



جائزة خليفة التربوية  
Khalifa Award for Education



# Winner of the 2024 Khalifa International Award for Early Learning: Best Research and Studies Research on the Parent-Child Coaching Program

## Abstract

Professor Catherine (Cammie) McBride's research on assessment and training for young children's learning has extended across several countries worldwide. This application specifically highlights research on training parents of 3- to 6-year-old children to support early learning of mathematics and literacy skills. The program studied is the parent-child coaching program (PCCP) and involves a comprehensive approach, engaging parents, teachers, and young children. The ultimate impact and outcome of this program is twofold. First, this easy-to-use, low-cost training facilitates parents' empowerment to help young children to learn better and with more enthusiasm at home. Second, and most important, PCCP, whether administered in person or online, improves children's actual early learning. Across studies, this intervention was found to promote better learning in language, literacy, and mathematics, with evidence of cross-learning across domains. This research is innovative in its multifaceted approach to scaffolding parents and helping their children at home. That approach highlights the importance of broader educational knowledge, dialogic reading, language training, and number games for adults' toolkits in training their young children, offering a holistic approach to parent-led education, particularly in low-income family contexts. Methodologically, all of the techniques brought together to train parents of low-income students have been demonstrated to improve children's learning in peer-reviewed publications on early learning. Parents' own backgrounds and knowledge bases additionally influence this learning. PCCP works very well with low-income families and is easy to scale up. Indeed, the importance of the research and development that produced and validated PCCP is underscored by its widespread adoption by at least two major NGOs (Arcanys Learning Foundations; International Care Ministries) who have carried out versions of the training in their own work with well over 15,000 families in the Philippines.



## Research on the Parent-Child Coaching Program

**Professor Catherine (Cammie) McBride**

Purdue University and formerly The Chinese University of Hong Kong

### Background

Early learning is important for children's success in school. Millions of children worldwide fail to learn basic literacy and mathematics skills (UNESCO, 2017). Children's low educational attainment is associated with greater illness, more poverty, and lower wages (McBride, 2019; Raghupathi & Raghupathi, 2020). Early identification and training for children at-risk for learning problems is essential. The research coming from McBride's work in early childhood has helped to facilitate optimal early assessment and learning in literacy and mathematics. For instance, there is a need for early assessment of children at risk for learning difficulties related to language and literacy (e.g., McBride-Chang et al., 2008; 2011; Scherzer et al., 2012), because it is clear that there are ways to intervene early in development such that these early learning struggles can be remediated (e.g., McBride, 2019). As one example, McBride's preschool screening tool for dyslexia in Hong Kong (in children ages 4 and 5 years old), called the Hong Kong Dyslexia Early Screening Scale (Child Assessment Service, Department of Health, Government of the Hong Kong Special Administrative Region, 2022), has resulted in earlier identification and intervention for thousands of Hong Kong children at-risk for dyslexia and is routinely used by different support organizations (e.g., Pathways, n.d.). Another example of early assessment work in McBride's lab is the creation of the WordSword English Reading Test (Ho et al., 2023), a global assessment of early English word reading that has been evaluated in children across several countries with good results.



Beyond early assessment, training children in foundational learning can facilitate early school success. Indeed, without a solid early foundation in language and mathematics learning, children are at risk for subsequent difficulties in school. Although this early foundation is important for all children, those who grow up in low-income households are particularly at risk. Parents are clearly among the best and closest learning partners who can facilitate children's early learning (e.g., Vygotsky & Cole, 1978). Catherine McBride has led teams of researchers in facilitating early learning involving parent-child dyads in South Korea (Cho et al., 2017), Hong Kong (Cheung & McBride, 2017; Lam & McBride-Chang, 2013), Zambia (Kalindi et al., 2018), China (Wang & McBride, 2017), and the Philippines (e.g., Dulay et al., 2019), with attention to lower income households. Some of these programs have involved parent-child reading (e.g., Chow et al., 2008), others have specifically focused on parent-child writing (e.g., Lin et al., 2012), and still others have focused mainly on mathematics learning (e.g., Cheung & McBride, 2017).

McBride's lab has highlighted strategies that work across studies of child (Cho et al., 2020), parent (e.g., Cheung & McBride-Chang, 2015; Dulay et al., 2019) and teacher (e.g., Zhou et al., 2012) training. The parent-child coaching program (PCCP) described below emerged from extensive work across early learning areas and encompasses elements of language, literacy, and mathematics learning (e.g., Dulay et al., 2019). The focus on early mathematics learning, including cross-domain language-literacy-mathematics training, is particularly innovative in the context of early childhood.

Given the gap between rich and poor students both within and across countries (e.g., Chiu & McBride-Chang, 2010), it is essential that solutions to early education challenges be affordable. One particular aspiration for most programs developed by McBride is that they be low cost. Research in McBride's lab has demonstrated long-lasting effects of lower socio-economic status on families vis-à-vis children's learning (e.g., Dulay et al., 2018; Pan et al., 2017; Xie et al., 2022). This was one impetus for the massive open online course (MOOC) designed by McBride based on her books (2016; 2019) on literacy in partnership with NGO World Learning. That course, which was delivered at no cost worldwide, was viewed by 10,000 participants across 100 countries (e.g., Shrestha & K. McBride, 2019; World Learning, 2019). A recent study (Ruan et al., 2023) of this training material used in a Chinese context showed positive effects of the training of the parents on children with and without dyslexia in reading-related skills.

The parent-child coaching program (PCCP) began approximately ten years ago in Cebu, Philippines when we sought to determine the extent to which various short games prepared for parents, including only a small deck of cards with various numbers of cute animals on them, would help parents to teach their children some basic mathematics concepts (Cheung & McBride, 2015). This is a community-based outreach program based on McBride's research that focused on training young teachers, who then worked with parents of young children, to model for them how best to talk to their children about such concepts. These teachers met the parents wherever they were, often at home but sometimes even in their place of work, including busy stalls in the marketplace.

The parents seemed to be relatively happy to learn these skills and enjoyed having this deck of animal cards to use for meaningful, fun games with their children, and the idea took off from there. We soon added elements of language and literacy learning, fundamentals of early learning that we had identified in other contexts, as described below.

Parental involvement is a strong predictor of children's literacy development. McBride's lab's work, focused on training of adults in order to help children, began with studies of dialogic reading (e.g., Chow & McBride-Chang, 2003; Chow et al., 2008). In these studies, cited hundreds of times each, parents were taught how best to read with their children. This work involves getting parents to facilitate their children's language skills by talking broadly within the context of the story (e.g., Lonigan & Whitehurst, 1998). Our research in Asia has demonstrated that this works very well such that children's language skills consistently improve, and this is true even when children are learning in a foreign language learning context (e.g., Chow et al., 2010) or with children who are deaf or hard-of-hearing (e.g., Fung et al., 2005). Similarly, other studies of parent-child relationships have highlighted the fact that parents who scaffold children's early writing using effective strategies for learning tend to have children who are better in reading and writing than those whose parents use less effective strategies. This has been demonstrated in several studies of Chinese (e.g., Lin et al., 2009; Lin et al., 2011; Lin et al., 2012; McBride-Chang et al., 2012) and Korean (e.g., Cho & McBride, 2018) families.



Overall, parents' own awareness and practice of literacy habits tend to be important for children's early learning of both literacy (e.g., Dulay et al., 2019) and mathematics (e.g., Pan et al., 2022). We summarized some of these broad ideas of parent-child transmission of literacy and mathematics learning in early childhood across Asia in one recent review (Cheung et al., 2021). Our focus on various predictors of children's mathematics learning has broadened in the past few years (e.g., Liu et al., 2020; Yang et al., 2020), including a growing awareness of how language and literacy skills are associated with mathematics learning (e.g., Yang et al., 2021). This association across language, literacy, and mathematics skills for early learning (e.g., Purpura et al., 2019) is foundational for the parent-child coaching program (PCCP).

## Innovativeness

Overall, studies from McBride's lab represent innovation because they explore the interconnection among literacy, numeracy, and language development in diverse cultural contexts. This multicultural approach contributes to a deeper understanding of how these skills manifest and are nurtured across different societies. What is particularly striking is how various cognitive-linguistic skills related to language and literacy also tend to be associated with mathematics learning in young children (e.g., Pan et al., 2023; Yang et al., 2021). Accordingly, we created a large-scale program to teach aspects of language (particularly via dialogic reading), literacy (particularly via phonological skills and early print skills training), and mathematics learning in the parent-child coaching program (PCCP) (Dulay et al., 2019).

We compared results of training in different areas and found that training in each aspect facilitated learning. Moreover, there were cross-training effects, with early language learning influencing mathematics learning as well. Results of our work collectively provide new insights into early learning across language, literacy, and mathematics domains. This work suggests that teaching some skills in both mathematics and language and literacy learning early can optimally facilitate children's early learning. The training involves just 2-3 sessions per week of teacher scaffolding for a number of weeks. With this relatively minimal time commitment, children whose parents work with them at home using number and literacy activities show demonstrably better learning as compared to those who do not have such parent-child learning interactions.

During COVID-19, we tested the extent to which our findings could be applied in an online context. At that time, no face-to-face training of parents was possible in the Philippines because of government regulations. Therefore, we tried a similar program, combining language, literacy, and mathematics online with parents. Compared to a waitlisted control group, the 3- to 5-year-old children whose parents were trained in methods of early language-, literacy-, and mathematics- facilitation excelled in learning across domains (Cheah et al., 2024). The effect sizes of the gains in these skills were medium to large, and these were not moderated by socio-economic status (SES). Taken together, this research highlights the importance of an integrated, cross-domain early childhood training program.



## Importance

The focal point of our work revolves around our sustained commitment to promoting equal access to resources for children's literacy and mathematics development. A cornerstone of this commitment is the PCCP, which represents a systematic emphasis on young children's learning across two decades. The focus of this work has been on understanding what skills best identify and facilitate early learning and how to train these skills in children. This research has been carried out across several cultural contexts, mostly in Asia, a geographic area representing huge diversity in languages, cultural traditions, scripts, and ideas about early childhood education. The groups that have been included are relatively understudied. Moreover, many of our studies have focused particularly on lower SES children (e.g., Cheung & McBride, 2015; Chung et al., 2017; Dulay et al., 2019; Pan et al., 2017). It is crucial to focus on this group in particular given the interconnection between literacy and socioeconomic status (e.g., Blanchard, 2023). The PCCP training was designed specifically with disadvantaged children and families in mind. We are optimistic that this program might help narrow the gap between richer and poorer children in both literacy and mathematics achievement from early on. We also seek, through the PCCP, to empower lower income parents in having both the skills and the self-confidence to facilitate their children's early learning. This self-confidence is something that many parents in the program specifically highlight as crucial for their children's development. The results of this work have been impressive, such that at least two different NGOs in the Philippines (Arcanys Learning Foundations; International Care Ministries—see below) have adopted our methods, serving thousands of families in the process. The online stories highlighted by these two groups, e.g., <https://www.arcanyfoundation.org/stories> and <https://www.caremin.com/our-work/education>, respectively, emphasize both children's optimal achievement in mathematics and literacy learning and parents' own trust in themselves to help their children in early foundational learning, preparing them for success in elementary school and beyond.



## Methodological Rigor

The training described in several different studies (e.g., Cheah et al., 2024; Cheung et al., 2015; 2017; Chow et al., 2008; Dulay et al., 2019) has made use of early exploration in language, literacy, and most importantly mathematics to promote children's early learning. The training methods are described in detail in these peer-reviewed journal articles and have been replicated across studies. In addition, these methods have been adopted by International Care Ministries with a report (International Care Ministries, 2023, 54:44—please watch the film link referenced) showing that this particular educational program has resulted in higher educational gains for young children than the majority of additional intervention studies carried out across different contexts (International Care Ministries, 2023, 55:20). The analysis makes clear that these effects are strong and quite impressive across training studies work. Moreover, the 2019 Journal of Educational Psychology article (Dulay et al., 2019) in which the findings of our largest scale training study to date on PCCP were reported has already been cited 35 times in google scholar. Such analyses inspire confidence in future work. Importantly, International Care Ministries alone has already served well over 15,000 families using these techniques, with thousands of additional families receiving early educational interventions for their children via Arcanys Learning Foundations.



## Impact

The PCCP serves as a model for community-based interventions, showcasing the effectiveness of engaging parents in a hands-on manner to enhance their children's foundational skills. Implications of the PCCP are that it is possible to train all parents regardless of their education level or available resources in basic techniques that can facilitate their children's early learning. This applies particularly to poor parents with limited educational levels. The results of our study (Cheah et al., 2024) on online coaching has additionally revealed that these approaches apply to families who are coached online as compared to in person as well. In that paper, we emphasized the ecological validity of our approaches. Step by step in that research, we overcame various difficulties posed by the difficult 2.5-year lockdown in the Philippines during COVID-19. Our team of teachers, with sensitivity to parents' logistical needs related to managing at home, internet/technological issues, and challenges related to training and testing children completely online, carried out the training with fidelity and great success. Children who participated in this training online showed substantial gains in most mathematics skills and some language and literacy skills (e.g., alphabet knowledge, receptive vocabulary skills), with no moderation effect of socio-economic status. Findings are very promising and suggest that this approach could be widely disseminated across cultures.

Indeed, International Care Ministries has partnered with the Department of Education in the Philippines to use some of these techniques effectively for parents using distance learning. Crucially, the training is best if it combines language, literacy, and mathematics elements for early learning. There are relatively few programs that focus primarily on empowering parents, and ours demonstrates that parents are eager to learn and to practice skills in teaching their young children. The results of this coaching program have also highlighted the importance of the home environment in both literacy and mathematics (e.g., Cheung et al., 2018; 2020; Dulay et al., 2018; 2019) for early learning and preschool attendance. As a matter of educational policy and practice, an early focus on language, literacy, and mathematics combined both at home and at school appears to facilitate better learning in children.

The approach of this research is applicable across contexts. Our specific focus on lower income families has inspired confidence across the Philippines that this training works on multiple levels. It improves children’s learning and leads to parental self-confidence and interest in parent-child interactions that facilitate additional learning. The approach makes use of simple teaching techniques that can be done either one-one-one with parents or even in small groups. The findings and insights we have gained are applicable to other contexts. We have been particularly interested in lower and middle income countries and the extent to which our training can be helpful to lower income parents. Because of the “apprenticeship” model of teachers modeling for parents and coaching them on simple approaches to teaching basic concepts related to mathematics and language and literacy learning, the work can be applied across contexts. The focus on mathematics learning, in addition to language and literacy, is particularly novel given current interests and needs worldwide for STEM knowledge.

There is a complementary association between language/literacy skills and early mathematics skills (e.g., Purpura et al., 2019) that is important to highlight and support in early childhood. Such techniques can be used across cultural contexts. We have explored work in this area in Malaysia, India, and Hong Kong thus far.

Most immediately, this work has built a foundation for parental training interventions and led to the adoption of similar programs in two large NGOs in the Philippines. According to testimonials and statistics found on the websites of both NGOs, the PCCP has improved children's school achievement and enhanced parent-child bonding in well over 15,000 Filipino families. Both [Arcanys Foundation](#) and the [International Care Ministries](#) have widely adopted these methods and recommend them to others in other cultural contexts. Furthermore, the impact of this work is poised to continue in Cebu via Arcanys Foundation, which is committed to research on quality early childhood education and care programs for low-income communities. The Arcanys Foundation most immediately aims to conduct research comparing the results of the program in 3- and 6-month durations. They hope to investigate whether the transition to a longer program will enhance the effectiveness of this intervention for low-income families in Cebu.

The work of McBride's lab in language, literacy, and mathematics learning in early childhood has facilitated improved learning for young children, with a particular focus on parent-child interactions in early learning. The Parent-Child Coaching Program (PCCP) is critically important for early childhood learning because it is highly scalable across contexts. It is particularly useful to emphasize language, literacy, and mathematics learning and their interactions in early childhood development via practical, inexpensive, and fun parent-child learning models.

## References

- Blanchard, M. (2023). The relationship between socioeconomic status and literacy: How literacy is influenced by and influences SES. *Michigan Journal of Economics*.
- Cheah, Z. R. E., McBride, C., Dulay, K. M., Cheung, S. K., Reyes, P., & Dillenbourg, P. (2024). Effects of online parent coaching on Filipino children's skills. *Early Childhood Research Quarterly*, 68, 191-202. <https://doi.org/10.1016/j.ecresq.2024.05.006>
- Cheung, S. K., & McBride, C. (2017). Effectiveness of parent-child number board game playing in promoting Chinese kindergarteners' numeracy skills and mathematics interest. *Early Education and Development*, 28(5), 572-589. <https://doi.org/10.1080/10409289.2016.1258932>
- Cheung, S. K., & McBride-Chang, C. (2015). Evaluation of a parent training program for promoting Filipino young children's number sense with number card games. *Child Studies in Asia-Pacific Contexts*, 5(1), 39-49. <http://dx.doi.org/10.5723/csac.2015.5.1.039>
- Cheung, S. K., Dulay, K. M., & McBride, C. (2020). Parents' characteristics, the home environment, and children's numeracy skills: How are they related in low-to middle-income families in the Philippines?. *Journal of Experimental Child Psychology*, 192, 104780. <https://doi.org/10.1016/j.jecp.2019.104780>
- Cheung, S. K., Dulay, K. M., Yang, X., Mohseni, F., & McBride, C. (2021). Home literacy and numeracy environments in Asia. *Frontiers in Psychology*, 12, 578764.
- Cheung, S. K., Yang, X., Dulay, K. M., & McBride, C. (2018). Family and individual variables associated with young Filipino children's numeracy interest and competence. *British Journal of Developmental Psychology*, 36(2), 334-353. <https://doi.org/10.1111/bjdp.12222>
- Child Assessment Service, Department of Health, Government of the Hong Kong Special Administrative Region. (2022, March 31). The Hong Kong Dyslexia Early Screening Scale (HKDESS). Child Assessment Service Website. <https://www.dhcas.gov.hk/en/dess.html>
- Chiu, M. M., & McBride-Chang, C. (2010). Family and reading in 41 countries: Differences across cultures and students. *Scientific Studies of Reading*, 14(6), 514-543. <https://doi.org/10.1080/10888431003623520>



## References

- Cho, J. R., & McBride, C. (2018). Maternal literate mediation of writing and Korean children's reading and writing across 1 year. *Reading and Writing*, 31, 679-701. <https://doi.org/10.1007/s11145-017-9805-6>
- Cho, J. R., McBride, C., & Kim, B. (2020). Effective teaching instructions for Hangeul learning among Korean kindergartners. *Reading and Writing*, 33, 1791-1808. <https://doi.org/10.1007/s11145-019-09985-0>
- Cho, J. R., McBride, C., & Lin, D. (2017). The relation of maternal literate mediation strategies and socioemotional comments to Korean children's Hangeul reading. *Applied psycholinguistics*, 38(1), 155-179. <http://doi.org/10.1017/S014271641600014X>
- Chow, B. W. Y., & McBride-Chang, C. (2003). Promoting language and literacy development through parent-child reading in Hong Kong preschoolers. *Early Education and Development*, 14(2), 233-248. [https://doi.org/10.1207/s15566935eed1402\\_6](https://doi.org/10.1207/s15566935eed1402_6)
- Chow, B. W. Y., McBride-Chang, C., & Cheung, H. (2010). Parent-child reading in English as a second language: Effects on language and literacy development of Chinese kindergartners. *Journal of Research in Reading*, 33(3), 284-301. <http://doi.org/10.1111/j.1467-9817.2009.01414.x>
- Chow, B. W. Y., McBride-Chang, C., Cheung, H., & Chow, C. S. L. (2008). Dialogic reading and morphology training in Chinese children: effects on language and literacy. *Developmental psychology*, 44(1), 233. <https://psycnet.apa.org/doi/10.1037/0012-1649.44.1.233>
- Chung, K. K., Liu, H., McBride, C., Wong, A. M. Y., & Lo, J. C. (2017). How socioeconomic status, executive functioning and verbal interactions contribute to early academic achievement in Chinese children. *Educational Psychology*, 37(4), 402-420. <https://doi.org/10.1080/01443410.2016.1179264>
- Dulay, K. M., Cheung, S. K., & McBride, C. (2018). Environmental correlates of early language and literacy in low-to middle-income Filipino families. *Contemporary Educational Psychology*, 53, 45-56.
- Dulay, K. M., Cheung, S. K., & McBride, C. (2019). Intergenerational transmission of literacy skills among Filipino families. *Developmental Science*, 22(5), e12859.

## References

- Dulay, K. M., Cheung, S. K., Reyes, P., & McBride, C. (2019). Effects of parent coaching on Filipino children's numeracy, language, and literacy skills. *Journal of Educational Psychology*, 111(4), 641. <https://psycnet.apa.org/doi/10.1037/edu0000315>
- Florence, L.M.-Y. (n.d.). [Letter from Dr. LEE Mun-Yau Florence, Consultant Pediatrician, Child Assessment Service (CAS), Department of Health, Government of the Hong Kong Special Administrative Region]. Appended.
- Fung, P. C., Chow, B. W. Y., & McBride-Chang, C. (2005). The impact of a dialogic reading program on deaf and hard-of-hearing kindergarten and early primary school-aged students in Hong Kong. *Journal of deaf studies and deaf education*, 10(1), 82-95. <https://doi.org/10.1093/deafed/eni005>
- Ho, J. C. S., McBride, C., Lui, K. F. H., & Łockiewicz, M. (2023). WordSword: An Efficient Online Word Reading Assessment for Global English. *Assessment*, 0(0). <https://doi.org/10.1177/10731911231194971>
- International Care Ministries. (2023, December 4). ICM's 2023 US Banquet: Hope Shines Through! [Video]. YouTube. <https://www.youtube.com/watch?v=jQiEldisxcM>
- Kalindi, S. C., McBride, C., & Dan, L. (2018). Early literacy among Zambian second graders: The role of adult mediation of word writing in Bemba. *Reading Research Quarterly*, 53(1), 7-27. <https://doi.org/10.1002/rrq.180>
- Lam, S. S. Y., & McBride-Chang, C. (2013). Parent-child joint writing in Chinese kindergarteners: Explicit instruction in radical knowledge and stroke writing skills. *Writing Systems Research*, 5(1), 88-109. <https://doi.org/10.1080/17586801.2013.812532>
- Lin, D., McBride-Chang, C., Aram, D., & Levin, I. (2011). Mother-child joint writing in Chinese kindergarteners: Metalinguistic awareness, maternal mediation and literacy acquisition. *Journal of Research in Reading*, 34(4), 426-442. <http://doi.org/10.1111/j.1467-9817.2010.01446.x>
- Lin, D., McBride-Chang, C., Aram, D., Levin, I., Cheung, R. Y., Chow, Y. Y., & Tolchinsky, L. (2009). Maternal mediation of writing in Chinese children. *Language and Cognitive Processes*, 24(7-8), 1286-1311. <https://doi.org/10.1080/01690960801970615>

## References

- Lin, D., McBride-Chang, C., Aram, D., Shu, H., Levin, I., & Cho, J. R. (2012). Maternal mediation of word writing in Chinese across Hong Kong and Beijing. *Journal of Educational Psychology*, 104(1), 121. <https://psycnet.apa.org/doi/10.1037/a0025383>
- Liu, C., Cheung, S. K., Chung, K. K. H., McBride, C., Lam, C. B., & Li, X. (2020). The roles of executive functioning and oral language skills in young Chinese children's arithmetic competence. *Learning and Individual Differences*, 77, 101810. <https://doi.org/10.1016/j.lindif.2019.101810>
- Lonigan, C. J., & Whitehurst, G. J. (1998). Relative efficacy of parent and teacher involvement in a shared-reading intervention for preschool children from low-income backgrounds. *Early childhood research quarterly*, 13(2), 263-290.
- McBride, C. (2016). *Children's literacy development: A cross-cultural perspective on learning to read and write*. Routledge.
- McBride, C. (2019). *Coping with dyslexia, dysgraphia and ADHD: A global perspective*. Routledge.
- McBride-Chang, C., Lam, F., Lam, C., Chan, B., Fong, C. Y. C., Wong, T. T. Y., & Wong, S. W. L. (2011). Early predictors of dyslexia in Chinese children: Familial history of dyslexia, language delay, and cognitive profiles. *Journal of Child Psychology and Psychiatry*, 52(2), 204-211. <https://doi.org/10.1111/j.1469-7610.2010.02299.x>
- McBride-Chang, C., Lam, F., Lam, C., Doo, S., Wong, S. W., & Chow, Y. Y. (2008). Word recognition and cognitive profiles of Chinese pre-school children at risk for dyslexia through language delay or familial history of dyslexia. *Journal of Child Psychology and Psychiatry*, 49(2), 211-218. <https://doi.org/10.1111/j.1469-7610.2007.01837.x>
- McBride-Chang, C., Lin, D., Liu, P. D., Aram, D., Levin, I., Cho, J. R., ... & Zhang, Y. (2012). The ABC's of Chinese: Maternal mediation of Pinyin for Chinese children's early literacy skills. *Reading and Writing*, 25, 283-300. <https://doi.org/10.1007/s11145-010-9270-y>
- Pan, D. J., Liu, Y., Zheng, M., Ho, C. S. H., Purpura, D. J., McBride, C., & Ong, J. (2023). Visual-orthographic skills predict the covariance of Chinese word reading and arithmetic calculation. *Reading and Writing*, 1-24. <https://doi.org/10.1007/s11145-023-10473-9>

## References

- Pan, D. J., Yang, X., Ku, Y. Y. S., Dulay, K. M., Cheung, S. K., McBride, C., ... & Ho, C. S. H. (2022). Variability in Asian parents' English and mathematics skills: A family-based study. *Frontiers in Education* 7, 898201. <https://doi.org/10.3389/feduc.2022.898201>
- Pan, J., Kong, Y., Song, S., McBride, C., Liu, H., & Shu, H. (2017). Socioeconomic status, parent report of children's early language skills, and late literacy skills: a long term follow-up study among Chinese children. *Reading and Writing*, 30, 401-416. <https://doi.org/10.1007/s11145-016-9682-4>
- Pathways. (n.d.). Professional Screening & Assessment Services Brochure. Professional Screening & Assessment Services. <https://pathways.org.hk/wp-content/uploads/2020/09/Professional-Screening-Assessment-Services.pdf>
- Purpura, D. J., Litkowski, E. C., & Knopik, V. (2019). Mathematics and reading develop together in young children: practical and policy considerations. *Policy Insights from the Behavioral and Brain Sciences*, 6(1), 12–20.
- Raghupathi, V., & Raghupathi, W. (2020). The influence of education on health: an empirical assessment of OECD countries for the period 1995–2015. *Archives of Public Health*, 78(1), 1-18.
- Ruan, Y., Ye, Y., & McBride, C. (2023). Effectiveness of parent coaching on the literacy skills of Hong Kong Chinese Children with and without dyslexia. *Reading and Writing*, 1-22. <https://doi.org/10.1007/s11145-022-10408-w>
- Scherzer, A. L., Chhagan, M., Kauchali, S., & Susser, E. (2012). Global perspective on early diagnosis and intervention for children with developmental delays and disabilities. *Developmental Medicine & Child Neurology*, 54(12), 1079-1084.
- Shrestha, R., & McBride, K. (2019, March 19). How to help children learn to read better around the world. Global Partnership for Education. <https://www.globalpartnership.org/blog/how-help-children-learn-read-better-around-world>
- UNESCO. (2017). More than one-half of children and adolescents are not learning worldwide. *UIS Fact Sheet*, 46.

## References

- Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.
- Wang, Y., & McBride, C. (2017). Beyond copying: A comparison of multi-component interventions on Chinese early literacy skills. *International Journal of Behavioral Development*, 41(3), 380-389. <https://doi.org/10.1177/0165025416637212>
- World Learning. (2019). Teaching struggling readers around the world analysis report. World Learning website. [https://www.worldlearning.org/wp-content/uploads/2019/09/WL-19-050-Struggling-Readers-MOOC-Report\\_Final.pdf](https://www.worldlearning.org/wp-content/uploads/2019/09/WL-19-050-Struggling-Readers-MOOC-Report_Final.pdf)
- Xie, Q., Zheng, M., Ho, C. S. H., McBride, C., Fong, F. L. W., Wong, S. W., & Chow, B. W. Y. (2022). Exploring the genetic and environmental etiologies of phonological awareness, morphological awareness, and vocabulary among Chinese–English bilingual children: The moderating role of second language instruction. *Behavior Genetics*, 52(2), 108-122. <https://doi.org/10.1007/s10519-021-10096-2>
- Yang, X., Dulay, K. M., McBride, C., & Cheung, S. K. (2021). How do phonological awareness, rapid automatized naming, and vocabulary contribute to early numeracy and print knowledge of Filipino children?. *Journal of Experimental Child Psychology*, 209, 105179. <https://doi.org/10.1016/j.jecp.2021.105179>
- Yang, X., McBride, C., Ho, C. S. H., & Chung, K. K. H. (2020). Longitudinal associations of phonological processing skills, Chinese word reading, and arithmetic. *Reading and Writing*, 33, 1679-1699. <https://doi.org/10.1007/s11145-019-09998-9>
- Zhou, Y. L., McBride-Chang, C., Fong, C. Y. C., Wong, T. T. Y., & Cheung, S. K. (2012). A comparison of phonological awareness, lexical compounding, and homophone training for Chinese word reading in Hong Kong kindergartners. *Early Education & Development*, 23(4), 475-492.