



# The Effectiveness of “Pathways Preschool Chinese Programme” on improving language and literacy development of pre-schoolers with at-risk reading and writing difficulties



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## Introduction

- Early markers of reading and writing difficulties in Chinese included e.g. oral language abilities, morphological awareness (Ho et al., 2011)
- Early literacy intervention brings more effective remediation than later interventions for children at risk for reading and writing difficulties (National Institute of Child Health and Human Development; NICHD, 2003)
- “Pathways Preschool Chinese Programme”
  - Early reading intervention programme with systematic integration of story books and interactive activities
  - Aim at enhancing critical foundations of oral language, word decoding, reading- and writing-related abilities
- Hypotheses
  - Improvement in oral language and literacy-related abilities after a 12-week literacy intervention program

## Methodology

### Participants

- N=95 (43 boys, 52 girls) from 6 preschools
- Mean age = 66.4 months
- Three groups

- Group 1\* (weak reading & writing; with training)
- Group 2\* (weak reading & writing; without training)
- Group 3 (normal reading & writing; without training)

\*Screened using the word reading subtest in The Hong Kong Reading Ability Screening Test for Preschool Children

### Pre- and post-intervention measures

Oral language	Literacy
Discourse comprehension	Word reading
Oral vocabulary	Reading fluency
Narrative production	Print awareness
	Morphological awareness
	Reading motivation

### Intervention procedures

- Training group size: 4-6 children
- 12 hourly sessions; 1-2 sessions a week
- Use of 4 children storybooks covering common themes (e.g. transportation, food)
- Delivered online or face-to-face by teachers
- Each training session consists of 2 parts:
  - Book reading (using a dialogic reading approach)
  - Language and literacy activities (e.g. categorisation of common objects, morphological compounding)

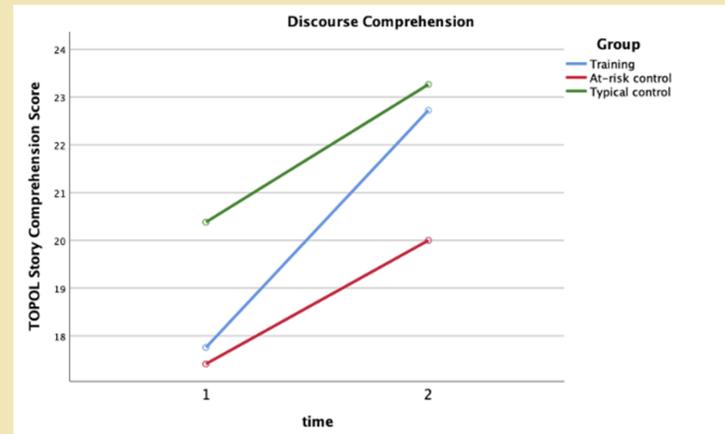


## Results

\*Training (group 1) At-risk control (group 2) Typical control (group 3)

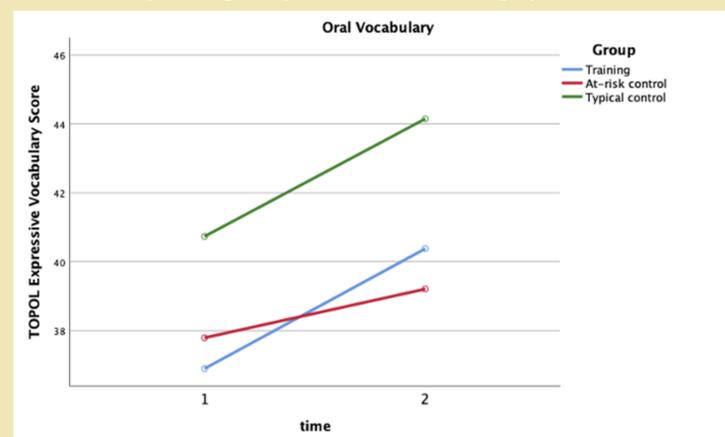
### Discourse comprehension

- ANCOVA of group 1 vs. 2 (pre-test scores controlled)
  - Group 1 > group 2 after training (p=.002)
- Factorial ANOVA of time x group (group 1 vs. 3)
  - Group 1 caught up with group 3 (p=.013)



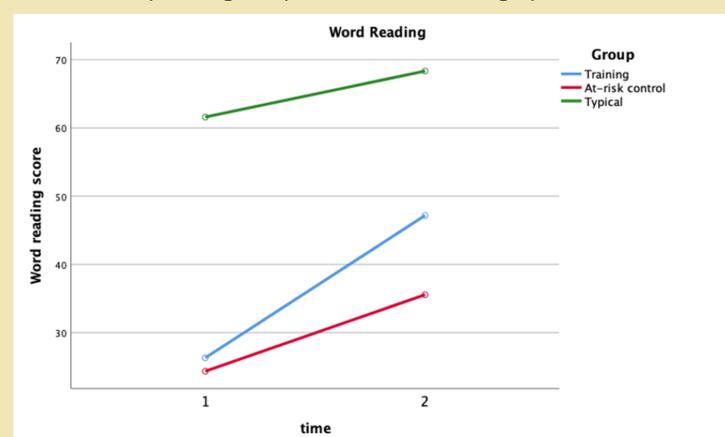
### Oral vocabulary

- ANCOVA of group 1 vs. 2 (pre-test scores controlled)
  - Group 1 > group 2 after training (p=.032)



### Word reading

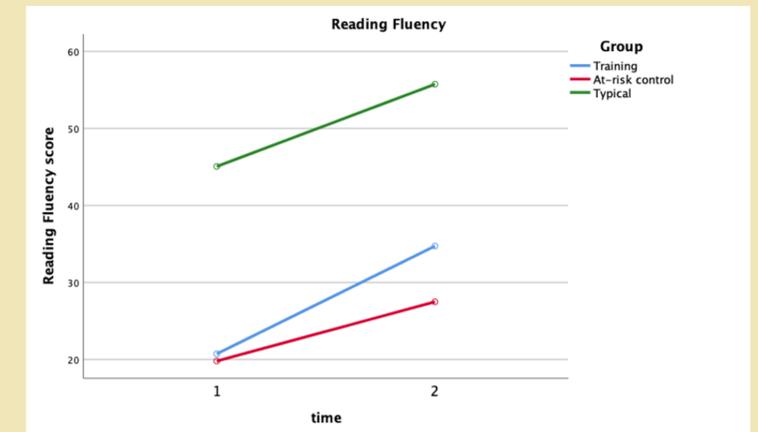
- ANCOVA of group 1 vs. 2 (pre-test scores controlled)
  - Group 1 > group 2 after training (p<.001)



## Results

### Reading fluency

- ANCOVA of group 1 vs. 2 (pre-test scores controlled)
  - Group 1 > group 2 after training (p<.001)



## Discussion & Conclusion

- The intervention group showed significantly greater improvement in discourse comprehension, oral vocabulary, word reading and reading fluency, than their at-risk control peers
- The performance of intervention group on discourse comprehension was similar to those of the typically-developing group after training
- Implications
  - “Pathways Preschool Chinese Programme” could be applied as a tier-2 intervention for children with at-risk reading and writing difficulties in local preschools
- Future research directions
  - Evaluation of long-term maintenance effect (e.g. 6 months post-intervention)
  - Comparison between the effectiveness of face-to-face vs. online training
  - Involvement of children with developmental language disorder
  - Efficacy of parent-implemented version of similar intervention paradigm

## Key references

Ho, C. S. H., Leung, M. T., & Cheung, H. (2011). Early difficulties of Chinese preschoolers at familial risk for dyslexia: Deficits in oral language, phonological processing skills, and print-related skills. *Dyslexia*, 17(2), 143-164.  
 National Institute of Child Health and Human Development (NICHD). (2003). *Thirty years of research: What we now know about how children learn to read: A synthesis of research on reading from the National Institute of Child Health and Human Development*. <http://www.ksagroup.com/thecenter>.