

RGC Ref. No.: <u>UGC/FDS15/H01/17</u> (please insert ref. above)
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**RESEARCH GRANTS COUNCIL  
COMPETITIVE RESEARCH FUNDING SCHEMES FOR  
THE LOCAL SELF-FINANCING DEGREE SECTOR**

**FACULTY DEVELOPMENT SCHEME (FDS)**

**Completion Report**

*(for completed projects only)*

<p><b><u>Submission Deadlines:</u></b></p> <ol style="list-style-type: none"> <li>1. Auditor's report with unspent balance, if any: within <b>six</b> months of the approved project completion date.</li> <li>2. Completion report: within <b>12</b> months of the approved project completion date.</li> </ol>
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**Part A: The Project and Investigator(s)**

**1. Project Title**

Developing and Validating a Parent-Focused Intervention to Enhance the Executive Function Skills of Young Chinese Children from Low-Income Families

**2. Investigator(s) and Academic Department(s) / Unit(s) Involved**

Research Team	Name / Post	Unit / Department / Institution
Principal Investigator	Dr CHAN, Chi-keung / Associate Professor	Department of Counseling and Psychology / Hong Kong Shue Yan University
Co-Investigator(s)	Dr CUTULI, J. J. / <b>Senior Research Scientist</b>	<b>Nemours Children's Health System</b>
	Dr HERBERS, Janette / <b>Associate Professor</b>	<b>Department of Psychological and Brain Sciences / Villanova University</b>
	Dr ZHANG, Xiao / Associate Professor	Division of Chinese Language and Literature / Faculty of Education / The University of Hong Kong
	Dr WONG, Pak Ho Bernard / <b>Professional Consultant</b>	<b>Department of Educational Psychology / The Chinese University of Hong Kong</b>
Others	N.A	N.A

### 3. Project Duration

	<b>Original</b>	<b>Revised</b>	<b>Date of RGC / Institution Approval (must be quoted)</b>
Project Start Date	01/01/2018	N.A.	N.A.
Project Completion Date	31/12/2020	30/06/2021	16/06/2020
Duration ( <i>in month</i> )	36 months	42 months	16/06/2020
Deadline for Submission of Completion Report	31/12/2021	30/06/2022	16/06/2020

## **Part B: The Final Report**

### 5. Project Objectives

#### 5.1 Objectives as per original application

1. To design and develop a parent-based EF (Executive Function)-focused intervention programme to teach and empower parents from low-income families supportive parenting practices through psychoeducational workshops, take-home practice activities and monthly progress reviews to enhance the EF development of their children.
2. To examine the effectiveness of this parent-based EF-focused intervention programme using quantitative data (measures of parents' supportive parenting practices and children's EF) collected from the wait-list control intervention design and observations of parent-child play interaction, and field notes of monthly parent review sessions.
3. To investigate the fidelity of the implementation of this parent-focused intervention programme by analysing field notes from monthly individual parent review sessions and semi-structured parent interviews after the intervention.

#### 5.2 Revised objectives

Date of approval from the RGC: N.A.

Reasons for the change: N.A.

N.A.

1. N.A.
2. N.A.
3. N.A.

### 5.3 Realisation of the objectives

*(Maximum 1 page; please state how and to what extent the project objectives have been achieved; give reasons for under-achievements and outline attempts to overcome problems, if any)*

For objective 1, the training materials (handbook and training materials) and take-home practice toolkit (set of picture books, a card game, some little EF games, some sing and dance videos, parent-child kindness communication games, and a weekly activity log book) for the parent-based EF-focused intervention were further modified after the pilot study (completed on late June 2019). The experimental group completed the onsite psychoeducational training workshops and 12-week intervention (early January 2020) prior to the outbreak of COVID-19. Due to the school suspension during the first three waves of COVID-19 pandemic, the intervention schedule for the wait-list control group had to be postponed from February 2020 to September 2020. Online psychoeducational workshops and training materials were developed for this group. Although facing with a lot of challenges, a total number of 89 dyads of parents (42 for the experimental group and 47 for the wait-list control group) and their children were recruited for the intervention programme in the main study. Forty (attrition rate: 4.8%) of the experimental group (before the outbreak of COVID-19) and 38 (attrition rate: 19.1%) of the wait-list control group (during the outbreak of COVID-19) completed at least 80% of tasks the parent-based intervention. The major reason for the higher attrition of the wait-list control group because several parents moved back to mainland China before the fourth wave COVID-19 outbreak (November 2020).

For objective 2, the protocol for the assessment tasks of young children's executive function (EF) and parent-child interactive play observation were also further modified after the pilot study. Unfortunately, the COVID pandemic significantly affected the data collection method and schedule for the second group of participants. Given that the research team could not conduct face-to-face assessments due to school suspension during the third and fourth waves of participants, the EF assessment tasks and observation protocol were modified for online administration. Although the research team could still evaluate the effectiveness of the intervention, the extension for the implementation of the main-study intervention and the online mode of data collection for the wait-list control group did affect the results. Overall, the project found partial effectiveness for the pilot study and minimal effectiveness for the main study (please refer to part 6 for more details).

For objective 3, the monthly reviews and semi-structure interviews were conducted by phone and the field notes were analyzed to investigate the fidelity of the implementation of the parent-based EF-focused intervention programme.

### 5.4 Summary of objectives addressed to date

<b>Objectives</b> <i>(as per 5.1/5.2 above)</i>	<b>Addressed</b> <i>(please tick)</i>	<b>Percentage Achieved</b> <i>(please estimate)</i>
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<p>1. To design and develop a parent-based EF (Executive Function)-focused intervention programme to teach and empower parents from low-income families supportive parenting practices through psychoeducational workshops, take-home practice activities and monthly progress reviews to enhance the EF development of their children.</p>	<p>✓</p>	<p>100%</p>
<p>2. To examine the effectiveness of this parent-based EF-focused intervention programme using quantitative data (measures of parents' supportive parenting practices and children's EF) collected from the wait-list control intervention design and observations of parent-child play interaction, and field notes of monthly parent review sessions.</p>	<p>✓</p>	<p>100%</p>
<p>3. To investigate the fidelity of the implementation of this parent-focused intervention programme by analysing field notes from monthly individual parent review sessions and semi-structured parent interviews after the intervention.</p>	<p>✓</p>	<p>100%</p>

## 6. Research Outcome

### 6.1 Major findings and research outcome

*(Maximum 1 page; please make reference to Part C where necessary)*

The major findings of the pilot study showed that the overall EF skills of young children in the experimental group remained unchanged when comparing pre-intervention and post-intervention. However, their inhibitory control significantly improved in the follow-up phase after four months of the intervention. For children in the wait-list control group, their inhibitory control significantly improved after the intervention. Overall, 65% of children found improvement in their EF composite scores. For participating parents, 71% of parents had significant improvement in their authoritative/supportive parenting (through questionnaire), 78% of parents found improvement in their parent-child communication (through observation) and 73% of parents found improvement in their parent-child relationship (through monthly review and semi-structured interview). In addition, there was a significant relationship between the changes of supportive parenting and changes of inhibitory control. The background and rationale for developing the intervention program was included in one of the submitted manuscripts and one conference paper. The key findings of the pilot study were included in another submitted manuscript and two post presentations.

For the main study, surprisingly, the results indicated that the inhibitory control in the experimental group after the intervention was significantly lower than those in the waitlist control group without intervention. Furthermore, findings showed that the inhibitory control of children in the wait-list control group was significantly improved after the intervention, but their cognitive flexibility was significantly lowered after the intervention. For parents, 61% of parents had significant improvement in their authoritative/supportive parenting, 67% of parents found improvement in their parent-child communication and 63% of parents found improvement in their parent-child relationship. Nevertheless, there was no significant improvement authoritative/supportive parenting scores on for both the experimental and wait-list control group. These results could be affected by the pandemic (school suspension and children had school online) and change of EF assessment mode (from face to face to online). In terms of the fidelity of the intervention program, participating parents had the most concern about the commitment to the 12-week programme and some parents recommended to shorten the programme to 6 to 8 weeks. Another suggestion from the parents was whether the take-home activities can be tailor-made to each individual child to fit their interests. On the other hand, a majority of parents appreciated the structured take-home toolkit that supported their parent-child communication and relationship, especially during the pandemic.

### 6.2 Potential for further development of the research and the proposed course of action

*(Maximum half a page)*

The parent-based, home-based, and relational-emphasized intervention and the research design of this research project supported the development of another FDS project (RGC project reference number: UGC/FDS15/H03/19) titled “Enhancing Parents’ Competency to Support the Social and Emotional Needs of Young Children Through a Parent-Based Empathy and Compassion Intervention” that empowers parents with supportive parenting practice with the social and emotional needs of their young children. Furthermore, the child-focused and activity-based of this interventional project also inspired a resubmitted FDS application (collaboration between Hong Kong Shue Yan University and Yew Chung College of Early Childhood Education) titled “Developing and Validating a play-based child-focused Intervention to Enhance the Social-emotional Competence of

Chinese Kindergarteners”. The framework, significance, and impact of this research project have been shared with academics, practitioners, parents, and the public (please refer to section C10).

## 7. Layman’s Summary

*(Describe in layman’s language the nature, significance and value of the research project, in no more than 200 words)*

This project studies the effectiveness and implementation fidelity of a newly developed parent-based EF-focused intervention. The findings from the pilot study were promising. Unfortunately, the project’s schedule and implementation were significantly disrupted by the school suspension during the pandemic which affected the results. Nevertheless, this research project still have academic and practical significance and values.

### **Academic significance**

This project moves beyond the existing literature by emphasizing parent-focused intervention that enable parents from low-income families to play a primary and active role in empowering their own supportive parenting practice and their children’s EF development. Some significant results found in the pilot and main studies also supported the importance of emphasizing a relational-focused approach for supporting the cognitive development of young children.

### **Practical significance**

This study provides empirical evidence on the design and development of a parent-focused intervention programme to empower parents of low-income families by training them in supportive parenting practices and knowledge of EF. This can further support the resilience and school success of economically disadvantaged young children in Hong Kong by enhancing their EF skills. The handbook of the intervention also provides practical and useful tips to parents and teachers on how to cultivate young children’s EF.

**Part C: Research Output****8. Peer-Reviewed Journal Publication(s) Arising Directly From This Research Project**

(Please attach a copy of the publication and/or the letter of acceptance if not yet submitted in the previous progress report(s). All listed publications must acknowledge RGC's funding support by quoting the specific grant reference.)

The Latest Status of Publications				Author(s) (denote the corresponding author with an asterisk*)	Title and Journal / Book (with the volume, pages and other necessary publishing details specified)	Submitted to RGC (indicate the year ending of the relevant progress report)	Attached to this Report (Yes or No)	Acknowledged the Support of RGC (Yes or No)	Accessible from the Institutional Repository (Yes or No)
Year of Publication	Year of Acceptance (For paper accepted but not yet published)	Under Review	Under Preparation (optional)						
N.A.	N.A.	✓	N.A.	Chi-keung CHAN, Man-Wai KUNG, Wan-Ka WONG, J. J. CUTILI, Janette E. HERBERS, Xiao ZHANG, & Bernard Pak-ho WONG,	Executive Function Skills and Early School Success in Young Chinese Children from Low-Income Families / Early Education and Development	No	No	Yes	No
N.A.	N.A.	✓	N.A.	*Chi-keung CHAN, Man-Wai KUNG, Wan-Ka WONG, J. J. CUTILI, Janette E. HERBERS, Xiao Zhang, Bernard Pak-ho Wong, Yim CHEUNG, & Yat-fan SIU	Developing a Parent-focused Intervention for Enhancing Executive Functions of Young Chinese Children / Journal of Child and Family Studies	No	No	Yes	No

### 9. Recognized International Conference(s) In Which Paper(s) Related To This Research Project Was / Were Delivered

(Please attach a copy of each conference abstract)

Month / Year / Place	Title	Conference Name	Submitted to RGC (indicate the year ending of the relevant progress report)	Attached to this Report (Yes or No)	Acknowledged the Support of RGC (Yes or No)	Accessible from the Institutional Repository (Yes or No)
4/2019 Toronto	Executive function skills and early school success in young Chinese children from low-income families	2019 American Educational Research Association (AERA) Annual Meeting	Yes	Yes (please refer to Appendix 1)	Yes	No
5/2021 Virtual	A Pilot Study of a Parent-Based Intervention to Enhance the Executive Function Skills of Young Chinese Children from Low-SES Families	Association of Psychological Science 2021 (Virtual Poster Showcase)	No	Yes (please refer to Appendix 2)	Yes	No
8/2021 Virtual	Developing a parent-focused intervention for enhancing executive functions of young Chinese children	2021 American Psychological Association Annual Convention (Virtual Poster Showcase)	No	Yes (please refer to Appendix 3)	Yes	No

### 10. Whether Research Experience And New Knowledge Has Been Transferred / Has Contributed To Teaching And Learning

(Please elaborate)

1) An impact case was written and published in the Hong Kong Shue Yan University's Research Newsletter (pp. 17-18) in 2021 to illustrate the impacts of this project and can be accessed at (please refer to Appendix 4)

[https://ro.hksyu.edu/attachment/upload/researchNewsletter/HKSYU%20Research%20Newsletter\\_2021\\_Final%20\(website\).pdf](https://ro.hksyu.edu/attachment/upload/researchNewsletter/HKSYU%20Research%20Newsletter_2021_Final%20(website).pdf)

2) A leaflet was produced to summarize the key findings of the project and distributed to kindergarten teachers and parents (please refer to Appendix 5).

3) An invited presentation for the Psychology Series (organized by the OUHK LiPace) was delivered on July 17, 2020, with a title "Parent-focused intervention and executive function skills of young Chinese children" to share the intervention design and implementation as well as some preliminary findings of the pilot study. The invited presentation was opened to staff and students at LiPACE as well as professional (please refer to Appendix 6).



4) A book launch seminar was held on October 29, 2018 to share the handbook and demonstrate the intervention materials to educators and the public (please refer to Appendix 7).

5) A two-session workshop (in hybrid mode) was delivered to parents at Kau Yan kindergarten (other than the participating school) on October 3, 2021 and October 10, 2021 (refer to Appendix 8)

### 11. Student(s) Trained

(Please attach a copy of the title page of the thesis)

Name	Degree Registered for	Date of Registration	Date of Thesis Submission / Graduation
N.A.	N.A.	N.A.	N.A.

### 12. Other Impact

(e.g. award of patents or prizes, collaboration with other research institutions, technology transfer, teaching enhancement, etc.)

A revised handbook for parents / teachers on how to cultivate and support young children's executive function development was written and is accessible on the Institutional Repository by researchers, practitioners, and the parents at:

<https://ra.lib.hksyu.edu.hk/jspui/handle/20.500.11861/5800>

### 13. Statistics on Research Outputs

No. of outputs arising directly from this research project	Peer-reviewed Journal Publications	Conference Papers	Scholarly Books, Monographs and Chapters	Patents Awarded	Other Research Outputs (please specify)	
					Type	No.
	2 (under review)	1	0	0	Handbook for Parents and Teachers (please refer to Appendix 9)	1
					Training	1

					Toolkit (please refer the description in Appendix 4)	
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#### 14. Public Access Of Completion Report

*(Please specify the information, if any, that cannot be provided for public access and give the reasons.)*

<b>Information that Cannot Be Provided for Public Access</b>	<b>Reasons</b>
N.A.	N.A.