultation with school teachers according to some pre-determined performance indicators for individual children. The advantages of the CSM are that training could be targeted for the most needed domains of the children concerned and that service places under the OPRS could be released for other Tier 2 children. To ensure that these children who have made significant progress are provided with sufficient and appropriate level of intervention, case conferences by the inter-disciplinary service teams with school teachers should be held periodically to review the progress of the children and to agree upon the revised training programme. A step-up or re-entry path should be established if children concerned are found to be in need of higher level of support from OPRS in the process.

(d) Transitional Support for Admission to Primary One

406. It is noted that SWD and EDB have worked out an information transfer arrangement between pre-school rehabilitation service units and primary schools, so that identified children under OPRS would continue to receive special attention and appropritate services when they proceed to primary education. In the longer term, it is considered that a longitudinal study may be conducted to track the developments of these children from young childhood to childhood after they proceed to Primary One, with a view to ascertaining whether bridging and support services need to be provided for these children, and if so, the appropriate form of such services.

End