

RGC Ref. No.: UGC/FDS15(17)/H03/19 <p>(please insert ref. above)</p>
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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><u>Submission Deadlines:</u></p> <ol style="list-style-type: none"> 1. Auditor's report with unspent balance, if any: within six months of the approved project completion date. 2. Completion report: within 12 months of the approved project completion date.
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Part A: The Project and Investigator(s)

1. Project Title

Enhancing Parents' Competency to Support the Social and Emotional Needs of Young
Children Through a Parent-Based Empathy and Compassion Intervention

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

Research Team	Name / Post	Unit / Department / Institution
Principal Investigator	Prof CHAN Chi-keung / Dean and Professor	School of Arts and Humanities / Tung Wah College
Co-Investigator(s)	Dr MICHALSKA Kalina J. / Assistant Professor	Department of Psychology / University of California, Riverside
Co-Investigator(s)	Dr SIU Yat-fan / Lecturer	Division of Social Science / The Hong Kong University of Science and Technology
Co-Investigator(s)	Dr CHUI Chi-fai / Associate Professor	Department of Social Work / Hong Kong Shue Yan University
Co-Investigator(s)	Dr LAM Yin-hung / Assistant Professor	Department of Counselling and Psychology / Hong Kong Shue Yan University

3. Project Duration

	Original	Revised	Date of RGC / Institution Approval (must be quoted)
Project Start Date	1 January 2020	N.A.	N.A.

Project Completion Date	30 June 2022	31 March 2023	20 April 2021
Duration (<i>in month</i>)	30 months	39 months	20 April 2021
Deadline for Submission of Completion Report	30 June 2023	31 March 2024	20 April 2021

4.4 Please attach photo(s) of acknowledgement of RGC-funded facilities / equipment.

N/A

Part B: The Final Report

5. Project Objectives

5.1 Objectives as per original application

1. Develop and validate a parent-based empathy and compassion intervention programme to teach and empower parents to support the social and emotional needs of young children through psychoeducational workshops, take-home practice activities and monthly progress reviews.
2. Examine the effectiveness of this parent-based empathy and compassion intervention programme using quantitative data (self-reported questionnaires for the measure of parents' supportive parenting practices and children's social and emotional health), neurophysiological measures (EEG/ERP experiments), and qualitative data (observation of parent-child interactions and semi-structured interviews) collected from the wait-list control intervention design.
3. Develop a mobile app to monitor the implementation of the parent-based empathy and compassion intervention programme. Weekly take-home practice on empathy and compassion will be given thru the mobile app to reinforce parents' learning and keep track of their progress. Furthermore, it allows the research team to communicate with the parents to sustain their learning by sharing timely and effective strategies to address their children's social and emotional needs.

5.2 Revised objectives

Date of approval from the RGC: N.A.

Reasons for the change: 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 workshops' materials, take-home practice materials (psychoeducational workshops and take-home practices), protocols for review sessions and observation of parent-child interaction, and EEG experiment stimuli and protocol were developed and validated with a pilot study (September 2021 to January 2022) and a main study (September 2022 to March 2023). During the pilot study, a pre-post single group design was adopted to try out the materials of four psychoeducational workshops and take-home practices. The first two workshops focused on cultivating parents' empathy and how to apply empathy to support the SEL of their young children. The third and fourth workshops focused on compassion. Parents were able to practice the learned skills for real-life applications at home. Twenty-three parent-child dyads completed the pilot study (attrition rate: $2/25 = 8.0\%$). The research team further modified the intervention materials and evaluation protocols based on the parents' feedback from the pilot study (e.g. the parents who participated would like to have more discussion/interaction during the workshops, and more examples for the workshops and take-home practice materials. (An electronic copy of the handbook that contains the finalized materials of workshops and take-home practices were attached in [Appendix 1](#)). For the main study, 137 parent-child dyads from 19 local kindergartens were recruited for the main study (63 from 10 schools for the experimental group and 74 from 9 schools for the wait-list control group). For the experimental group, 61 out of 63 parents completed the main study (attrition rate: 3.2%). For the wait-list control group, 69 out of 74 parents completed the main study (6.8%). The project team conducted 76 psychoeducational workshops and 261 review sessions for the main study.

For Objective 2, multiple measures were used to evaluate the effectiveness of the intervention programme. In the pilot study, survey data (scales on parents' empathy and compassion, parents' well-being, and parent-child relationship), EEG experimental data (mu suppression) were collected before and after the intervention programme. Furthermore, qualitative data from parents' review sessions were analyzed with thematic analyses. For main study, three times of online questionnaires (added a measure on children's social and emotional competence), EEG experimental data, two times of observations of parent-child interactions, monthly review sessions and one semi-structure interview were collected for both experimental group and waitlist control group of participants. For behavioral survey and EEG data, the project team analyzed the between-group pre-post differences (T1 and T2) between the experimental and control group. The within-group pre-post differences (T1 and T2) for the experimental group and the within-group pre-post differences (T2 and T3) for the control group. The major research findings will be summarized in section 6.1 below.

For Objective 3, a mobile app was developed for parents to monitor their learning progress. The research team uploaded all of the materials related to the workshops (including workshop notes, in-class exercises, take-home practices) or some news related to empathy and compassion for parents to access. Parents had to finish the take-home exercises after attending each workshop. After they submitted their answers of take-home exercises, the research team would provide feedback for parents in order to reinforce parents' deep learning (a user guide for the mobile apps is attached in [Appendix 2](#)).

5.4 Summary of objectives addressed to date

Objectives <i>(as per 5.1/5.2 above)</i>	Addressed <i>(please tick)</i>	Percentage Achieved <i>(please estimate)</i>
1. Develop and validate a parent-based empathy and compassion intervention programme to teach and empower parents to support the social and emotional needs of young children through psychoeducational workshops, take-home practice activities and monthly progress reviews.	✓	100%
2. Examine the effectiveness of this parent-based empathy and compassion intervention programme using quantitative data (self-reported questionnaires for the measure of parents' supportive parenting practices and children's social and emotional health), neurophysiological measures (EEG/ERP experiments), and qualitative data (observation of parent-child interactions and semi-structured interviews) collected from the wait-list control intervention design.	✓	100%
3. Develop a mobile app to monitor the implementation of the parent-based empathy and compassion intervention programme. Weekly take-home practice on empathy and compassion will be given thru the mobile app to reinforce parents' learning and keep track of their progress. Furthermore, it allows the research team to communicate with the parents to sustain their learning by sharing timely and effective strategies to address their children's social and emotional needs.	✓	100%

6. Research Outcome

6.1 Major findings and research outcome

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

Pilot Study

The major findings of the self-report questionnaire data showed that there was significant improvement in parents' empathy ($t(21) = 2.84, p = .011$) and parent-child relationship ($t(21) = -18.06, p < .001$) before and after the intervention. Nevertheless, there was no significant improvement in self-compassion, compassion to others, and well-being of parents before and after the intervention. For EEG results, a significant three-way interaction effect was found for mu suppression at the midline electrodes across stimulus conditions and time, $F(2, 38) = 318.17, p < .001$. The main effects of stimulus condition, $F(1, 19) = 2.46, p < .001$, and time, $F(1, 19) = 3.75, p < .001$, were also significant. There was more mu suppression for stimuli with touch than those without touch. In addition, the mu suppression was greater after the intervention. The EEG results the participants exhibited enhanced electrophysiological responses, indicating increased empathy and compassion, particularly in response to human touch stimuli after the intervention. The findings suggest that human social touch stimuli elicit positive emotions, resulting in greater suppression of the mu rhythm, especially when participants experience heightened empathy following the eight-week intervention. The interview findings showed that after the pilot intervention, the top three benefits reported by parents for the programme were 1) learnt new knowledge of empathy and compassion and applied those skills in parenting (95%), 2) had better control of emotions and improved communication with their young children (73%), and 3) understood children's needs and improved parent-child relationship (50%). The key findings of the pilot study were included in one submitted manuscript and one poster presented at an international conference.

Main Study:

Self-reported Data: There was no significant between-group difference between experimental group and waitlist control group on the improvement of parents' empathy, self-compassion, compassion, well-being, parent-child relationship, and their perceptions on their children's social-emotional learning from T1 to T2. Furthermore, there was no significant within-group difference for experimental group (T1 to T2) and no significant within-group difference for control group (T2 to T3) on the pre-post changes on all measures. Also, the 2 (two groups) x 3 (3 timepoints) repeated measures did not find any significant difference on any measures.

EEG Results:

The between-group results found that the mu suppression indexes of the experimental group were significantly lower than the control group for the Human Touch condition, $t(122) = -7.88, p < .001$ for the changes from T1 to T2. The within group analyses revealed that the mu suppression indexes in Human Touch condition and Human non-Touch condition were significantly decreased after the intervention for experimental group, (T1 and T2) and wait-list control group (T2 to T3), respectively. The magnitude of the mu suppression decrease was greater for the Human Touch condition in both groups. The overall findings revealed that the mu suppression indexes were significantly more negative in the Human Touch and Human Non-Touch conditions compared to the Object Touch and Object Non-Touch conditions. These results indicate that the intervention had a positive effect on the parents' empathy and compassion.

Qualitative Results: After the intervention, 80.8% participating parents (including both experimental group at T2 and wait-list control group at T3) reported that they improved their communication with their young children by applying the skills learnt in the programme, 78.4% of parents reported that they had improvement in parenting, and 80.0% reported improved parent-child relationship. About 47.7% and 26.9% of parents mentioned the improvement in their children's emotional and social competence. About three-fourths of the parents had

positive feedback about the intervention programme, especially discussion in the workshops and take-home practices.

6.2 Potential for further development of the research and the proposed course of action (Maximum half a page)

The research team has submitted two manuscripts (see [Appendix 3](#) and [Appendix 4](#)) and delivered one poster presentation (see [Appendix 5](#)) using the data of the pilot study. The research team is planning to draft two more manuscripts and deliver one presentation using the data of the main study. Apart from using the mu suppression indexes, the team will further conduct EEG connectivity analysis. Measures, such as coherence, phase-locking, and functional connectivity networks, can be used to examine how different brain regions interact and communicate during empathic responses.

Since the schedule of the main study was affected by the COVID pandemic and the changes of PI and research assistant, the project team took their best effort to complete the data collection by the extended project end date (31 March 2023), and used their own means and resources to manage, code and analyze large amount of data (especially the EEG and qualitative data). Although facing a lot of challenges, the promising results of the EEG and qualitative data support further investigation in this topic with a mixed-method longitudinal design. In addition, the researchers aim to enhance the study by developing diverse stimuli and experimental designs that can effectively assess individuals' empathy and compassion, alongside their associated neurophysiological responses recorded by EEG.

Furthermore, this study adapted an electroencephalogram (EEG) and event-related potential (ERP) experimental paradigms to assess the neurophysiological changes in empathy and compassion of parents and whether these changes are correlated with the improvement of their children's social and emotional competence. A potential research idea is to develop a cross-cultural study on assessing the neurophysiological changes in empathy and compassion of parents and the changes in their children's social and emotional competence. This cross-cultural perspective would provide a more comprehensive understanding of the complex interactions between parenting, neurophysiology, and child development.

7. Layman's Summary

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

Parental empathy and compassion play crucial roles in fostering young children's psychosocial development. This study aims to develop and validate parent-based empathy and compassion intervention to improve parent-child relationship that can further support the social and emotional needs of their young children. In the pilot study, the findings from the self-reported questionnaire, neuropsychological measures, and parents interview confirmed the effectiveness of the intervention on enhancing parental empathy and thus improving parent-child relationship. For the main study, the neuropsychological and interview results consistently showed significant enhancement in parental empathy and compassion that further improves parent-child communication and parent-child relationship. Although the insignificant results of all self-reported behavioral measures were disappointing, these results suggested the practical significance of incorporating the intervention with school-based parent education programmes with stronger staff and peer support to foster sustainable changes in empathetic and compassionate parenting behaviors to support young children's social and emotional needs.

Theoretically, this study focused on the importance of developing a culturally sensitive parent-based intervention to cultivate parents' empathy and compassion in parenting practices to support young children's social and emotional needs, which emphasizes the active and primary role of parents, besides the Western school-based intervention model in existing SEL research literature.

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.	Yes	N.A.	Siu, N. Y.-F., Chan, C.-K.* , Michalska, K. J., Chui R. C.-F., Lam, Y.-H., Tsui, C. W.-M., Yung, C.-S., Kwan, Y.-W., Lui, W.-K., & Li, D.	Developing and Validating a Parent-based Intervention for Supporting Children's Psychosocial Development : Empathy and Compassion Approach / Journal of Child and Family Studies (JCFS-D-24-00307	N.A.	Yes	Yes	No
.N.A.	N.A.	Yes.	N.A.	Chan, C.-K.* , Siu, N. Y.-F., Yung, C.-S., Lui, W.-K., Michalska, K. J., Chui R. C.-F., Lam, Y.-H., Tsui, C. W.-M., Kwan, Y.-W., & Li, D	Evaluation of a Study Protocol for a Parent-based Empathy and Compassion Intervention to Support Social and Emotional Needs of Their Young Children / Parenting: Science & Practice (Submission # 247205956)	N.A.	Yes	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 <i>(indicate the year ending of the relevant progress report)</i>	Attached to this Report <i>(Yes or No)</i>	Acknowledged the Support of RGC <i>(Yes or No)</i>	Accessible from the Institutional Repository <i>(Yes or No)</i>
March/ 2023/ Salt Lake City, Utah, USA	Developing a Parent-Based Empathy and Compassion Intervention: A Pilot Study (see Appendix 6)	Poster presentation at the Society for Research in Child Development (SRCD) 2023 Biennial Meeting	N.A.	Yes	Yes	No

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

(Please elaborate)

- 1) The PI was invited to deliver a public talk titled “Cultivating Parents’ Empathy and Compassion; Supporting Children’s Social and Emotional Competence” (培育家長同理心及憐憫心，支持孩子的社交及情緒發展) for the Jockey Club Bright Start project (賽馬會幼兒喜步計劃) on 17 December 2022 (10am to noon) to share the theoretical framework, implementation and pilot results of this project to early childhood practitioners and parents (see Appendix 6)
- 2) The PI published a media article on the higher education column of HK01 to promote this research project and share some key concepts with real-life examples.
<https://www.hk01.com/專上教肯/841926/教育專欄-成就孩子第一步-建立同理心及憐憫心-與孩子連心> (see Appendix 7)
- 3) Part of the conceptual framework of the project inspired another project titled “Play like a kid. Feel like a kid” (2022A016) funded by the Funding Scheme for Children’s Well-being and Development from the Commission of Children to promote play-based learning to support children’s social and emotional learning.
<https://playlikekid.org/>

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.)

- 1) The handbook of the psychoeducational workshops and take-home practices had been shared with principals and parents of participating schools. In the future, the materials of the psychoeducational workshops and take-home practices can be shared with more parents and kindergartens through the apps (please refer to Appendix 1 and Appendix 3)
- 2) The validated EEG experimental stimuli have theoretical significance and cultural implication that can be shared to collaborators who will conduct neuroscience research related to empathy and compassion.

13. Statistics on Research Outputs

	Peer-reviewed Journal Publications	Conference Papers	Scholarly Books, Monographs and Chapters	Patents Awarded	Other Research Outputs (please specify)	
No. of outputs arising directly from this research project	2	0	0	0	Type	No.
					Conference poster presentation	1

14. Public Access Of Completion Report

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

Information that Cannot Be Provided for Public Access	Reasons
N.A.	N.A.