

Analysis of the results of Wayground-Based formative assessments on the learning outcomes of High School Students' biographical texts

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ABSTRACT

Formative assessments have a strategic role in providing feedback that helps improve student learning outcomes. This study aims to analyze the effectiveness of the Wayground digital platform as a formative assessment medium in learning biographical texts in class X of SMA Negeri 1 Kawali. The method used is quantitative descriptive by involving students as research subjects through the presentation of multiple-choice tests on conventional media and the Wayground platform. The results of the study show that the use of Wayground can increase student engagement and strengthen the quality of feedback during the learning process. These findings affirm Wayground's pedagogical contribution as an alternative to digital assessment that supports monitoring learning outcomes more effectively and relevant to the demands of 21st-century learning.

1. Introduction

Indonesian language learning, especially at the high school level, not only focuses on mastering the material, but also emphasizes the development of skills, communicative, critical thinking, and reflective of various types of text genres (Suciati et al., 2019; Fithriyah & Isma, 2024). Reading and writing literacy is also a very important element to improve the quality of education (Susilo & Azizah, 2024). One type of text that supports literacy and is studied in grade X students is a biography text, a text that teaches students to understand various life stories of a character through the narrative structure and interesting facts of the character (Padang et al., 2024). A biographical text also tells a history or life journey of a character, so that the events that occur to the character can be taken as exemplary values to be used as inspiration and motivation for life by readers (Harahap, 2023). The success of students in learning biographical texts is highly determined by the active involvement of students in understanding the content, structure, and rules of the language, as well as the feedback provided by the teacher in the learning process (Sari et al., 2023).

One of the very important elements in 21st-century education is student assessment, which serves as a tool to measure learning processes and outcomes. Assessment is no longer positioned solely as a final measuring tool, but as an integral part of the learning process itself (Andriantoni et al., 2025). Formative assessments are present to see and improve the learning process, while providing feedback to teachers and students (Darwin et al., 2023). Formative assessment is a systematic process used by teachers and students during learning to collect information that can be used to improve ongoing teaching and learning (Munaroh, 2024). In other words, formative assessments allow for direct feedback on student achievement and provide opportunities to improve learning before summative assessments are conducted.

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Information and communication technology has now developed rapidly, which has brought significant changes to the world of education (Tamara et al., 2025). This has changed formative assessments have changed from paper form to a digital form that is more interactive and efficient. One of the digital platforms that is currently used to carry out assessments is Wayground or quizizz (Rahmawati et al., 2023), an interactive learning media that allows teachers to create practice questions, quizzes, and evaluations with attractive visuals and automatic reporting of results, and the advantage of Wayground lies in its ability to present direct feedback, facilitate the learning process, and provide an overview of students' competency achievements detailed and can be seen directly (Jong & Tacoh, 2024). In addition, Wayground or Quizizz can also be accessed anytime and anywhere with adequate internet support. Wayground has a very attractive appearance and is easy to use (Rahmawati et al., 2023).

Previous research related to formative assessment analysis with the help of Wayground or Quizizz was conducted by. The results of the study explained that the results of the first assessment obtained a KKM achievement percentage of 85%. Meanwhile, the results of the assessment using Quizizz, the average student experienced a decrease, namely 65, where the percentage of KKM achievement was 46%. Thus, from the use of the Quizizz platform, there was a decrease in the achievement of learning outcomes by 39%. However, the percentage of student completeness using Quizizz received a score of 65%. In addition, research revealed that the average score of students' formative assessment scores using Quizizz was higher, which was 84.40, compared to the average score of students' formative assessment scores using written questions, which was 73.13%. Furthermore, research explains that the use of Quizizz as an assessment medium is effective in improving student learning outcomes in mathematics learning. These results are shown by an increase in the percentage of student learning completeness. In the assessment without using Quizizz, students got a score percentage of 43.33%, then after using the Quizizz platform as an assessment medium in cycle 1, the percentage of student completeness increased by getting an average score of 66.67% and in cycle 2, the percentage of student learning completeness increased significantly by getting an average score of 80%.

Previous research on digital formative assessments has shown mixed findings. Several studies report improved learning outcomes through the use of Quizizz (Halimah et al., 2023; Rohana et al., 2024), while other studies have shown a decrease in competency achievement when Quizizz is used compared to written assessments (Mulyani, 2024). In addition to the diversity of results, there has been no research that has specifically examined the use of the Wayground platform in formative assessments, especially in the learning of biographical texts. Most of the previous research has focused on specific subjects, general quiz-based assessments, or digital media comparisons without considering the characteristics of the text as a learning object.

This gap shows the need for research that explores how Wayground can support formative assessment of biographical texts, a material in Indonesian learning that requires analytical skills on the structure and values of characters' lives. The novelty of this research lies in its focus on Wayground as an assessment platform that is still rarely researched, as well as its emphasis on the relationship between digital formative assessment, student engagement, and students' understanding of biographical text materials comprehensively. In addition, this research provides a pedagogical contribution by offering an empirical overview of the potential and challenges of using digital assessment in Indonesian learning on the Wayground Platform.

Therefore, this study aims to analyze the effectiveness of Wayground-based formative assessment in learning biographical texts in class X of SMA Negeri 1 Kawali. The findings of this research are expected to enrich academic discourse on digital formative assessment and support more adaptive and responsive learning practices in Indonesian education.

2. Method

The method in the study uses a quantitative descriptive design. This study uses a quantitative approach with a type of research with a descriptive method. This approach is used to describe the results of formative assessments obtained by students objectively and systematically in the form of numbers or quantitative data. Quantitative descriptive research aims to describe an ongoing phenomenon or phenomenon without manipulating the variables being studied (Sugiyono, 2019). The object of this study is the student learning outcomes in biographical text materials carried out through digital-based formative assessments. The subjects in the study were 20 students in class X of SMA Negeri 1 Kawali. The students took part in formative assessments using WayGround, which is a game-based learning platform that allows teachers to provide assessment questions interactively to students. Wayground offers a feature that can provide assessment results that are instantly recorded and accessible in real time (Yasa et al., 2024).

The instrument used in this study is a multiple-choice question consisting of 10 questions prepared based on indicators of competency achievement in biographical text material. These questions are entered into the Wayfair

platform and answered by students. After students complete the assessment, the results of the scores are automatically recorded in the system and used as the main data in the study. As a comparison of the analysis of student assessment results using the Wayground platform, in this study also a formative assessment was also conducted using conventional methods. The data analysis technique in this study uses descriptive statistics, which include the highest score, lowest score, average score, and percentage of achievement of the Minimum Completeness Criteria (KKM). This analysis aims to provide an overview of student achievement and how effective the use of Quizizz is in aiding the formative assessment process.

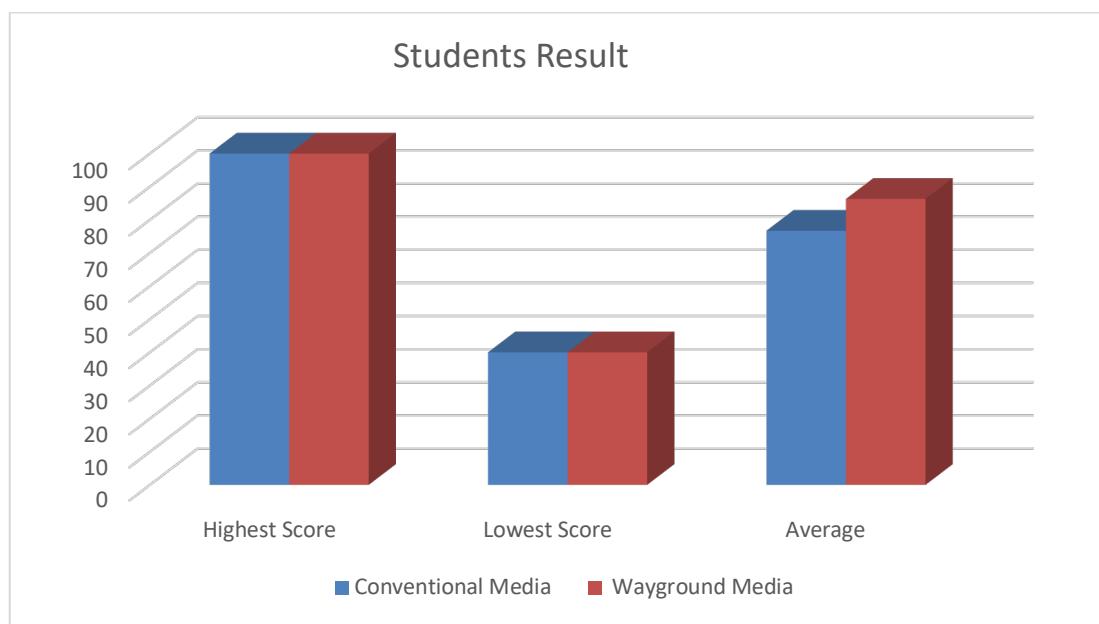
3. Result

This study aimed to develop microlearning-based instructional media in the form of short explainer video for Basic Japanese Grammar 1. The development process followed the PPE model: Planning, Production, and Evaluation.

Penelitian analisis hasil assesmen formatif dalam pembelajaran teks biografi dengan berbantuan The Wayground platform is implemented in grade X students of SMA Negeri 1 Kawali. The results of the implementation are in the form of learning outcomes that students get after doing formative assessments using conventional multiple-choice questions and using Wayground. Student learning outcomes are a change that occurs in student behavior that occurs after carrying out the teaching and learning process in accordance with the learning objectives (Nurhasanah et al., 2023). Student learning completeness is determined if 75% of students in the class have completed their learning outcomes, with an average score of student learning outcomes exceeding the Minimum Completeness Criteria (KKM) score set by the school (Jaja et al., 2021). The data on student learning outcomes are mapped in tables and graphs as follows.

Table1. Formative assessment scores with conventional media and Wayground

Criteria	Conventional Formative Assessment	Wayground Formative Assessment
Highest score	100	100
Lowest score	40	40
Average	76,7	86,3
Complete the number of students	17	26
An incomplete number of students	13	4
KKM achievement	56,67%	86,67%



Gambar 1. Graph of student formative assessment results using conventional and Wayground media



Based on the data on student learning outcomes, there is an initial condition of student learning outcomes using conventional media, while in the second condition, using media from the Wayground platform. From the comparison of the results, it was found that the average score of students obtained with conventional media was 76.7, with a KKM achievement percentage of 56.67%. Meanwhile, when students did formative assessments using the Wayground Platform, students got an average score of 86.3 with a percentage of KKM score completion of 86.67%. There were 17 students who completed formative assessments with conventional media, while 13 other students received incomplete scores. Meanwhile, when students did the assessment using the Waygroud Platform, there were 26 students who got a complete score, and then 4 other students got an incomplete score.

This data shows that the use of the Wayground platform as a formative assessment medium for biographical texts can increase the percentage of achievement of student learning outcomes, compared to when students use ordinary test questions.

Analysis of Formative Assessment Results with Wayground Platform

The implementation of formative assessment of biographical texts using the Wayground platform is given during the learning of biographical texts to get an overview of the changes in students' abilities after carrying out the learning of biographical texts. Data on student learning outcomes in biographical text learning can be directly accessed on the Wayground platform. The results of student work using the Wayground Platform are mapped in the following table.

Table 2. Result of student formative assessments using the Wayground platform

Rank	Name	Total Questions Attempted	Accuracy	Score	Correct	Yet to be graded	Partially correct	Uncorrect
1	Student 1	10	100%	6000	10	0	0	0
2	Student 2	10	100%	6000	10	0	0	0
3	Student 3	10	100%	6000	10	0	0	0
4	Student 4	10	100%	6000	10	0	0	0
5	Student 5	10	100%	6000	10	0	0	0
6	Student 6	10	100%	6000	10	0	0	0
7	Student 7	10	100%	6000	10	0	0	0
8	Student 8	10	100%	6000	10	0	0	0
9	Student 9	10	100%	6000	10	0	0	0
10	Student 10	10	90%	5400	9	0	0	1
11	Student 11	10	90%	5400	9	0	0	1
12	Student 12	10	90%	5400	9	0	0	1
13	Student 13	10	90%	5400	9	0	0	1
14	Student 14	10	90%	5400	9	0	0	1
15	Student 15	10	90%	5400	9	0	0	1
16	Student 16	10	90%	5400	9	0	0	1
17	Student 17	10	90%	5400	9	0	0	1
18	Student 18	10	80%	4800	8	0	0	2
19	Student 19	10	80%	4800	8	0	0	2
20	Student 20	10	80%	4800	8	0	0	2
21	Student 21	10	80%	4800	8	0	0	2
22	Student 22	10	80%	4800	8	0	0	2
23	Student 23	10	80%	4800	8	0	0	2
24	Student 24	10	80%	4800	8	0	0	2
25	Student 25	10	80%	4800	8	0	0	2



26	Stundent 26	10	80%	4800	8	0	0	2
27	Stundent 27	10	70%	4200	7	0	0	3
28	Stundent 28	10	70%	4200	7	0	0	3
29	Stundent 29	10	70%	4200	7	0	0	3
30	Stundent 30	10	40%	2400	4	0	0	6

From the data above, student learning results are obtained from the Wayground platform. Student data is sorted based on the ranking they get after doing the assessment. From the data, there were nine students who were able to answer all questions with a 100% accuracy rate. Initially, there were eight students who were able to answer 9 questions correctly and only 1 wrong question, with an accuracy rate of 90%. Then there were nine students who could answer 8 questions correctly and only 2 questions answered incorrectly, with an accuracy rate of 80%. Meanwhile, four other students got a score below the KKM, namely three people got a score of 70, and one person got a score of 40, with an accuracy level of 70% and 40%. From the results of the data, the percentage of KKM achievement in student learning outcomes by using Wayground-based formative assessments was 86.67% of the total students. This shows that the results have met classical completeness, where the minimum classical completeness must be more than 75% of the total students who get scores above KKM (Panjaitan et al., 2020).

These results show that the Wayground platform makes a positive contribution to improving student learning outcomes. The effectiveness of Wayground can be seen through several pedagogical and psychological aspects. First, student engagement increases because Wayground offers an assessment experience that is interactive, visual, and game-based (Thamrin et al., 2025). According to digital engagement theory, learning designs that involve gamification elements can increase focus, perseverance, and motivation, as well as students' active participation during the learning process (Jia et al., 2022). Elements such as attractive appearances, point systems, and rankings that can trigger healthy competition have an impact on increasing student motivation.

Second, Wayground strengthens learning motivation, especially through reward mechanisms and instant responses. In line with the discussion of Self-Determination Theory (SDT), students' motivation increases when they feel they have control over the learning process, have a pleasant experience, and obtain clear feedback (Zhang & Crawford, 2024). The Wayground platform addresses all three aspects through easy-to-understand instructions, an interface that is suitable for high school students, and an automated grading system that delivers results in real-time.

Third, Wayground's advantage as a formative assessment medium lies in the provision of real-time feedback. In the implementation of pedagogical learning, speed and clarity of feedback play an important role in helping students reflect on their understanding and correct mistakes before further evaluation (Sanchez et al., 2022). Wayground provides live information on true or false answers, scores, and achievements, so students can quickly figure out their weaknesses. Immediate feedback helps students better internalize biographical text material, especially in understanding the structure, content, and linguistic rules.

In addition, the automated reporting available in Wayground makes it easier for teachers to monitor student competency achievement more accurately and efficiently. This feature supports formative assessment practices that are oriented towards instructional decision-making, for example, designing remedial learning for four students who have not yet reached the KKM. Thus, Wayground functions not only as a test tool but also as a means of monitoring and strengthening the learning process on an ongoing basis.

Overall, the achievement of high student average scores and fulfilled classical completeness indicates that the use of Wayground in formative assessments has great potential in supporting the learning process of biographical texts. The combination of high engagement, increased motivation, and real-time feedback makes Wayground an effective assessment medium in the context of Indonesian learning.

Analysis of Student Learning Outcomes with Scores Above KKM

Based on the assessment data, it is known that as many as 26 students obtained scores above the Minimum Completeness Criteria (KKM), with details of nine students achieving perfect scores (100), eight students achieving a score of 90, and nine students achieving a score of 80. Findings from the analysis of formative assessments conducted through the Wayground Platform indicate that there are two question items that show a high level of answer errors for students. This condition reflects that most students have not fully understood the material tested in the two questions. One of the most frequently answered questions is incorrectly related to the material on the first steps in writing a biography text. The high number of errors in answering this question shows that many students still have difficulty in understanding the



basic concepts of the stages or processes of writing biographical texts, especially in the early part of the writing structure. This result is in accordance with the study (Nuril et al., 2025), which explained that the average score obtained by students in the Assessment of the ability to write biographical texts received a score of 65.8, with the highest score of 95 and the lowest score of 45. These results show that understanding related to students' biographical text writing skills is still relatively low.

The results of the formative assessment also show a question that contains an understanding related to the analysis of elements from biographical texts. From these questions, many students still cannot understand the elements that appear in the text in the question. This shows the weak ability of students to analyze elements of biographical texts. This is in line with research (Siregar & Andriany, 2025), which describes the condition of students in the ability to analyze the structure and elements of biographical texts before the application of the developed learning model. The results stated that before the application of the model, the literacy ability and analysis of the elements and structure of the student's biography text were in the low category, as evidenced by the acquisition of an average score of student learning outcomes of 68.57%.

Thus, the disadvantage of learning biographical texts based on the results of formative assessments with the help of the Wayground platform is the discovery of most students who still do not understand how to analyze the elements of biographical texts, as well as difficulties in understanding the initial steps to write biographical texts. However, the average achievement of the minimum completeness criteria or KKM obtained by students reached 86.67%. This shows that student learning outcomes increased by 52.8% from the initial condition when students did formative assessments using conventional media, which was 56.67% and by using the Wayground platform, it increased to 86.67%. The results of this increase are in line with research, which revealed that the average formative assessment score of students who use Quizizz or Wayground received higher results of 84.40%, compared to the average formative assessment score of students using written questions, which was 73.13%.

Analysis of Student Learning Outcomes with Scores Below KKM

This research involves the participation of 30 students who are respondents in the implementation of digital-based formative assessments through the Wayground platform. This assessment is used to evaluate students' understanding of the biographical text material that has been submitted, with reference to the Minimum Completeness Criteria (KKM) set at 75. Based on the data obtained from the assessment results, it is known that 4 students, or 13.33% of the total students, have not reached the expected level of learning completeness; three of the students only obtained a score of 70, and one other student received a score of 40. This score is still below the level of achievement of the KKM, which shows that the student has not completed it.

The data shows that in the process of learning biographical texts carried out, there are still obstacles for a small number of students, especially in certain aspects of the biographical text material. The results of the analysis of the question items also showed that the two students had difficulty in understanding the material for writing biographical texts and had difficulty in trying to analyze the elements and structures contained in the biographical text. These errors reflect limitations in mastery of basic concepts, including the identification of important parts of the biographical structure, such as orientation, important events, and reorientation of the biographical text.

This finding provides an overview of the biographical text learning carried out, that although most students have succeeded in meeting the competency standards and have not been able to exceed the KKM score, special attention needs to be paid to students who have not reached the KKM. In this context, the implementation of remedial programs for students who have not reached the KKM score is one of the important strategies, which can be focused on strengthening conceptual understanding and providing gradual and structured training to students. In addition, teachers are also advised to apply a differentiated learning approach so that it can accommodate the different learning needs of students in the classroom, especially for students who have not obtained high grades or for students who have grades below the minimum completeness criteria. This approach allows teachers to adjust materials that are easy to understand by various students in the classroom, adjust suitable learning models, and choose teaching materials and learning media that are in accordance with the characteristics and level of learning readiness of each student, so that with this strategy, it is expected to increase learning effectiveness and overall student learning outcomes.

Based on the analysis conducted, the results obtained are in line with the statement (Noor, 2020), which explains that the use of the Quizizz platform, now better known as Wayground, is suitable for use as an assessment medium by teachers to assess and give feedback on the learning that has been carried out. This increase in learning outcomes is due to the use of assessment media based on the Wayground platform to provide a more interactive, fun learning experience, and can increase student motivation in answering the questions provided in the formative assessment. Interactivity

factors and active involvement of students during the assessment process are one of the main reasons for increasing their understanding and achievement of learning outcomes (Mulyani, 2024). The use of Wayground is one of the alternatives that teachers can use as a medium in the implementation of formative assessments in classroom learning.

4. Conclusion

Based on the results of this study, it shows that the use of the Wayground digital platform as a formative assessment medium has a positive and significant impact on student learning outcomes in the learning of biographical texts. The improvement in learning outcomes can be seen from the comparison of students' average scores, which previously only reached 76.7 on conventional formative assessments, and can increase to 86.3 after using the Wayground platform. In addition, the percentage of achievement of the Minimum Completeness Criteria (KKM) increased from 56.67% in conventional assessments to 86.67% when using Wayground, which means that there was an increase in learning completeness by 52.8% from the initial condition. These results prove that digital-based formative assessments, especially through the Wayground platform, can improve students' understanding of the structure, content, and important elements of biographical texts.

The implementation of digital assessments through Wayground can facilitate a more interactive and enjoyable learning process for students while taking assessments. The platform also provides engaging animations, live accessible feedback, and automatic reporting of results after the assessment is completed, so that teachers can quickly identify students' strengths and weaknesses in understanding the material that has been taught. The features contained in the Wayground platform make the process of working on formative assessments not only a tool to measure student learning outcomes, but also a diagnostic tool that helps teachers in adjusting learning strategies. Thus, the Wayground platform supports the implementation of formative assessments that are oriented towards improving the teaching and learning process of students in the classroom on an ongoing basis.

However, although the overall learning outcomes show satisfactory results, the data also show that 4 out of 30 students, or 13.33% of the total students, still do not reach the set KKM standards. This shows that there are obstacles in understanding the basic concept of biographical texts. The most mistakes occur in questions that test students' understanding of the stages in the process of writing a biographical text, as well as the ability to analyze the structure and elements in the biographical text. These results show that although the technology on the Wayground platform can facilitate the assessment process and provide a more engaging learning experience for students, the quality of student understanding remains highly dependent on the readiness of the learning model and strategies carried out by the teacher when delivering the material to students in the classroom. These findings suggest that remedial programs need to be implemented to help students who have not been able to achieve the minimum completion criteria. The remedial program should be focused on strengthening concept understanding through a gradual approach and in accordance with the learning context. In addition, differentiated learning is also recommended so that teachers can adjust teaching according to the learning needs of each student. In this case, the use of the Wayground platform can be an effective means of providing additional training that suits the student's abilities.

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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