The "*Baca Mandiri*" Application Overcomes the Difficulty of Reading Beginning Post-Online Learning

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ARTICLE INFO

ABSTRAK

Pemberlakuan pembelajaran daring di masa pandemi membuat siswa tidak mendapatkan pembelajaran membaca permulaan yang intensif di sekolah. Hal tersebut akhirnya berakibat pada sulitnya kelas II dalam membaca permulaan. Fokus penelitian ini adalah untuk menganalisis pengaruh penggunaan aplikasi Baca Mandiri terhadap kemampuan membaca permulaan siswa. Penelitian ini menggunakan metode pre-eksperimental dengan model One Group Pretest-Posttest Design dengan sampel penelitian berjumlah 13 siswa dari populasi dua kelas sebanyak 55 siswa yang bermasalah pada ketuntasan membaca permulaan. Pengumpulan data dilakukan dengan pretest dan posttest untuk mengukur kemampuan membaca permulaan siswa. Selain itu, instrumen kuesioner digunakan untuk menggali tanggapan responden, yaitu siswa dan guru terkait penggunaan aplikasi Baca Mandiri pada pembelajaran membaca permulaan. Pengujian hipotesis dilakukan dengan menggunakan statistik nonparametrik, yaitu Uji Wilcoxon. Hasil pretest dan posttest menunjukkan adanya peningkatan dengan nilai rata-rata pretest sebesar 56,29. Setelah siswa diberikan perlakuan menggunakan aplikasi Baca Mandiri, nilai rata-rata posttest siswa meningkat menjadi 72,90. Kesimpulan penelitian ini adalah penggunaan media aplikasi Baca Mandiri memberikan pengaruh yang signifikan terhadap kemampuan membaca permulaan siswa. Hasil penelitian ini menguatkan saran penggunaan aplikasi elektronik dalam pembelajaran khususnya membaca permulaan di kelas rendah. Penggunaan aplikasi bahkan berpotensi digunakan siswa secara mandiri di masa depan.

ABSTRACT

Implementing online learning during the pandemic prevented students from receiving intensive early reading lessons at school. This ultimately resulted in the difficulty of class II in reading the beginning. The focus of this study was to analyze the effect of using the *Baca Mandiri* application on students' initial reading ability. This study used a pre-experimental method with the One Group Pretest-Posttest Design model with a sample of 13 students from a two-class population of 55 students who had problems with initial reading mastery. Data was collected by pretest and post-test to measure students' initial reading ability. In addition, the questionnaire instrument was used to explore respondents' responses, namely students and teachers, regarding using the *Baca Mandiri* application in early reading learning. Hypothesis testing is carried out using nonparametric statistics, namely the Wilcoxon Test. The pretest and post-test results increased, with an average pretest score of 56.29. After students were given treatment using the *Baca Mandiri* application, the average post-test score of students increased to 72.90. This study concludes that the use of *Baca Mandiri* application media significantly affects students' beginning reading abilities. The results of this study reinforce suggestions for using electronic applications in learning, especially in beginning reading in the lower grades. The use of application has the potential to be used by students independently in the future.

1. INTRODUCTION

Reading is one of the language skills that students must master. Reading activities become part of written communication by changing language sound symbols into written symbols or letters (Aulia et al., 2019; Harianto, 2020). Reading is a unique and essential ability in everyday life, especially for elementary school students who require adequate literacy skills (Chandra et al., 2021; Rombot et al.,

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2021). Students with poor reading skills will experience problems in understanding learning resources. It is because reading is an attempt to find meaning in writing (Nurlianharkah et al., 2022; Pratiwi et al., 2021). Reading activities are carried out by exploring the various meanings in writing so that readers can understand the contents of the reading (Herlina, 2019; Saputro et al., 2021). Through reading activities, a person can improve self-quality and broaden their horizons (Rahmah & Amaliya, 2022; Ramadanti & Arifin, 2021; Ritonga & Rambe, 2022). In the process of learning initial reading skills, it is very important to develop in students, especially low-grade students, this is because initial reading skills can become the foundation or basis for determining success in student teaching and learning activities (Aulia et al., 2019; Patissera et al., 2019). Development of initial reading skills is generally carried out with the aim that students can understand and voice writing with reasonable intonation as a basis for further reading (Esra et al., 2021; Muzdalifah & Subrata, 2022). Students with good initial reading skills will tend to understand the material presented by the teacher more easily and will more easily master advanced reading skills.

It's just that the reality on the ground shows that after the outbreak of the Covid-19 pandemic virus, students experienced a decrease in their reading ability. It is indicated by the achievement gap in the ability to read, write, and count post-pandemic elementary school students (Poletti, 2020). During the Covid-19 pandemic, 60% of Indonesian students could still not read fluently at the second-grade level (Chandra et al., 2021; Singh & Meena, 2022). This case shows an intervention in implementing education during the COVID-19 pandemic (Andhini & Sakti, 2021). This intervention occurs when students cannot effectively learn in class resulting in learning failure (learning loss) (Angrist et al., 2021; Bao et al., 2020). The observations made in one of the primary schools in Sumedang Regency also show similar problems, namely where various problems in the early reading abilities of post-pandemic students arise. Learning to read at the beginning was more difficult than in previous years. Respondents said that online learning that took place when students were in first grade prevented students from getting intensive early reading lessons. As a result, when students move up to second grade, students still need to achieve initial reading mastery or have sufficient initial reading skills. Most students can identify letters but need to improve spelling words and sentences. If left continuously, this problem will certainly impact decreasing student learning outcomes (Montano, 2021; Raspin et al., 2019).

One effort that can be made to overcome this problem is to implement Android-based media to hone students' reading skills. Through the Android application, many students' reading skills can be trained, such as pronouncing letters, remembering letter shapes, and spelling syllables to words (Kharisma & Arvianto, 2019; Rahayu et al., 2022). The implementation of Android-based applications can effectively improve students' beginning reading skills. It is because Android-based applications can contain a variety of interesting readings accompanied by pictures (Fauziah & Hidayat, 2022; Rakimahwati et al., 2022). One application that can be developed is an *Baca Mandiri* application that facilitates early reading learning through technological devices. The *Baca Mandiri* application provides various features that can facilitate students in recognizing letters and spelling, such as picture and sound features. The application can be operated through a device to be accessed through various devices.

Several previous studies revealed that implementing applications such as Come Learn to Read and Marbel Reading in elementary schools showed that students' reading skills increased by 37.33% after implementing the Ayo Learn to Read the application and 30.17% for the Marbel Reading application (Fauziah & Hidayat, 2022). In addition, the use of the ProVoc application also showed an increase in reading ability after the intervention (Potocki et al., 2021). Applying *Baca Mandiri* applications can improve students' initial reading skills (Rubtsova et al., 2022; Uiphanit et al., 2020). Based on some of the results of these studies, reading applications can help improve students' reading skills. It's just that in previous studies, no studies specifically discussed using Android applications for learning to read beginning after online learning. So this study focused on this study to analyze the effect of using the *Baca Mandiri* application on students' initial reading abilities.

2. METHOD

This research belongs to the type of pre-experimental research with the One Group Pretest-Posttest Design. A quantitative-descriptive approach is used to process research data that produces research data in the form of numbers. The research sample consisted of 13 students from the second grade with the criterion of needing to finish reading the beginning. The sample was taken from 2 classes with a total of 55 students. Data collection was carried out by conducting tests and questionnaires. The questionnaire was used to explore respondents' responses, in this case, teachers and students, on using the *Baca Mandiri* application in early reading learning. Meanwhile, the pretest and post-test were conducted to measure the increase in students' initial reading ability. After the pretest, students were given treatment for four meetings using the Mandiri Baca application media. The pretest and post-test

data were then processed using nonparametric statistical techniques with the Wilcoxon test. Testing is carried out by utilizing SPSS 16 For Windows, which will produce a sig value. (2-tailed) to determine whether the hypothesis is accepted or rejected and the descriptive statistical data in the form of the mean. The research instrument grids can be seen in Table 1, Table 2, and Table 3.

Table 1. Test Instrument

	Aspect	Indicator	Total Score
1.	Spell Accuracy	Mention all the words in the reading of the letter b	6
		Mention all the words in the reading of the letter h	8
		Mention all the words in the reading of the letter k	8
		Mention all the words in the reading of the letter l	7
		Mention all the words in the reading of the letter s	8
		Mention all the words in the reading of the letter r	7
	Total		**44**

Table 2. Questionnaire for Students

No.	Aspect	Item Number	Total Item
1.	Usefulness	1,2,3	3
2.	Ease	4,5,6	3
3.	Clarity	7,8,9,10,11	5
4.	Pleasure	12,13,14	3
	Total		**14**

Table 3. Questionnaire for Teachers

No.	Aspect	Item Number	Total Item
1.	Usefulness	1,2,3,4	4
2.	Ease	5,6,7	3
3.	Clarity	8,9,10,11,12	5
4.	Pleasure	13,14,15	2
5.	Compatibility with the Curriculum	16,17	2
	Total		**16**

3. RESULTS AND DISCUSSION

Results

Based on field data collection, two types of tests were obtained: pretest and post-test. Pretest is the initial value of students before being given treatment. Conversely, the post-test is obtained after using the *Baca Mandiri* application. By comparing the pretest and post-test scores, it will be known whether there is an increase in students' initial reading ability. The data is processed using the Wilcoxon Test using SPSS 16 For Windows. The results of the calculation of the Wilcoxon Test can be seen in Table 4.

Table 4. Wilcoxon Test

	N	Mean	Std. Deviation	Minimum	Maximum
Pretest	13	56.29	31.833	9	93
Posttest	13	72.90	20.548	34	100

The quantitative-descriptive approach is used in processing research data. That way, data processing considers descriptive statistical calculations. Based on the data in Table 4, it can be seen that the lowest score in the pretest is 9, and the highest score is 93. There is a difference of 84 between the lowest and highest scores from these two values. In the post-test score, the lowest score is 34, with the highest score being 100. So the difference between the lowest and highest score is 66. Then if seen from the average class score, there is a difference of 16.61 in the pretest and post-test average values, respectively 56.29 and 72.90.

Based on data processing using the Wilcoxon Test, the Sig. (2-tailed) of 0.009 and a Z value of -2.625. It can be interpreted that the value of $p = 0.009$ is smaller than the value of $\alpha = 0.05$. Thus, it can be concluded that H0 is rejected and H1 is accepted, which means that the use of *Baca Mandiri* application

media significantly influences students' initial reading ability. Further, the results of filling out the questionnaire by students can be seen in Table 5.

Table 5. Questionnaire for Students

Aspect	Questions	Agree	Percentage
Usefulness	The *Baca Mandiri* application is useful in learning to read at the beginning	13	100%
	The *Baca Mandiri* Application can help me learn to read at the beginning	13	100%
	The *Baca Mandiri* App can improve my beginning reading skills	13	100%
Ease	The *Baca Mandiri* app is easy to use	12	92%
	I can easily spell vocabulary using the *Baca Mandiri* app	13	100%
	I can use the *Baca Mandiri* application without the help of a teacher	11	84%
Clarity	I can see the letters in the *Baca Mandiri* app clearly	13	100%
	I can see the image on the *Baca Mandiri* app clearly	13	100%
	I can hear the sound on the *Baca Mandiri* app clearly	10	76%
	The instructions in the *Baca Mandiri* app are clear	13	100%
	I can follow all the instructions easily	13	100%
Pleasure	I enjoy using the *Baca Mandiri* app	11	84%
	The *Baca Mandiri* application makes me happy to learn to read the beginning	13	100%
	I want to try it again at home	13	100%

In addition to knowing the effect of using the Mandiri Baca media application, this study also used a questionnaire to explore responses from students and teachers on the use of Android-based media in early reading learning. The student questionnaire contains 14 questions that explore students' opinions about the *Baca Mandiri* application media. Regarding usefulness, all students agree that the *Baca Mandiri* application has a role in facilitating students' learning and improving their initial reading skills. It can be seen from 100% of students who choose Agree. Furthermore, on the convenience aspect, 92% of students felt that the *Baca Mandiri* application was easy to use.

Meanwhile, 84% of students thought they could operate the *Baca Mandiri* application without the help of a teacher. In general, the ease of the Mandiri Baca application is quite good if low-grade students use it. Then in terms of clarity, three students felt that the voice feature in the *Baca Mandiri* application could not be heard properly. It is inversely proportional to 76% of students who think they can hear sound features well. It is very good with other features, such as pictures, letters, and instructions on the *Baca Mandiri* application. While in the aspect of fun, 84% of students enjoyed using the *Baca Mandiri* application in learning to read in the beginning. That way, students can be said to be very enthusiastic about using the *Baca Mandiri* application in learning. Besides being given to students, questionnaires were also given to teachers. The results of filling out the questionnaire by the teacher can be seen in Table 6.

Table 6. Questionnaire for Teachers

Aspect	Questions	Agree	Percentage
Usefulness	The *Baca Mandiri* Application is useful in overcoming the difficulty of beginning reading in second graders.	2	100%
	The *Baca Mandiri* application makes it easy for you to teach beginning reading	2	100%
	The *Baca Mandiri* Application can increase student independence in learning to read at the beginning	2	100%
	You will recommend the *Baca Mandiri* application to other fellow teachers.	2	100%
Ease	The *Baca Mandiri* application can be accessed easily.	2	100%
	The *Baca Mandiri* application can be operated easily.	2	100%
	The *Baca Mandiri* application can be easily installed on Android devices.	2	100%
Clarity	You can see the letters on the *Baca Mandiri* app clearly	2	100%
	You can see the pictures on the *Baca Mandiri* app clearly	2	100%

Aspect	Questions	Agree	Percentage
	You can hear the sound on the *Baca Mandiri* app clearly	2	100%
	The instructions in the *Baca Mandiri* app are clear	2	100%
	You can understand and follow all the instructions easily	2	100%
Pleasure	You enjoy using the *Baca Mandiri* app	2	100%
	The *Baca Mandiri* application gets you excited about teaching beginning reading	2	100%
Compatibility with the Curriculum	The *Baca Mandiri* application is by the applicable curriculum	2	100%
	Baca Mandiri Application according to the stage of development of children in grade two	2	100%

Questionnaires addressed to teachers are slightly different from student questionnaires. This questionnaire aims to determine the teacher's response regarding using the *Baca Mandiri* application in learning to read the beginning. Respondents in this questionnaire are two teachers who teach in grade two. The questionnaire results showed that all aspects were considered very good, including usefulness, convenience, clarity, and fun. Likewise, with the suitability of the curriculum, the teacher believes that the material in the *Baca Mandiri* application is to the applicable curriculum and also the stage of development of children in grade two. The *Baca Mandiri* application received a positive response from both students and teachers.

Discussion

Based on the analysis that has been carried out, the result is that *Baca Mandiri* Applications can provide a substantial influence in overcoming the early reading struggles of second-grade students. Game-based learning leads to refreshing the learning process (Astiningsih & Partana, 2020; Greipl et al., 2021; Letchumanan et al., 2021; Pham & Lai, 2022). This positive influence also aligns with the positive response shown by students and teachers towards using the *Baca Mandiri* application in early reading learning (Nurlianharkah et al., 2022; Pratiwi et al., 2021). Learning using the *Baca Mandiri* application for four meetings shows four sections in the *Baca Mandiri* application which are adapted to children's development, including beginners, toddlers, children, and advanced. Each meeting is focused on one section starting from the beginner section. In the first meeting, learning was focused on vowels and consonants. Most students can already know and remember vowel letters, such as a, i, u, e, and o. In addition to vowels, learning is emphasized on several letters, such as d, n, t, p, and m. These letters are suitable to be taught early in learning to read the beginning, which can then be associated with vowels so that they can form syllables.

At subsequent meetings, learning was refocused according to the sections contained in the *Baca Mandiri* application. Students' independence in learning to read at the beginning is increasingly visible. Students begin to operate the application individually without being asked by the teacher. It has been previously described in several studies showing that Android applications give freedom to students to control learning independently (Sari et al., 2019; Yati et al., 2022). Student interest in interacting with the *Baca Mandiri* application is also one of the motivations for learning to read at the beginning. Previously, early reading learning only used conventional media, such as reading cards, reading books, and so on. Therefore, using digital media interests students (Herlina, 2019; Nugraha et al., 2022; Saputro et al., 2021). It can be seen from students' enthusiasm in trying the features contained in the *Baca Mandiri* application. Previous research explained that Android applications could increase students' motivation and interest in reading (Kuntoro & Hermanto, 2020). One of the *Baca Mandiri* features as an electronic feature is that it can give a sound response when the sentence being read is touched. This feature helps students to be able to study independently. It can also help students to recognize the sound of each letter. Several studies state that using Android applications can help low-grade students recognize the sound of letters (Mustadi et al., 2022). Research that examines online learning is very important to explore the potential of online learning in the future (Ahmed et al., 2022).

Learning with games with several features can be successful in helping students achieve learning goals (Dreyer et al., 2019). Students can be well facilitated by the features in the Mandiri Baca application while learning to read. Interesting things found in the field show that students are very enthusiastic in connecting letter shapes with objects around them, for example, associating the letter 'i' with the shape of a candle, the letter 'c' with the shape of a celurit, the letter 'n' which is connected with the shape of a magnet. The relationship between letters and pictures makes it easier for students to recognize and remember letters (Iswara, 2020; Sundari & Febriyanti, 2023). The concept of thinking in low-grade students is still concrete, so using real objects will make it easier for students to process the information they get (Ninawati et al., 2022; Suwarni et al., 2020). Likewise, with learning to read the beginning,

students will more easily remember letters or words if they are associated with the objects around them. Using previous research findings, adding pictures and music to reading material can strengthen students' understanding.

Using the *Baca Mandiri* application provides flexibility for students in learning to read beginning through new and fun media. The fun and convenience students get will increase their motivation to learn at school and home. On that basis, selecting appropriate media has an important role in improving the learning quality of elementary school students (Supriyadi et al., 2019). It will greatly improve students' initial reading skills, especially in lower grades. The results obtained in this study are in line with the results of previous research, which also revealed that implementing applications such as Come Learn to Read. Marbel Reading in elementary schools showed that students' reading skills increased by 37.33% after implementing the Learn to Read the application and 30.17% for the Marbel Reading application (Fauziah & Hidayat, 2022). In addition, the use of the "ProVoc" application also showed an increase in reading ability after the intervention (Potocki et al., 2021). Applying Baca Mandiri applications can improve students' initial reading skills (Rubtsova et al., 2022; Uiphanit et al., 2020). Based on the results of this study, reading applications can help improve students' reading skills.

4. CONCLUSION

Based on the results of the analysis that has been carried out, the *Baca Mandiri* application is considered to influence overcoming second-grade students' initial reading difficulties significantly. The teacher and student response questionnaire results, also showed positive responses from various aspects. That way, the *Baca Mandiri* application can be used by teachers to support early reading learning, especially after online learning, where learning using electronic devices has begun to be implemented. The results of this study reinforce suggestions for using electronic applications in education, especially in beginning reading in the lower grades.

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