

The Effectiveness of the Use of Aldiko Book Reader in Indonesian Language Learning for Natural Sciences

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ABSTRACT

Background. The use of technology in education is one way to improve the quality of learning. One of the applications used for learning is Aldiko Book Reader, which is expected to help students understand the learning material. This study was conducted to measure the effectiveness of the use of Aldiko Book Reader in Indonesian language learning at SMA Negeri 1 Sidrap, especially for students in grade XI Natural Sciences (IPA) 1.

Purpose. This study aims to explain the effectiveness of the use of Aldiko Book Reader in Indonesian learning for students in grade XI Science 1 SMA Negeri 1 Sidrap.

Method. This study is a quantitative research with a population of 35 students in class XI Science 1 SMA Negeri 1 Sidrap and a sample of 25 students. The data collection techniques used are documentation, tests, and questionnaires. The collected data was then processed using an effectiveness test measured based on four indicators.

Results. The results of the study show that the use of Aldiko Book Reader is effective in learning Indonesian. Of the four indicators of effectiveness, all of them qualified. First, the average score of students after using Aldiko Book Reader increased ($68.5 < 82.5$). Second, the average score of students after using the application is 82.5, which is above the KKM standard (70). Third, the average score of student gain is 54.8, which is in the high category. Fourth, the completeness of classical learning reaches 100%.

Conclusion. Based on the results of the study, it can be concluded that the use of Aldiko Book Reader is effective in improving the Indonesian learning outcomes of students in grade XI Science 1 SMA Negeri 1 Sidrap, as evidenced by the significant increase in student scores and test scores.

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INTRODUCTION

Education is a conscious effort to humanize humans. Through education, human beings are formed to have a dignified and dignified identity. In addition, education is an effort to become a human being who is beneficial to others. In the Islamic world, education is a mandatory thing for both male and female Muslims. An Arabic proverb explains that whoever wants the happiness of the world wants to master his knowledge.



Whoever wants happiness in the hereafter should master his knowledge. And whoever wants Knowledge occupies a central place in human life, both for the benefit of this world and the hereafter a long-held notion in the Islamic scholarly tradition and one of the philosophical foundations for the importance of lifelong learning. This principle aligns with Indonesia's constitutional mandate, the 1945 Constitution, which places the life of the nation as one of the goals of national development. Increasingly, the direction of national development must align with developments in the world of education.

Current educational developments are moving toward information technology (IT)-based learning. The use of technology in learning is no longer merely a complement but has become an almost absolute necessity for both teachers and students (Fadillah, Masita, & Ningsih, 2023; Adriyansa, 2024). This paradigm shift is inseparable from changing student habits, as they become increasingly familiar with Android devices in their daily lives, making information increasingly accessible and access to learning materials faster (Abidin & Sukmana, 2023). Other research also shows that the use of Android-based learning applications contributes to student learning motivation (Latifatul, Azra, & Fajar, 2023).

This situation demands that teachers adapt to the use of IT in the learning process, with the goal of increasing student motivation and expanding learning spaces not only in the classroom but also outside it, in line with the principle that every place can be a learning space and everyone can be a learning resource.

However, based on the author's initial survey, IT-based learning at State Senior High School 1 Sidrap is still minimally implemented by teachers. Manual learning processes still dominate, and most learning activities take place in the classroom using printed textbooks, despite the relatively high level of Android ownership and use among students. This gap between the high penetration of Android devices among students and their low utilization as a learning resource presents both a challenge and an opportunity for education (compare with the findings of Adriyansa (2024), regarding the development of Android-based mobile learning media in the depth below).

One example of utilizing Android devices as a learning medium is the use of digital book reader applications, such as Aldiko Book Reader an application that allows students to download and read books in PDF and DRM formats, including bold books published by the Ministry of Education and Culture, free of charge, for various levels of education. This potential aligns with findings that Android-based learning media can improve students' comprehension skills, particularly in understanding procedural texts (Kharisma, 2020).

Based on the background description above, the research problem is formulated as follows: "Is the use of Aldiko Book Reader effective in Indonesian language learning for 11th grade science students at SMA Negeri 1 Sidrap?"

LITERATURE REVIEW

Aldiko book reader

Aldiko book reader, is a form of application on Android that functions as a shelf or storage place for downloaded reading materials. This application can save and reopen reading materials, whether it is in the form of books or other readings in pdf or DRM format. The app's display is equipped with a quick search system.

Currently, the aldiko book reader application has reached the stage of refinement. There are many interesting changes in it. The changes are found in Aldiko book reader 2.0 as follows.

the user interface design is more attractive;

supported with EPUB and PDF formats;

supported adobe DRM-based;
 easy access to new and best-selling books;
Improved text typography and rendering;
 there is support for hyphenation;
 has a text selection function;
 being able to copy/paste;
 have good import function;
 has the function of knowing the reading limit;
 notification of bar function when reading;
 and so on.

Currently, the appearance of the aldiko looks more beautiful and attractive. Of course, this will increase the motivation of readers, including students, to use it as a reading medium. The following is a picture of the appearance of the aldiko book version 2.0.

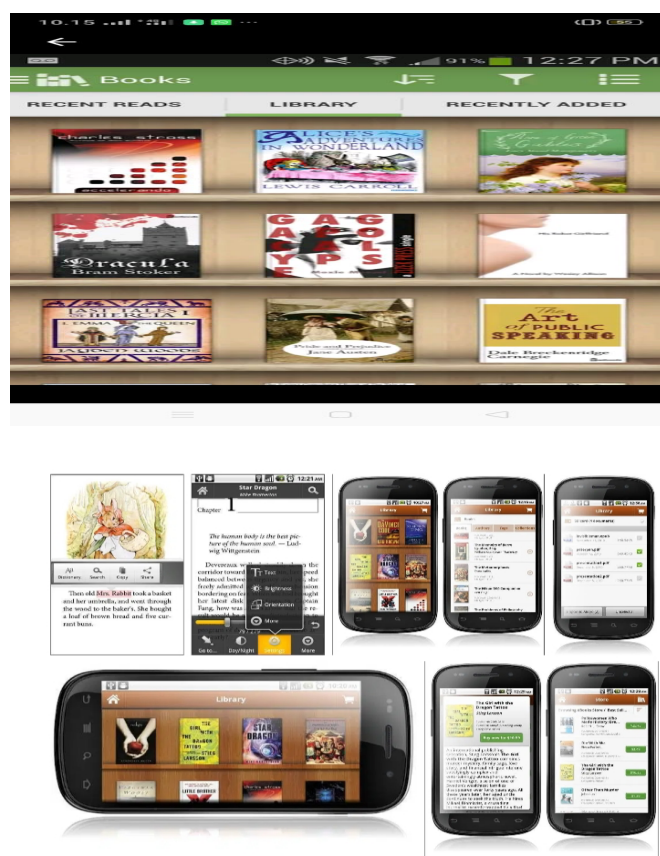


Figure 1. Display of the aldiko book reader application on android

In addition to having advantages, of course every application has its durability. The same is true for the aldiko book reader version 2.0 application. This application has several weaknesses, especially in learning, including:

Students must bring androids to school, while some school policies still prohibit students from bringing androids/cellphones. requires an adequate network because to access books into the application must be online even though reading them can be offline. If it is not dicopoled, students are worried about opening other applications. Therefore, teachers need to supervise the use of android/cellphones in the learning process. Books in this app cannot be printed/printed.

Previous research

This research is based on several previous studies. This is done so that researchers can conduct research by taking pictures from other sides that have not been researched by previous researchers.

Research conducted by Mihye Kim (2015) with the research title *Analysis of User Preferences for Management and Search Features in E-book Reader Libraries in Smartphone Environments* revealed that large booksellers and online publishers are currently devoting their energy to the growth of the e-book market, this results in an increase in the use of e-books, and an increase in the number of e-books downloaded on e-book readers. Thus, he suggested the use of this application to manage the e-book library, thus allowing readers to browse more collections easily, thereby increasing the usability of e-book readers.

The next research was carried out by Muhammad Aji (2015) who wrote about "Development of Learning Media to Understand and Maintain a Conventional Type Starter System Based on Digital Electronic Publication (epub)". The results of the research showed an increase in student competency learning outcomes after using the digital book Understanding and Maintaining the Conventional Type Starter System. This can be seen from the results of the average score before using digital books of 68.84 which increased to 79.03 and the increase in the distribution of the percentage of completeness before and after implementing learning with digital books, which was 63.72%. Thus, it was concluded that there was an increase in student learning outcomes in the competence of understanding and maintaining the starter system in the subject of automotive electrical repair after using electronic publication (epub)-based digital book learning media.

Based on these two studies, it appears that the research was carried out to find out the amount of use of e-book applications in the market system. Meanwhile, the second research was carried out to determine the effectiveness of the use of e-pub applications on automotive learning outcomes. Thus, it is known that no researcher has conducted research on the effectiveness of the use of aldiko book readers in learning, especially in Indonesian subjects.

RESEARCH METHODOLOGY

Research Variables and Design

This study has two variables, namely the independent variable (X) and the bound variable (Y).

The independent variable in this study is the use of aldiko book reader

The bound variable in this study is the Indonesian learning outcome

This study was designed with a *quasi-experimental design* approach in the form of pretest and postes before and after treatment.

For more details, the research design is described as follows.

Tabel 3. Desain Penelitian

Pretest	Perlakuan	Posttest
Y1	X	Y2

Information:

X = Treatment with aldikobook reader

Y1 = pretest before treatment

Y2 = posttest after treatment

(Sugiono, 2010)

Variable Operational Definition

In order for the research variables not to expand, each variable will be defined as follows.

The use of *aldiko book reader* referred to in this study is the use of *the aldiko book reader* application in learning Indonesian in class XI IPA-1 Negeri 1 Sidrap.

The Indonesian learning referred to in this study is the learning process and learning outcomes in the reading aspect of grade XI students of IPA-1 Negeri 1 Sidrap.

Data Collection Techniques

The data collection techniques carried out in this study are as follows.

Documentation techniques

The documentation technique in this study was used to determine the number of students in grade XI of Natural Sciences (IPA) Negeri 1 Sidrap.

Questionnaire Technique

The questionnaire technique used in this study aims to find out several things related to the use of aldiko book reader in learning Indonesian in grade XI students of Natural Sciences (IPA) Negeri 1 Sidrap.

Test technique

The test technique used in this study aims to determine the learning outcomes of students before and after the use of aldiko book reader in Indonesian learning in grade XI students of State Science 1 Sidrap.

Data Analysis Techniques

The effectiveness of learning media is a form of measurement tool that connects media/models with learning outcomes in a learning process. The effectiveness criteria in this study refer to:

the average score of learning outcomes after the use of media was higher than the average learning outcome before the implementation of *Aldiko Book Reader media*;

the average score of students' Indonesian learning outcomes is more or equal to the KKM score, which is 70;

the average normalized gain score is at least in the medium category; and classical completeness (85%).

RESULT AND DISCUSSION

The data presented below is the result of data analysis based on four achievement indicators to measure the effectiveness of the use of *the aldiko book reader* application on the Indonesian learning outcomes of students in grade XI of Natural Sciences (IPA)-1 Negeri 1 Sidrap. Average Score (R) before and after using *the aldiko book reader* application Based on the test results in the Indonesian subject, the following data were obtained:

Average Score (R) before and after using *the aldiko book reader application*

Indonesian Language Score for Class XI Natural Sciences (IPA)-1 SMA Negeri 1 Sidrap before the use of *the aldiko book reader application*.

No.	Sample Code	Value
1.	A.01	65
2.	A.02	60
3.	A.03	70
4.	A.04	70
5.	A.05	75

6.	A.06	65
7.	A.07	70
8.	A.08	70
9.	A.09	75
10.	A.10	70
11.	A.11	75
12.	A.12	70
13.	A.13	70
14.	A.14	70
15.	A.15	75
16.	A.16	65
17.	A.17	65
18.	A.18	60
19.	A.19	60
20.	A.20	70
Sum		1.370

Table 1. Student Test Results Before Using *the Aldiko Book Reader Application*

Data source: Student test results

Indonesian scores of students of Class XI Natural Sciences (IPA)-1 SMA Negeri 1 Sidrap after using *the aldiko book reader application*

The results of the Indonesian subject test for students in grade XI of Natural Sciences (IPA)-1 SMA Negeri 1 Sidrap after using *the aldiko book reader application*, can be seen in table 2 below.

Table 2. Student Test Results After Using the Aldiko Book Reader Application

No.	Sample Code	Value
1.	A.01	75
2.	A.02	75
3.	A.03	75
4.	A.04	80
5.	A.05	85
6.	A.06	75
7.	A.07	85
8.	A.08	85
9.	A.09	85
10.	A.10	90
11.	A.11	85
12.	A.12	90
13.	A.13	90
14.	A.14	75
15.	A.15	75
16.	A.16	80
17.	A.17	90
18.	A.18	90
19.	A.19	80
20.	A.20	85
Sum		1.620

Based on tables 1 and 2, they are then juxtaposed to get the difference in average values from the two tables. The results of the comparison can be seen in the following table 4.3.

Table 3 Comparison of Average Test Results of Students Before and After Using the Aldiko Book Reader Application in Indonesian Language Learning

Table 3. Data source: Processed from tables 1 and 2.

No	Information	Number of Students	Overall Score	Average value
1.	Previously	20	1.370	68,5
2.	After	20	1.650	82,5

The average score of students' Indonesian learning outcomes is more or equal to the KKM score, which is 70 after using the application;

Based on the results of the student test listed in table 2, the average score of the students is obtained as follows.

Table 4. Frequency and Grades of Students After Using the Aldiko Book Reader Application

No.	Value	Frequency	Sum
1.	65	0	0
2.	70	0	0
3.	75	6	450
4.	80	3	240
5.	85	6	510
6.	90	5	450
	Sum	20	1,650
		Average	82,5

Data source: Processed from table 4.2

Based on table 4, it can be explained that the average score obtained by students after using aldiko book reader media in Indonesian language learning is 82.5.

The average normalized gain score is at least in the medium category

The data presented below are the results of a student questionnaire related to the use of aldiko book reader in Indonesian language learning in class XI IPA-1 SMA Negeri 1 Sidrap.

Table 5. Results of Student Questionnaire

No	Statement	Scale				
		SS	S	R	TS	STS
1.	The content of the aldiko book reader is according to the learning objectives	10	5	5	0	0
2.	The Aldiko Book Reader used is easy to apply	12	5	3	0	0
3.	The Aldiko Book Reader used can understand abstract and concrete things	8	8	4	0	0
4.	Aldiko Book Reader Can Increase Learning Motivation	15	5	0	0	0
5.	The appearance of the aldiko book reader is like the real thing	10	10	0	0	0

6.	Aldiko Book Reader helps in understanding concepts correctly	15	5	0	0	0
7.	Aldiko Book Reader helps in improving concepts and reality (contextual)	10	5	5	0	0
8.	Aldiko Book Reader is used to help in carrying out learning practices correctly	15	5	0	0	0
9.	Aldiko books can arouse new desires and interests	18	2	0	0	0
	Aldiko Book Reader provides a meaningful learning experience	20	0	0	0	0
	Shoes	133	95	17	0	0

Data source: Processed from the results of the student questionnaire

Calculation results based on the table of gian values

$$SS = 133 \times 5 = 665$$

$$S = 95 \times 4 = 380$$

$$R = 17 \times 3 = 51$$

$$TS = 0$$

$$STS = 0$$

$$\text{Total Score} = 1,096$$

$$Ng = \frac{Skor}{N}$$

$$Ng = \frac{1,096}{20}$$

$$Ng = 54.8$$

Classically completeness is 85% of the KKM, which is 70

The data presented below is the classical completeness of grade XI students of IPA-1 SMA Negeri 1 Sidrap after using *an aldiko book reader* in learning Indonesian.

Table 6. Classical Completeness 85%

No.	Value	Sum	Percentage
1.	< 70	0	0
2.	> 70	20	100%
	Sum	20	100%

Data Source : Processed from table 4.4

Discussion

The findings show that the use of the Aldiko Book Reader application was associated with a substantial improvement in students' Indonesian language learning outcomes, as indicated by an increase in the average score from 68.5 before treatment to 82.5 after treatment. This improvement suggests that digital reading applications can facilitate easier access to learning materials, particularly in contexts where printed textbooks are limited. Previous studies have similarly demonstrated that digital books can improve learning accessibility, flexibility, and students' engagement with instructional materials. However, the improvement should not be interpreted merely as evidence that digital media are inherently superior to printed books, because learning outcomes also depend on instructional design, student characteristics, and how digital resources are integrated into classroom activities (Jamalia & Hasan, 2019; Luo et al., 2021; Wijaya et al., 2022).

A scientific debate emerges when these positive findings are compared with research suggesting that digital reading does not always produce better comprehension than print-based

reading. Delgado et al. (2018) found a small but significant advantage of printed texts over digital texts, particularly for informational reading and time-constrained tasks. In contrast, more recent evidence indicates that differences between digital and printed reading are highly dependent on reading conditions, text characteristics, and learner factors. Therefore, the effectiveness of Aldiko in this study may be better explained by its ability to overcome limited textbook availability and provide continuous access to reading materials rather than by the superiority of screen-based reading itself. This interpretation emphasizes that technology becomes educationally meaningful when it solves specific learning problems and is supported by appropriate pedagogical practices (Delgado et al., 2018; Li & Yan, 2024; Clinton, 2019).

The questionnaire results also demonstrate highly positive student perceptions of Aldiko Book Reader, particularly in terms of motivation, interest, conceptual understanding, ease of use, and meaningful learning experiences. Such positive perceptions may contribute to greater engagement with learning activities because students who perceive digital learning tools as useful and easy to operate are generally more willing to use them consistently. Nevertheless, positive perceptions should not automatically be interpreted as direct evidence of improved academic achievement. Students may respond positively because of the novelty of the technology or the convenience it provides, while actual learning improvement may also be influenced by teacher support, instructional activities, and increased study time. Consequently, student acceptance should be regarded as an important supporting factor rather than the sole explanation for improved learning outcomes (Davis, 1989; Luo et al., 2021; Webber et al., 2023).

Despite the increase in average scores and the achievement of 100% classical mastery above the minimum competency criterion, the claim that Aldiko Book Reader alone caused the improvement needs to be interpreted cautiously. The use of a one-group pre-test–post-test design without a control group makes it difficult to eliminate alternative explanations such as testing effects, maturation, teacher intervention, or increased familiarity with the learning materials. Moreover, the normalized gain derived from the reported mean scores is approximately 0.44, indicating a moderate rather than high improvement according to the commonly used gain classification. Therefore, the strongest scientific conclusion is that Aldiko Book Reader showed promising effectiveness and was strongly associated with improved Indonesian language learning outcomes, while further controlled experimental studies are required to establish stronger causal evidence and broader generalizability (Hake, 1998; Shadish et al., 2002; Creswell & Creswell, 2018)..

CONCLUSION

Based on the results of the research carried out, it can be concluded that the use of *the Aldiko Book Reader* application is effective in learning Indonesian in class XI of Natural Sciences (IPA)-1 SMA Negeri 1 Sidrap. This is based on the results of data analysis which shows that of the four indicators of effectiveness, all of them are eligible, namely: (1) the average score of students after using *Aldiko Book Reader* is higher than the score before using the application ($68.5 < 82.5$); (2) The average score of students after using *Aldiko Book Reader* is 82.5 which means above the KKM standard of 70; (3) The average gain score is 54.8, which means it is in the high category; (4) Classically completeness is 100%.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

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