

The Integration of Internet and Picture Book: Using Online Picture Book Reading Project to Promote Primary School Students' Reading Literacy

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Abstract. This study aims to explore the effect of the combination of English picture books and the Internet on pupils' English reading literacy. 12 primary school students participated in the online picture book reading project. The results are as follows: first, through pre-test and post-test, students' reading comprehension ability has been improved; Second, the questionnaire shows the online project can help them increase reading interests, develop good reading habits and reading strategies; Last but not least, children give positive feedback to the project, especially about reading-guide videos and teachers' comments in pronunciation. In general, the online project can promote pupils' reading literacy.

1 Introduction

The picture book is a kind of books with a lot of pictures and a small amount of words to convey information or tell a complete story, especially for children. Picture books can cover many topics and social contexts, which are close to children's daily life, and the plots and language are vivid and simple, so that kids are interested in reading them. In English as a foreign language (EFL) contexts, English picture books are of positive help to young students in forming a sense of English language, perceiving English pronunciation, acquiring common vocabulary, and using English to express their personal views [1]. In addition to the improvement in language ability, English picture books are also useful for intercultural education to cultivate children's cross-cultural awareness [2]. In view of English picture books' advantages, many teachers in China integrate English picture book reading into classroom teaching or use picture books as supplementary materials for textbooks, while parents also encourage their kids to read more English picture books at home.

In order to help children read English picture books in a better and more convenient way, some companies have launched applications for English picture book reading. Quting English Picture-book App provides kids with various digital English picture books and

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matching recording, such as *Oxford Reading Tree series*, *Heinemann Leveled Literacy Intervention*, etc. Ququ English App features a special function of scoring kids' pronunciation by computer system when they are reading aloud. Banyu Picture-book App sets up some question games according to the content and vocabulary of picture books, through which children can both have fun and do some exercises to consolidate knowledge. These Apps present different multimodal learning modes for young children to read English picture books. However, most Apps only have rich resources of picture books but don't teach children how to read them, how to improve their pronunciation and intonation, or how to discover values and cross-cultural phenomena behind the book.

Knowing the advantages and disadvantages of Apps mentioned above, researchers of this study designed an online picture book reading project, which contains digital picture books, audio recordings, reading-guide videos on one hand, and teachers to comment and offer suggestion on children's pronunciation. The study is aimed to examine whether the online reading project can promote primary school students' reading literacy as well as to investigate on children's attitudes and personal views towards the project. The research questions are posed as follows:

1. To what extent can the online picture book reading project improve primary school students' reading literacy?
2. What are the effects of the project on students' reading interests, reading habits, reading strategies and reading emotion?
3. What are the children's attitudes towards the project?

2 Literature review

2.1 The influence of picture book reading on students' reading literacy

With the development of the times, the use of picture books in English education has attracted more and more researchers' attention, and scholars generally believe that picture books are of great benefit to the development of learners' learning literacy, especially for young children [3]. According to Wang and Ao, reading literacy includes reading ability and reading character [1]. Among them, reading ability includes decoding ability, language knowledge, reading comprehension and cultural awareness. Reading character includes reading habit and reading experience.

In terms of reading ability, picture book reading can help learners develop reading skills and understand specific languages. Through the experiment in teaching English by reading picture books, Niblack concluded that students' use of English picture books can stimulate their interest in learning, improve their vocabulary learning ability, grammar knowledge and language production ability [4]. In terms of reading character, Edinger stated that picture books can provide entertainment and indirect experience, develop learners' imagination, and present universal life experience [5]. Other researchers also believe that using picture books in English teaching can not only provide a real and meaningful context for language learning, but also improve students' reading literacy and thinking ability [6].

Although the combination of English teaching and picture book reading can improve students' reading literacy, there are still some problems in the implementation. Some researchers and educators have also put forward their own views and suggestions.

To sum up, Reading English picture books can effectively improve students' English reading literacy and help them develop good reading character.

2.2 The combination of technology and picture books

Nowadays, artificial intelligence and the Internet are widely used in our daily life, which also has a subversive impact on the education industry and picture book reading.

The picture book materials for children have undergone rapid and profound changes with the developments in the digital realm in recent years. By comparing traditional picture books and digital picture books, some scholars find that E-books have many advantages, such as easy storage and simple operation [7], attracting students' attention and achieve better teaching effects because of audio and animation [8], etc. Unsworth also recognized that digital picture books can provide learners with opportunities to participate in multimodal interaction and learners' oral expression ability can be effectively improved [9].

Other research investigated on the application and effects of new technology and digital reading devices in picture book reading. Ozcelik and Acarturk investigated on the use of camera-equipped mobile phone and 2D barcode technology for complementing printed course material, which had been found the potential to enhance learning [10]. Choi, Kang and Sheo's study pointed out children's interest in learning English was higher when they used digital pens in picture book reading [11]. Focusing on Augmented reality (AR) technology, studies noted that AR picture books can not only increase children's reading interests and their story comprehension performance, but also help to deepen memory and improve learning efficiency [12].

Generally speaking, Internet and digital revolution have an impact on the way of picture book reading and help learners read English picture books more conveniently and learn English more efficiently.

3 Method

3.1 Research design and procedure

The research is a quasi-experimental design, using pre-test and post-test to assess children's reading comprehension ability before and after the project, followed by a questionnaire to collect information about children's reading interests, habits, strategies, emotions and their attitudes towards the project.

At the beginning, all participants took a pre-test. Then, they started the online picture book reading project, which was conducted on the platform of WeChat mini program "Xiaodaka". During the project, every day except Sunday, researchers released daily tasks and picture-book reading materials, including digital picture books, audio recordings, reading-guide videos made by researchers. After watching the video, children read the picture book by themselves, practiced to read aloud and uploaded their reading-aloud recording. Two researchers (both post-graduates majored in English teaching) would comment on their pronunciation, intonation, rhythm and give some suggestions. Children read and practiced an English picture book for two days, so that they could have a better understanding of the content and improve their pronunciation. After a period of time, there were review tasks to help children consolidate what they had learned and then new books were started. The whole project lasted for 18 weeks and totally 46 English picture books were read by participants. After the project, a post-test and a questionnaire were carried out for each participant.

3.2 Participants

12 children (6 boys, 6 girls) aged 7-11 participated in the current study. Most of them were at Grade 4 of a public primary school in Hangzhou, China. Their first language is Chinese and they all are beginners in English learning.

3.3 Materials

The English picture books used for the reading project were chosen from *Oxford Reading Tree* (ORT) series published by Oxford University Press. The ORT scheme has widespread usage across primary schools in the UK and international schools worldwide. The ORT books are appropriate for the participants because there are simple language and colorful illustration patterns that are easier for young children to read. Considering the participants are English beginners, the reading project started from Level-1 books of ORT and then moved to Level-2 books. Totally, children read 46 ORT picture books, 31 Level-1 books and 15 Level-2 books.

In addition to providing electronic picture books and audio recordings, researchers made reading-guide videos for each book. In the video, we guided children to read the book page by page, such as translating difficult sentences into Chinese, encouraging them to predict the storyline according to the cover and guess the meaning of a new word by observing the picture, introducing grammatical points like past tense, plural forms, etc., and explaining cultural differences between the east and the west. At the end of the video, a question was asked to check children's understanding of the story.

3.4 Instruments

3.4.1 Pre-test and Post-test

The two tests were designed according to the reading section of Cambridge Young Learners' English Tests produced by Cambridge Assessment English. Considering that our participants are English beginners, Pre A1 Starters Level test is appropriate for them, which is composed of colorful pictures and simple texts. The pre-test and post-test are to figure out whether participants have made progress in reading comprehension after the picture book reading project.

3.4.2 Questionnaire

The questionnaire of this study was adapted from Hu's survey and mainly used to investigate children's reading situation during the project and their attitudes towards the project [13]. It consists of 15 statements in five dimensions: reading interests (3 statements); reading habits (3); reading strategies (3); reading emotions (3) and personal attitudes (3). A 5-point Likert-scale ranging from strongly agree to strongly disagree was employed for children to rate how strongly they agree with each statement.

4 Results and discussion

4.1 Analysis of test results

The pre-test and post-test scores and their changes are shown in Table 4.1 below. A total of 7 children have improved after participating in the program. Through the data, we can see that most children make progress in reading literacy. Besides, among the top five children with the biggest improvement in grades, three of them score around 80 in the pre-test, and their usual English scores were above average. It can be concluded that the project is more helpful to the improvement of English reading literacy of students with above-average scores.

Through analyzing the average scores, the average score on the pre-test is 84.3, the average score on the post-test is 88.6, and the average score change is 4.25, indicating that participants make moderate progress in reading comprehension after the picture book reading project, which is the answer to RQ1.

From Table 4.2, by analyzing the standard deviation of the pre-test and post-test scores, the standard deviation of the post-test scores is larger, and the dispersion of the post-test scores increases, which shows that the children who participated in the reading program and completed the test seriously improve their scores moderately. And some children's reading literacy has not been improved, or even decreased, which may be caused by careless and unstable test performances.

4.2 Analysis of questionnaire results

The questionnaire is distributed to get information about participants' reading interests, habits, strategies, emotions during the online picture book reading project and their personal attitudes towards this project. To each statement, item 5 to 1 ranges from strongly agree to strongly disagree.

Table 4.1 Results of reading literacy pre-test and post-test scores

No.	Pre-test	Post-test	Score changes	No.	Pre-test	Post-test	Score changes
1	59	75	16	7	81	92	11
2	80	98	18	8	88	95	7
3	95	93	-2	9	95	100	5
4	77	74	-3	10	75	61	-14
5	92	100	8	11	95	90	-5
6	90	85	-5	12	85	100	15
average score of pre-test	84.3		average score of pre-test	88.6		average score change	4.25

Table 4.2 Descriptive statistics

	N	Mean	Std. Deviation	Variance
Pre-test scores	12	84.33	10.697	114.424
Post-test scores	12	88.58	12.522	156.811

Table 4.3 shows participants' reading interests in picture books. Compared with other books filled with words, over 90% of participants like reading picture books very much and nearly 83% think pictures can help them to understand the story. This result reflects the advantages of picture book: attracting children's attention and stimulate their reading interests. Besides, all children are in favor of the online picture book reading projection to a

certain degree. It is obvious that these participants are interested in reading English picture books and like the way of online reading.

Table 4.3 Results of reading interests

	5	4	3	2	1
1: You prefer reading English picture books to plain text books.	11 91.7%	1 8.3%	0 0%	0 0%	0 0%
2: You think the pictures in picture books are very interesting and can make you better understand the story.	10 83.3%	2 16.7%	0 0%	0 0%	0 0%
3: Compared with traditional English picture book reading, you prefer online picture book reading project.	7 58.3%	5 41.7%	0 0%	0 0%	0 0%

Table 4.4 Results of reading habits

	5	4	3	2	1
4: After learning a story, you are impressed by the story and like to share it with your friends or family.	7 58.3%	1 8.3%	4 33.3%	0 0%	0 0%
5: You like to read aloud or perform some interesting and impressive stories.	6 50%	3 25%	3 25%	0 0%	0 0%
6: When you get an English picture book, you will read the pictures first.	7 58.3%	3 25%	1 8.3%	0 0%	1 8.3%

From Table 4.4, we can see that 58.3% of the participants strongly agree with that they like to share impressed stories with others, while one third maintain a neutral stance. Most of participants like to read aloud or to perform some picture book stories. As for the habit of reading order, children’s responses are various. Over 80% prefer to read pictures first. One kid, however, dislikes to put pictures at the top of the reading order list. In all, most of them develop good reading habits.

Table 4.5 Results of reading strategies

	5	4	3	2	1
7: You think it is easier to understand the story and remember the content of the story by looking at the pictures.	9 75%	3 25%	0 0%	0 0%	0 0%
8: You can roughly guess the general plot of the story through pictures and context.	8 66.7%	3 25%	1 8.3%	0 0%	0 0%
9: You can guess the meaning of the unknown words according to the picture or the general content.	8 66.7%	4 33.3%	0 0%	0 0%	0 0%

Table 4.5 presents the strategies adopted by the children when reading English picture books. It turns out that almost all agree with these three statements. The participants think they can not only understand and remember the story easily with the help of pictures, but also guess the storyline and the meaning of new words through pictures and context. The results are consistent with previous studies that found reading picture books can help English learners to figure out the meanings of the new words and facilitate reading comprehension [14].

Table 4.6 Results of reading emotions

	5	4	3	2	1
10: You can understand the mood of the characters in the book by reading the picture book with emotion.	8 66.7%	4 33.3%	0 0%	0 0%	0 0%
11: You are often moved by the stories in English picture books and like them very much.	7 58.3%	4 33.3%	0 0%	1 8.3%	0 0%
12: After the project, you prefer to read English picture books and are willing to continue.	7 58.3%	5 41.7%	0 0%	0 0%	0 0%

The above three statements are about children’s emotion when reading picture books. As we can see from Table 4.6, over half can well comprehend characters’ feelings, like the stories very much, and have strong willingness to continue English picture book reading. Others, except one child showing disagreement on statement 11, also agree with that they have empathy for the stories and hold positive attitudes towards picture book reading.

In answer to RQ2, as the results of questionnaire shows, during the project, participants are interested in reading English picture books and most of them develop good reading habits, reading strategies, and reading emotions.

Table 4.7 presents the participants’ opinions about the online picture book reading project, showing most of them are approval of the online project because it is very convenient to use mobile phones to read English picture books. Moreover, all participants agree with that interesting reading-guide videos can help them to learn stories and know some knowledge about English language as well as the western culture. And 83.3% think teachers’ comments are of great help to improve their pronunciation and intonation. In answer to RQ3, as the results of questionnaire show, the participants have a positive attitude towards the project and they are willing to continue.

Table 4.7 Results of personal opinions

	5	4	3	2	1
13: Online reading project can be conducted anytime, anywhere with a mobile phone, and it is very easy and convenient to adhere to.	9 75%	2 16.7%	1 8.3%	0 0%	0 0%
14: The reading-guide video is and interesting and can lead you to acquire new knowledge and learn new stories.	12 100%	0 0%	0 0%	0 0%	0 0%
15: Teacher’s comments can help you correct the pronunciation of many words and improve your oral English ability.	10 83.3%	1 8.3%	1 8.3%	0 0%	0 0%

5 Conclusions

The online picture book reading project provides students with digital picture books, audio recordings, reading-guide videos and lead students to read them, so that students can read picture books anytime and anywhere, which is convenient and helpful in English learning. The current study investigates the effects of the online project on promoting primary school students’ reading literacy. The findings shows that the online reading project can promote pupils’ reading comprehension ability, stimulate reading interests and emotions, cultivate reading habits and strategies. Meanwhile, the value of the project is highly recognized by participants. In the future, teachers and parents can also combine English picture book reading with new technology and Internet resources to build a multimodal learning environment for children’s reading literacy development.

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