

Animated Electronic Storybook and Mandarin Learning

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KEY IMPLICATIONS

- The motion feature of animated eBooks promotes children's word production, total fixation time, and the memory of complicated story plots.
- The contribution of sound to Mandarin language learning in animated eBooks is limited.

BACKGROUND

Animated storybooks have been shown to be promising for child bilingual learners in particular, as these young language learners might need additional cues to comprehend story plots and grasp new words and grammar. Most of the existing studies focus on Germanic languages, and little is known about whether such an “animated advantage” could be extended to Mandarin.

The current study explores if and how the promising features such as motion and sound may assist English-Mandarin bilingual preschoolers to acquire Mandarin in Singapore. Although bilingualism is a cornerstone of the Singapore education system, recent years have

witnessed an inclination for English use in bilingual families, resulting in limited Chinese proficiency of children. As such, the findings of the current study have both social and academic relevance.

FOCUS OF STUDY

The first objective is to examine whether animated storybooks will promote children's learning outcomes (novel word and reading comprehension) compared to the traditional book format. The second objective is to find out whether the special features of e-storybooks (i.e., sound and motion) can help retain longer visual attention from children.

KEY FINDINGS

The results reveal that children in the animated condition outperform their counterparts in total fixation duration, target word production, and storytelling of one of the stories (Boonen, 2014). There were no consistent differences between the two static conditions. Our results indicate the importance of motion in animated eBook design, in line with previous findings.

SIGNIFICANCE OF FINDINGS

Our findings are in line with previous studies in Germanic languages that show animated eBooks could facilitate children's emergent language development.

As our study focuses on Mandarin, which is one of the "notorious" languages that is difficult to learn, our positive findings from animated books implies such a reading format might be useful for child bilingual learners to acquire this tonal language. When children were provided with motion-powered illustrations, their average fixations were longer and steadier as they moved less between various visual elements in the animated condition. Such longer and steadier attention suggests in-depth processing of the essential details and integration of the story information, which might lead to better learning results. This is particularly timely, given that computer and internet use in this age group is rapidly increasing. In 2018, 77% of Singapore residents under the age of seven were Internet users, up from 40% in 2016 (IMDA, 2018).

PARTICIPANTS

A total of 202 English-Chinese bilingual preschoolers in Kindergarten 1 (89 boys and 112 girls) were recruited from 21 preschools in Singapore for the screening tests, and 102 of them were selected to participate in this study.

RESEARCH DESIGN

A total of 102 four to five-year-old preschoolers in Singapore were assigned to one of these four conditions: 1) animated eBooks (with sound and motion), 2) static eBooks with sound, 3) static eBooks only, and 4) a control condition where children played a math game on an iPad. Three stories were displayed to children each for four times over two weeks, while visual attention was traced with an eye-tracker. Children's target words and story comprehension were assessed for the effects of the intervention conditions.

REFERENCES

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