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RESEARCH BRIEF

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ABCmouse English Is Highly Effective in Helping Young Chinese Children Learn English: A Randomized Control Trial

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Key Findings

- By using ABCmouse English for about 30 hours over six months, beginner English learners improved their English language skills nearly threefold.
- Treatment group children made significantly greater gains in English language knowledge compared to the control group.
- Treatment group children's level of engagement with ABCmouse English was statistically significantly higher than that of their control group peers with their assigned apps.
- Treatment group parents reported improvements not only in their children's English language skills, but also in their confidence, interest, and motivation to learn English.

Overview

In many parts of the world where English is not a primary language, parents consider English language skills critical to their children's success in life. This is particularly true among parents in China, who exhibit a very significant demand for systems, teaching approaches, and products that are designed to help children learn English.¹ Although compulsory English

education in China does not begin until the third year of primary school, an increasing number of schools are introducing it earlier in their curriculum, and parents are following suit.²

In recent years, the number and variety of digital education programs designed to facilitate learning in various subject areas has grown rapidly. Language learning is especially well-suited for digital game-based learning, given the immersive environment, lower anxiety, and increased use of the target language afforded in interactive games.³ One digital learning program available to young Chinese children seeking to develop their English language skills is Age of Learning's *ABCMouse English*, which teaches English as a foreign language (EFL) to children (ages 3–8) in a developmentally appropriate, immersive English language environment, in the same natural sequence as children learning their native language.

For this study, Age of Learning partnered with OneLeap, a design and research consultancy in China. Age of Learning researchers designed the study and worked with OneLeap to recruit, communicate with the participants, and arrange the logistics associated with data collection. Age of Learning also conducted the data analyses and interpretations of results. A primary goal of the study was to understand the extent to which ABCmouse English, a self-guided digital learning app,

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¹ Qi, G.Y. (2016). The importance of English in primary school education in China: perceptions of students. *Multilingual Education*, 6, 1–18.

² Jin, L., Jiang, C., Zhang, J., Yuan, Y., Liang, X., & Xie, Q. (2014). Motivations and expectations of English language learning among primary school children and parents in China. *ELT Research papers*, 1–33. Retrieved from

<https://www.teachingenglish.org.uk/sites/teacheng/files/E202%20MEEL%20-%20ELTRA%20FINAL%20v2.pdf>; Wenting, Z. (2019, January 24). Children make early start at learning English. *China Daily*. Retrieved from <https://www.chinadailyhk.com/articles/141/213/135/1548312114049.html?newsid=60205>

³ Chiu, Y., Kao, C., & Reynolds, L. (2012). The relative effectiveness of digital game-based learning types in English as a foreign language setting: A meta-analysis. *British Journal of Educational Technology*, 43(4), 104–107. doi: [10.1111/j.1467-8535.2012.01295.x](https://doi.org/10.1111/j.1467-8535.2012.01295.x); Jensen, S. H. (2017). Gaming as an English language learning resource among young children in Denmark. *CALICO Journal*, 34(1), 1–19. doi: [10.1558/cj.29519](https://doi.org/10.1558/cj.29519)

can help 5- and 6-year-old Chinese children develop English language skills.

Program

ABCmouse English is a self-guided digital learning program that incorporates empirically supported, effective practices from second language instruction. A team of language acquisition researchers, teachers, curriculum specialists, and developers used the Common European Framework of Reference (CEFR) standards, the American Council on the Teaching of Foreign Language (ACTFL) guidelines, and second language research to create a program that presents content in the developmental sequence that language is acquired. The program is task- and activity-based, and it provides engaging opportunities for learners to interact with activities in authentic, meaningful contexts that include objects, events, and situations that children encounter in their everyday lives (e.g., animals, families, foods).⁴ Learners receive scaffolded target language input,⁵ construct knowledge through trial and error, and receive timely and developmentally appropriate implicit and explicit corrective feedback that is embedded in activities.⁶ Additionally, the self-guided Learning Path in the program leads learners through progressively more challenging material and is designed to encourage children to become active, independent learners. Finally,



Figure 1. Bubble Popper Game: Player hears the word *fish*. The task is to tap on all of the bubbles that contain fish and ignore the bubbles that contain distractors.

given the great deal of research linking motivation and second language (L2) learning outcomes, the program



Figure 2. Talk Time Game: a) Player hears a conversation between two children. b) Player selects a correct answer among three sentences produced by three children. c) Player is asked to produce an answer to the question (microphone).

- 4 Berardo, S. A. (2006). The use of authentic materials in the teaching of reading. *The Reading Matrix*, 6(2), 60–69. Retrieved from <https://pdfs.semanticscholar.org/f786/6114ebf30bb220fac1cf838553458776feed.pdf>
- 5 Moeller, A. & Roberts, A. (2013). Keeping it in the target language. *Multitasks, multiskills, multiconnections: Selected papers from the 2013 central states conference on the teaching of foreign languages*, 21–38. Retrieved from <https://digitalcommons.unl.edu/teachlearnfacpub/178/>
- 6 Dean, C. B., Hubbell, E. R., Pitler, H. & Stone, B. J. (2012). *Classroom instruction that works*. Alexandria, VA: ASCD; Mackey, A. (2012). *Input, interaction and corrective feedback in L2 classrooms*. Oxford: Oxford University Press.
- 7 Masgoret, A. and Gardner, R. C. (2003). Attitudes, Motivation, and Second Language Learning: A Meta-Analysis of Studies Conducted by Gardner and Associates. *Language Learning*, 53, 123–163. doi: [10.1111/1467-9922.00212](https://doi.org/10.1111/1467-9922.00212)

was designed first and foremost to promote learner engagement and motivation.⁷

The participants in this study used the first two levels of the program, which targeted a total of 165 words and 15 sentences. The themes covered in these levels include animals, common objects, food, places, colors, the numbers 1–15, shapes, people, feelings, body parts, clothing, pronouns, and classrooms. Figures 1–2 show screenshots of sample games that students played in the program.

Participants

A total of 122 children and their parents participated in the study between December 2018 and June 2019. Participants resided in Hangzhou, the fourth largest metropolitan area in China, and we used a list of screening questions to identify children between 5 and 6 years old at the start of the study, with little to no prior English knowledge (i.e., knowing fewer than 20 words in English). Children whose parents were professionals in industries with a substantial amount of English usage (e.g., English teaching, marketing) were not eligible for participation. There were no significant differences between groups in terms of parents' educational levels (62.1% of control and 60.7% of treatment group parents reported having completed junior college) or income (51.7% of control versus 50.8% of treatment group parents reported monthly income of USD 1,423.00–2,846.00). The final analytic sample included 113 children (63 treatment, 50 control), excluding 6 (1 treatment, 5 control) who enrolled in an English class during the study; 2 treatment children who were unable to attend an assessment; and 1 control child who was not interested in using the assigned app.

Design and Procedures

We used two measures of English language proficiency, one external and one internal, to assess children's language skills at the start and at the end of the six-month period. After balancing pretest scores, age, and gender, we randomly assigned 66 children to the treatment group and 56 children to the control group. We asked the treatment group children to use the

ABCmouse English program for a minimum of 15–20 minutes daily for six days a week for 26 weeks. To ensure all participants met the minimum threshold for usage each week, we monitored the usage data on a weekly basis via surveys completed by parents and by reviewing the back-end game data. When children did not meet the usage goals, we reached out to their parents through our research consultants in China and offered incentives to those who made the greatest improvements in terms of making up for missed time. For the control group children, we assigned digital math learning apps (Xiaobanlong, Youdao Math, and Miao Kids Math, none of which have content in English) and asked them to use the app for the same amount of time over the six months. Additionally, all parents completed an end-of-study survey, and 14 treatment parents participated in individual interviews or focus groups.

The external measure of children's English skills was the IDEA Language Proficiency Test (IPT),⁸ a long-standing, widely-used assessment of overall English language skills that has been found to be accurate and reliable in studies involving speakers of Spanish, Chinese, Japanese, and Korean.⁹ We used the Pre-IPT Oral Proficiency Test, which is designed for young learners between ages 3 and 5, and it involved an examiner asking 10 questions (targeting vocabulary, grammar, comprehension, and language functions) in English using a storyboard and cardboard pieces. The internal test was one that Age of Learning curriculum specialists and assessment experts created, and it targeted linguistic forms that children would have been naïve to at the beginning of the study but learned through the game over the course of the study. This assessment included a total of 25 questions divided into five subsections (Vocabulary Identification, Listening for Meaning, Speech Production, Conversation, and Pronunciation). Two bilingual assessors, blind to the treatment or control condition assignments of children, administered the assessments in English.

On average, treatment children used ABCmouse English for 29.29 hours (SD = 8.21) across 118.75 days (SD = 27.20) and completed 3,015 questions (SD = 1,096). Control students used their apps, on average, for 11.99 hours (SD = 2.32) during the same period.

8 Ballard & Tighe, Publishers (2019). Idea Proficiency Test. <http://www.ballard-tighe.com/home/>

9 Cook, A. (1995). A review of the IDEA Oral Language Proficiency Test Forms C & D—English. Paper presented at the Annual Meeting of the Southwest Educational Research Association (Dallas, TX, January 27, 1995). Retrieved from <https://files.eric.ed.gov/fulltext/ED380512.pdf>; Stansfield, C. W. (1991). Idea Oral Language Proficiency Test. In K. Keyser and R. C. Sweetlands (Eds.), *Test Critiques: Volume VIII*. Austin, TX: Pro-Ed.

Results

Finding 1. By using ABCmouse English for about 30 hours, beginner English learners improved their English language skills nearly threefold.

We created an overall score of English language skills by creating a weighted average of the children’s scores on the external and internal assessments. As shown in Figure 4, by posttest, treatment group children significantly outperformed their control group peers on the overall measure of English language skills ($t(111) = 11.61, p < .001$, Cohen’s $d = 2.17$).

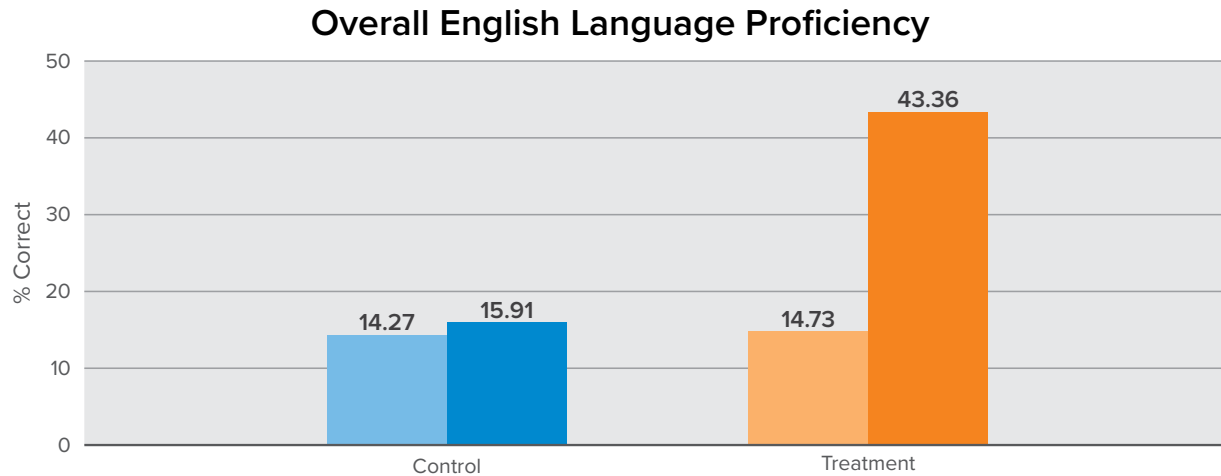


Figure 4. Weighted average of pre- and posttest scores on the IDEA Language Proficiency Test and internal assessment of language skills. Lighter shades represent pretest scores; darker shades represent posttest scores.

Finding 2. Students using ABCmouse English made significantly greater gains in English language knowledge compared to the control group.

The pre- and posttest comparisons of individual subsections of the internal assessment showed that treatment group children made statistically significant improvements on each of the language skills assessed (Figure 5). The difference between the treatment group’s and the control group’s posttest scores on each section was statistically significant at $p < .001$. Effect sizes (Cohen’s d) ranged from 0.68 to 2.18.

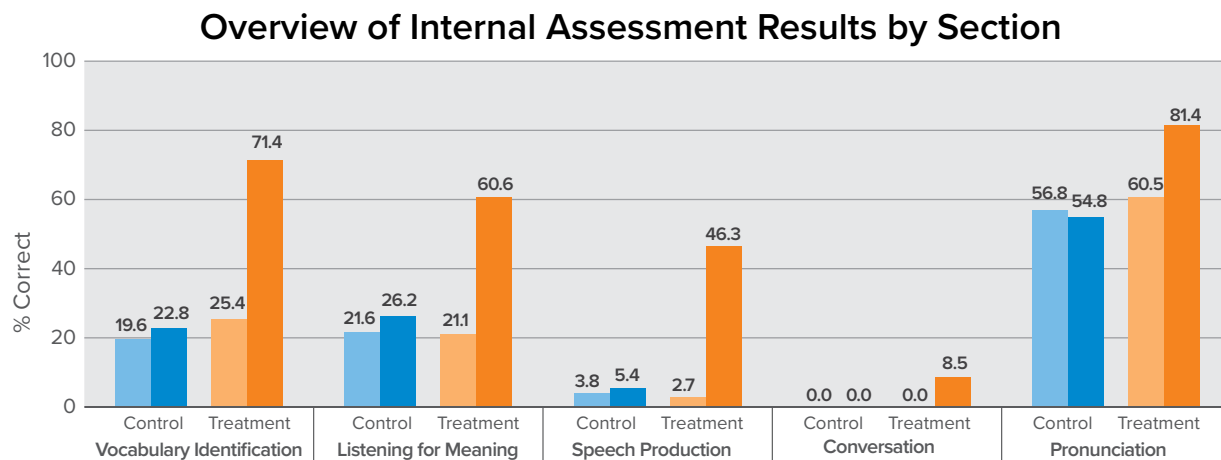


Figure 5. Pre- and posttest scores on subsections of the internal assessment. Vocabulary Identification ($t(111) = 11.62, p < .001$, Cohen’s $d = 2.18$); Listening for Meaning ($t(111) = 7.62, p < .001$, Cohen’s $d = 1.43$); Speech Production ($t(111) = 9.59, p < .001$, Cohen’s $d = 1.80$); Conversation ($t(111) = 3.62, p < .001$, Cohen’s $d = 0.68$); Pronunciation ($t(111) = 6.41, p < .001$, Cohen’s $d = 1.21$).

Finding 3. Across nearly all 26 weeks of the study, treatment children’s level of engagement with ABCmouse English was statistically significantly higher than that of their control group peers with their assigned apps.

On weekly surveys, parents reported whether their children were “never,” “rarely,” “occasionally,” “very frequently,” or “always” engaged while using their learning apps (Figure 6). Except for weeks 1 and 9 of the study (Lunar New Year), the majority of treatment parents consistently reported that their children were “very frequently” or “always” engaged when using ABCmouse English. The difference between the two groups’ engagement levels is statistically significant ($p < .05$ – $p < .001$).

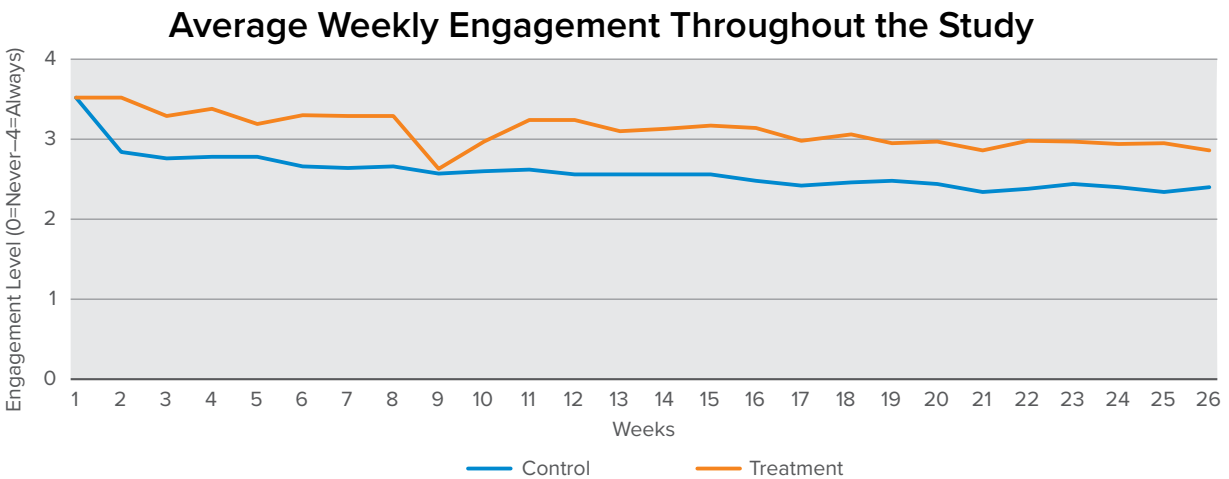


Figure 6. Parents’ average weekly report of their children’s engagement level by group.

In interviews, parents further elaborated on how ABCmouse English engaged their children in learning English.

“We used to teach him some simple words, but he didn’t show a strong interest... but he fell in love with the lessons on ABCmouse. Now he has learned to express himself in English when he sees something he likes. I see his passion now.”

—Mother of a 6-year-old boy

“Over the past six months, my daughter has enjoyed English learning and the app. She has not used it these [last] few days, and she asked me when she could study with the app. It has become a must in her life.”

—Mother of a 6-year-old girl

End-of-study parent surveys also revealed that parents viewed ABCmouse English as an effective resource to help children get an early start in English language learning. The native English speakers featured in the activities offered Chinese children opportunities to listen to and learn from the accurate pronunciations of English words. The design of the game, emphasizing authentic communication, was particularly valuable in the EFL context where limited input in the target language is available in learners’ everyday lives.

Finding 4. Treatment parents reported that their children not only improved in their English language skills, but also that they became more confident, interested, and motivated to learn English.

Feedback collected from parents through end-of-study surveys corroborated the students’ assessment results. As shown in Figure 7, most treatment group parents indicated that they observed improvements in their children’s ability

to speak, read, understand, and pronounce English words and sentences. Similarly, the majority of treatment parents reported that their children became more confident, interested, and motivated to learn English and more self-directed and persistent as learners (Figure 8).

My child has made improvements in...

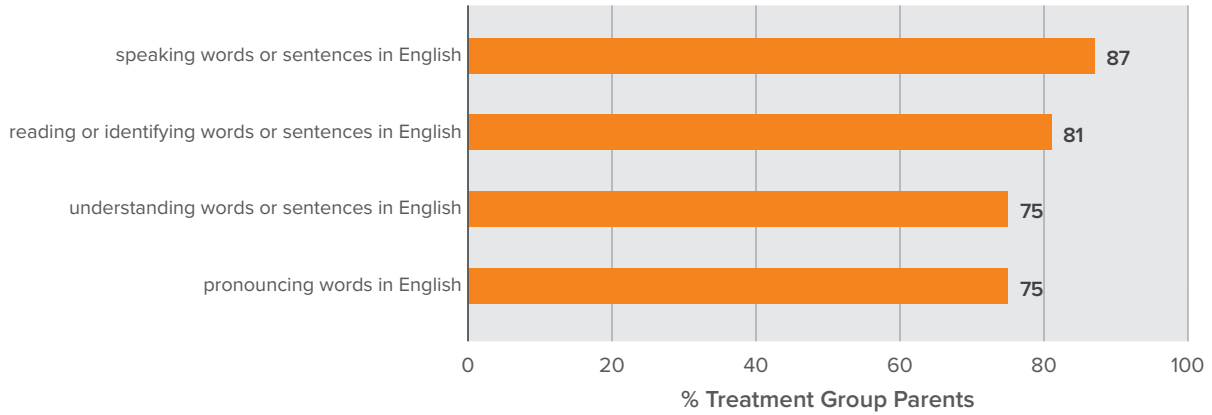


Figure 7. Percent of treatment group parents reporting “strongly agree” or “agree” with each statement.

I believe that ABCmouse English has helped my child...

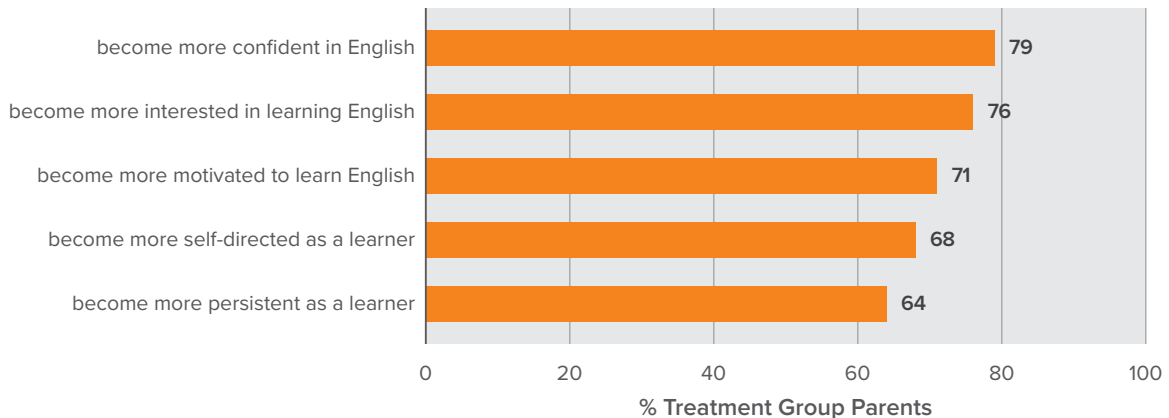


Figure 8. Percent of treatment group parents reporting “strongly agree” or “agree” with each statement.

Conclusion

This is the first efficacy study of an ABCmouse English product designed specifically for young learners of English in China. By using the self-guided learning program consistently over six months, beginner English learners made significant gains in their English language skills. Parents greatly valued the opportunity to have their children engage in activities and interactions with the native-English-speaking instructors in ABCmouse English. They indicated that it is a cost-effective learning

resource. This was especially the case for those who may not have the means or the time to take their children to English language classes or provide other input for them, but who nevertheless want their children to have an early start in English. The fact that ABCmouse English also helped children stay engaged in learning, while developing an interest in and a motivation for learning English, also makes it valuable, since engagement, interest, and motivation are important prerequisites for learning.