

## Digital Literacy and Web-Based Learning in History Education: The Use of BookWidgets to Enhance Students Learning Outcomes

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### Abstract:

The low learning outcomes of students in History subjects havencouraged the implementation of innovative learning media, one of which is BookWidgets. This study aimed to analyze the effect of using BookWidgets as a learning medium on students' learning outcomes in History at MAN 3 Banda Aceh. The study employed a pre-experimental method with a one-group pre-test post-test design. The sample consisted of 36 students from class X-5 selected through simple random sampling. Data were collected through observation, documentation, and tests, and analyzed using normality, homogeneity, and t-tests. The results showed that the implementation of BookWidgets achieved a score of 92%, which was categorized as very good. The mean score of students' learning outcomes increased from 69.29 to 85.24. Hypothesis testing revealed that t-value is greater then critical t-value ( $8.598 > 2.064$ ) at a 5% significance level, indicating a significant effect. Therefore, web-based BookWidgets significantly improved students' learning outcomes in History.

**Keywords:** Bookwidgets, Learning Outcomes, History learning

### Introduction

Education is one of the important aspects in efforts to improve the quality of human resources. Through education, students not only gain knowledge, but also develop the skills, attitudes, and thinking abilities needed in life. The success

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of the educational process can be seen from the learning outcomes achieved by students after participating in learning activities. Learning outcomes are the abilities that students have after receiving learning experiences and are indicators of the success of a learning process (Sudjana in Purwaningsih, 2022). Learning outcomes are influenced by various factors, both internal and external factors. Internal factors include students' interests, motivation, health, intelligence, and learning styles, while external factors include the family, school, community, and surrounding environment that supports the learning process (Dalyono, 2009). Therefore, teachers as learning facilitators need to design a learning process that is able to encourage active involvement of students so that learning goals can be achieved optimally.

In history learning, students are often faced with material that is conceptual and contains a lot of information, so learning media is needed that can help students understand the material in a more interesting and interactive way. The use of digital technology in learning is one of the alternatives that can be used to improve the quality of the teaching and learning process. The use of technology-based learning media allows students to obtain a more varied, interactive, and student-centered learning experience. One of the web-based learning media that can be used is *BookWidgets*. *BookWidgets* is a digital platform that provides various interactive learning features such as quizzes, *electronic worksheets*, educational games, interactive videos, and various other forms of learning evaluation. The use of this kind of interactive media can help students actively engage in the learning process so that it has the potential to improve their understanding and learning outcomes (Gayatri & Hafniati, 2024).

Based on the results of the initial observation conducted on October 27, 2025 at MAN 3 Banda Aceh City, information was obtained that students' history learning outcomes were still relatively low. The score data showed that of the 36 students, as many as 21 students (58.33%) had not reached the Minimum Completeness Criteria (KKM), while only 15 students (41.67%) had reached the KKM. This condition shows that most students still have difficulty in understanding history material so efforts are needed to improve their learning outcomes.

Several previous studies have shown that the use of *BookWidgets* has a positive impact on learning processes and outcomes. Research by Gayatri and Hafniati (2024) shows that *BookWidgets* learning media has an excellent level of feasibility for use in learning. Hesti et al. (2023) found that the application of *BookWidgets* is able to improve students' biology learning outcomes which is

characterized by an increase in average grades and learning completeness. Olivun et al.'s research (2021) also proves that *BookWidgets* can increase students' learning interest in learning English. In addition, Ridho et al. (2025) stated that *BookWidgets*-based learning media is very feasible to use in learning, while Ratnasari et al. (2025) found that the use of *BookWidgets* is effective in improving student learning outcomes.

However, research on the use of *BookWidgets* in history subjects, especially at the madrasah aliyah level, is still relatively limited. Most of the previous research focused on language, biology, and learning media development. Therefore, this study was conducted to analyze the application of web-based *BookWidgets* learning media in Class X History subjects and test its influence on the history learning outcomes of class X students of MAN 3 Banda Aceh City.

## Method

This study uses a quantitative approach with an experimental method. The research design used is *One Group Pretest-Posttest Design* which is included in the *Pre-Experimental Design*. In this design, measurements are carried out twice, namely before treatment (*pretest*) and after treatment (*posttest*). This design is used to determine the effect of the use of web-based *BookWidgets* learning media on students' history learning outcomes (Sugiyono, 2022).

The research was carried out at MAN 3 Banda Aceh City. The population in this study is all students of class X of MAN 3 Banda Aceh City which totals 200 students and is spread across six classes. The research sample was selected using *a probability sampling* technique with *a simple random sampling* type, which is a sampling technique that provides the same opportunity for each member of the population to be selected as a research sample (Sugiyono, 2022). Based on the results of the draw, class X-5 was selected as the research sample.

The research instrument consists of observation sheets, learning outcome tests, and documentation. Observation sheets are used to observe student activities during the learning process using web-based *BookWidgets* media. Observation assessment uses *a rating scale* with a score range of 1–5 which is then analyzed in the form of percentages (Hardani et al., 2022). Learning outcome tests are given in the form of *pretest* and *posttest* in the form of 15 multiple-choice questions to measure students' mastery of the historical material studied. Documentation is used to obtain supporting data related to the implementation of research (Abubakar, 2021).

**Table 1.** Observation Percentage Criteria

| Percentage Score | Criteria  |
|------------------|-----------|
| 81% - 100%       | Excellent |
| 61% - 80%        | Good      |
| 41% - 60%        | Enough    |
| 21% - 40%        | Not Good  |
| 0% - 20%         | Very Bad  |

Source: (Jasmalinda, 2021:2635).

The research procedure begins with the provision of a *pretest* to determine the initial ability of students. Furthermore, students participate in history learning using web-based BookWidgets media. After the entire learning series is completed, students are given a *posttest* to find out the learning results after receiving treatment. The data from the *pretest* and *posttest results* are then analyzed to determine the influence of the use of BookWidgets learning media on student learning outcomes. Data analysis was carried out with the help of the SPSS version 26 program. The observation data was analyzed using a percentage technique to determine the level of learning implementation

The learning outcome data was analyzed through a normality test using the Shapiro-Wilk test because the sample size was less than 50 respondents (Razali and Wah 2011, in Quraisy, 2020:9). Furthermore, a homogeneity test was carried out as a prerequisite test and hypothesis testing using the *Paired Sample t-Test* at a significance level of 0.05 to determine the effect of the use of web-based BookWidgets learning media on students' history learning outcomes (Sugiyono, 2022).

## Research Results

### Application of Web-Based BookWidgets Learning Media in History Subjects

The results of the observation showed that the application of *web-based BookWidgets* learning media in history learning obtained a percentage of 92% of implementation, which was included in the very good category. These results showed that all stages of learning designed through the *Problem Based Learning* (PBL) model could be carried out well. Students were able to take part in learning activities ranging from accessing materials, working on *electronic worksheets* (E-LKPD), discussing in groups, to completing learning evaluations through the features available on *BookWidgets*. The high percentage of learning

implementation shows that *BookWidgets* media can be used effectively in supporting the history learning process. During the learning activities, students are seen actively participating in every stage of learning, both when understanding the material, doing group assignments, and when completing learning evaluations. The use of the interactive features available in *BookWidgets* makes it easy for students to access learning materials and activities in an integrated manner in one platform.

In addition, the use of *BookWidgets* combined with the *Problem Based Learning* (PBL) model provides opportunities for students to be actively involved in the learning process. Students not only receive information from teachers, but are also required to seek information, discuss, express opinions, and solve the problems given. This condition makes the learning process more *student-centered learning* so as to encourage their involvement during learning activities.

The results of this study are in line with the research of Gayatri and Hafniati (2024) who showed that *BookWidgets* learning media has a very good level of feasibility to be used in the learning process. This finding is also supported by the research of Ridho et al. (2025) who stated that *BookWidgets*-based learning media is able to support student involvement through the presentation of interactive learning materials, exercises, and activities. Thus, the results of this study reinforce the previous finding that *BookWidgets* is one of the web-based learning media that can be applied effectively in various subjects, including history learning.

### **Learning Outcomes before and after the use of *BookWidgets* learning media**

Student learning outcomes before the use of *web-based BookWidgets* learning media were obtained from test scores on *the Theories of the Entry of Islam in Indonesia*. The results of the analysis showed that only 5 students (17.86%) had reached the Minimum Completeness Criteria (KKM), while 23 students (82.14%) had not reached the KKM. The total score obtained by students was 1,939 with an average of 69.29 which was included in the sufficient category (Basam, 2022:102). These results show that in general, students' learning outcomes before treatment are still relatively low. The low level of learning completeness indicates that most students have not been able to master the learning materials optimally in accordance with the standards set by the school.

**Table 2.** Number of Student Learning Outcomes

| Data    | Before | After |
|---------|--------|-------|
| Average | 69,29  | 85,24 |

|                       |        |        |
|-----------------------|--------|--------|
| Conclusion            | 5      | 22     |
| Incomplete            | 23     | 6      |
| Completion Percentage | 17,86% | 78,57% |

Source: Primary Data Processing

After the implementation of *web-based BookWidgets* learning media with *the Problem Based Learning* (PBL) model, student learning outcomes have increased. Based on the results of *the posttest*, as many as 22 students (78.57%) have reached the KKM and 6 students (21.43%) have not reached the KKM. The total student score increased to 2,386 with an average of 85.24 which was in the good category (Basam, 2022). When compared to the condition before treatment, there was an increase in the average score of 15.95 points. In addition, the percentage of learning completeness increased from 17.86% to 78.57%. The improvement shows that the use of *web-based BookWidgets* learning media is able to help students understand historical material better so that the learning results obtained are more optimal

#### **The Influence of Web-Based BookWidgets Learning Media on Student Learning Outcomes**

Before hypothesis testing, the data were first tested for normality and homogeneity as a requirement for parametric statistical analysis.

Table 3. Normality Test

| <i>Tests Of Normality</i> |           |    |      |
|---------------------------|-----------|----|------|
| Shapiro-Wilk              |           |    |      |
|                           | Statistic | df | Sig. |
| Teacher Values            | .944      | 28 | .138 |
| <i>Post-Test Scores</i>   | .937      | 28 | .092 |

Source: Primary Data Processing

**Table 4.** Homogeneity Test

| <b>Test of Homogeneity of Variance</b> |                          |      |     |       |      |
|----------------------------------------|--------------------------|------|-----|-------|------|
| Living                                 |                          |      |     |       |      |
|                                        | Statistic                | df1  | df2 | Sig.  |      |
| Learnin                                | Based on Mean            | .079 | 1   | 54    | .780 |
| g                                      | Based on Median          | .216 | 1   | 54    | .644 |
| Outcom                                 | Based on Median and with | .216 | 1   | 53.99 | .644 |
| es                                     | adjusted df              |      |     | 8     |      |

|                       |      |   |    |      |
|-----------------------|------|---|----|------|
| Based on trimmed mean | .087 | 1 | 54 | .769 |
|-----------------------|------|---|----|------|

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Source: Primary Data Processing

The results of the normality test using Shapiro-Wilk showed that the value of the significance of the data before treatment was 0.138 and after treatment was 0.092. Both values were greater than 0.05 so that the data was declared to be normally distributed. Furthermore, the results of the homogeneity test showed a significance value of 0.780 ( $> 0.05$ ), so that the data were declared homogeneous and qualified for hypothesis testing. Hypothesis testing was carried out using *the Paired Sample t-Test* to find out the difference in student learning outcomes before and after the application of *BookWidgets learning media*.

**Table 5.** *Paired Sample Test*

| Paired Samples Test |      |         |        |        |         |         |       |    |      |
|---------------------|------|---------|--------|--------|---------|---------|-------|----|------|
| Paired Differences  |      |         |        |        |         |         |       |    |      |
| 95% Confidence      |      |         |        |        |         |         |       |    |      |
| Interval of the     |      |         |        |        |         |         |       |    |      |
| Std. Deviat         |      |         |        |        |         |         |       |    |      |
| ion Error Mean      |      |         |        |        |         |         |       |    |      |
| Lower Upper         |      |         |        |        |         |         |       |    |      |
| t df Sig. (2-       |      |         |        |        |         |         |       |    |      |
| tailed)             |      |         |        |        |         |         |       |    |      |
| Pair                | Teac | -       | 9.8279 | 1.8573 | -       | -       | -     | 27 | .000 |
| 1                   | her  | 15.9528 | 9      | 1      | 19.7637 | 12.1419 | 8.589 |    |      |
|                     | Valu | 6       |        |        | 5       | 6       |       |    |      |
|                     | es   |         |        |        |         |         |       |    |      |
|                     | -    |         |        |        |         |         |       |    |      |
|                     | Post |         |        |        |         |         |       |    |      |
|                     | Tets |         |        |        |         |         |       |    |      |

Source: Primary Data Processing

The results of the analysis showed a Sig. (2-tailed) value of 0.000 which was smaller than 0.05. In addition, a t-count value of 8.598 and a t-table of 2.056 were obtained at a significance level of 5%. Because  $t\text{-count} > t\text{-table}$  ( $8.598 > 2.056$ ),  $H_0$  was rejected and  $H_a$  was accepted. These results showed that there was a significant difference between student learning outcomes before and after the use of *web-based BookWidgets learning media*.

## Conclusion

The application of web-based *BookWidgets* learning media in history subjects in class X MAN 3 Banda Aceh City can be carried out well. The use of this media helps students follow the learning process more actively through various learning activities that are integrated in one digital platform. Web-based *BookWidgets* learning media affects the history learning outcomes of students in class X MAN 3 Banda Aceh City. The use of this media is able to improve student learning outcomes as shown by the increase in grades and completeness of learning after learning using *BookWidgets*.

### Suggestions

Teachers can use *BookWidgets* learning media as an alternative to web-based learning media to improve student engagement and learning outcomes. Researchers can then develop similar research on different materials, educational levels, or research designs so that broader information is obtained about the use of *BookWidgets* in learning.

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