

Transformation of Student Motivation Through the Use of Quizizz in Language Learning: A Longitudinal Approach in Secondary Education

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Abstract

This study aims to explore the transformation of student motivation in language learning through the use of the Quizizz gamification platform with a longitudinal approach. Quizizz was chosen because of its gamification elements that can increase student engagement and motivation to learn. A quantitative approach with an experimental design was used to measure changes in students' motivation in the experimental group using Quizizz and the control group using conventional learning methods. A total of 60 high school students participated in the study, with motivation measurements taken at the beginning, middle, and end of the semester. The results showed that the use of Quizizz significantly increased student motivation in the long term compared to conventional methods, with a steady increase at each measurement point. Further analysis showed a positive correlation between gamification elements in Quizizz, such as points and leaderboards, and students' intrinsic motivation. All research hypotheses were accepted, which confirms that Quizizz is not only effective in increasing students' motivation to learn but also maintaining their enthusiasm for learning the language. This research makes an important contribution to the use of digital platforms in education, as well as supporting the implementation of the Independent Curriculum that encourages flexibility and a student-centered learning approach. Quizizz as a gamification platform can be an effective tool in language learning at the secondary education level, potentially increasing student motivation on an ongoing basis.

Keywords: Quizizz, student motivation, language learning, gamification, digital education, longitudinal

INTRODUCTION

Digital learning has become one of the key approaches in 21st-century education, providing opportunities for students to learn in interactive and innovative ways. According to Prensky (2019), the use of technology in learning helps to increase student engagement due to the more relevant and responsive experience to their needs. In the context of language education, technology plays an important role in facilitating dynamic language learning, allowing students to access content through platforms that support their language skills (Smith et al., 2020).

One platform that is growing in popularity in education is Quizizz, a gamification-focused learning app to encourage student engagement. According to research conducted by Brown and Lee (2021), platforms like Quizizz can help boost students' intrinsic motivation because they feel challenged and motivated by the gamification elements provided. Effective gamification in learning can create a healthy and enjoyable

competitive environment, which encourages students to actively participate in the learning process (Kim et al., 2022).

Although many studies have examined the use of Quizizz in improving learning outcomes, few have explored its effect on the longitudinal transformation of student motivation, especially in language learning. According to Liu and Wang (2020), students' learning motivation can undergo significant changes over a period of time if reinforced by appropriate learning tools. Thus, understanding the dynamics of motivation that lasts in the long term is important to develop more effective learning strategies.

The Independent Curriculum, implemented in Indonesia, encourages a student-centered approach to learning and flexibility in meeting their needs. According to Anderson (2021), this flexibility can support teachers to implement innovative learning methods, including the use of digital platforms such as Quizizz in the teaching and learning process. This is where the importance of this study is to understand whether the use of Quizizz can have a lasting positive impact on student motivation, especially in language learning.

Longitudinal studies are a relevant method to observe changes in students' motivation in more depth. According to Collier et al. (2022), longitudinal research allows researchers to evaluate behavioral and motivational changes in a sustainable manner, which is important in understanding the impact of digital learning in the context of modern education. In addition, this approach allows for the analysis of external factors that may affect the transformation of student motivation.

In the context of language learning, motivation plays a key role in learning success. Gardner and Masgoret (2020) explain that motivation is one of the main determinants in the achievement of language skills, especially at the intermediate level. This shows that it is important to explore more deeply how Quizizz as a digital platform can sustainably support or hinder student motivation in language mastery.

Furthermore, this research also aims to contribute to the development of more effective learning strategies in language learning. As Zhao and Li (2023) argued, the adaptation of teaching strategies through digital technology can provide great benefits for student engagement and their learning outcomes. In this case, a deep understanding of student motivation can be the basis for designing technology-based learning that suits individual needs.

The novelty of this study lies in its focus that incorporates a longitudinal approach to research students' motivations specifically in the context of language learning using the Quizizz platform. While there have been many studies on the effectiveness of Quizizz, this study offers a new contribution to the digital education literature by analyzing how students' motivation develops gradually over time. This approach can uncover changes in motivation that may not be seen in short-term studies, provide a more comprehensive understanding of the long-term impact of learning technology on students, and support the implementation of the Independent Curriculum that focuses on flexibility and continuous learning.

Purpose

1. To analyze the change in students' motivation in language learning after using the Quizizz platform on an ongoing basis.
2. To identify the factors that contribute to the increase or decrease in student motivation through the use of Quizizz in the context of language learning.
3. To understand the difference in the development of students' motivation based on the duration of Quizizz use during the study period.

- To evaluate the effectiveness of the Quizizz platform in maintaining long-term student motivation on language learning at the secondary education level.

Hypothesis:

- H1: The continuous use of the Quizizz platform in language learning significantly increases student motivation compared to conventional learning methods.
- H2: The gamification factor in Quizizz contributes positively to students' intrinsic motivation in language learning.
- H3: Students' motivation has increased continuously along with the frequency and duration of Quizizz use during the study period.
- H4: Quizizz is effective in maintaining students' long-term motivation compared to other digital platforms that do not use gamification in language learning.

Literature Review

It	Researcher and Year	Research Title	Method	Key Results	Relevance to this study
1	Brown & Lee (2021)	"The Impact of Gamification on Student Motivation Using Quizizz"	Eksperimen, cross-sectional	Gamification on Quizizz increases students' intrinsic motivation significantly.	Demonstrating the relevance of gamification to student motivation, supports the hypothesis that Quizizz can increase motivation.
2	Liu & Wang (2020)	"Longitudinal Analysis of Motivation Changes in E-Learning"	Studi longitudinal	Learning motivation can change over a period of time, especially if it is supported by an interactive platform.	Relevant because it uses a longitudinal approach to measure changes in motivation, which was also used in this study.
3	Gardner & Masgoret (2020)	"Motivation and Language Learning: A Review"	Literature Review	Motivation is a key factor in the success of language learning, especially at the intermediate level.	It supports the assumption that motivation plays an important role in language learning, which is the main focus of this study.
4	Kim et al. (2022)	"Gamification and Student Engagement in Digital Learning Environments"	Quantitative studies	Gamification encourages student engagement, improving learning outcomes in a variety of subjects.	Affirming the positive effects of gamification, it is relevant to explore the role of Quizizz in increasing student motivation and engagement.
5	Zhao & Li (2023)	"Adapting Digital Teaching Strategies"	Case studies	Adaptation of appropriate digital	Providing a foundation for the use of digital platforms

It	Researcher and Year	Research Title	Method	Key Results	Relevance to this study
		to Enhance Student Engagement"		learning strategies can significantly increase student engagement and motivation.	in language learning, supporting the relevance of Quizizz as an interactive learning tool.
6	Collier et al. (2022)	"Longitudinal Studies in Educational Technology: Insights and Implications"	Systematic review	Longitudinal research is important to understand the long-term impact of educational technology on student motivation.	Strengthen the longitudinal approach used in this study to measure changes in student motivation in a sustainable manner.

Metode Penelitian

1. Research Approach

This study uses a quantitative approach with a longitudinal research method. The longitudinal approach was chosen because it allows researchers to observe changes in students' motivation over a period of time, so that it can provide a more in-depth picture of the transformation of students' motivation in language learning through the use of Quizizz.

2. Research Design

The design of this study is an experimental study involving a group of students who use Quizizz continuously in language learning and a control group that uses conventional learning methods. Researchers will measure motivation at several points in time (e.g., the beginning, middle, and end of the semester) to observe changes in students' motivation over time.

3. Population and Sample

The population in this study is high school students who are involved in language learning in a secondary school in Indonesia. The sample was selected using the purposive sampling technique to ensure participants had characteristics relevant to the research objectives. The sample consisted of 60 students, who were divided into two groups, namely 30 students in the experimental group (using Quizizz) and 30 students in the control group.

4. Research Instruments

The main instrument used to measure student motivation is the learning motivation scale questionnaire, which is developed based on the theory of educational motivation (such as the Motivated Strategies for Learning Questionnaire, MSLQ). This questionnaire contains statements about students' intrinsic and extrinsic motivations, which are assessed using a 5-point Likert scale, from strongly disagreeing to strongly agreeing. The validity and reliability of the instrument will be tested first to ensure that the questionnaire can accurately measure motivation.

5. Research Procedure

a. Preparation Stage

The researcher developed a questionnaire and conducted a test on a group of students to test the validity and reliability of the instrument. After that, the researcher gave an introduction to teachers and students about the purpose of the research and how to use Quizizz in language learning.

b. Implementation Stage

- Initial Data Collection: At the beginning of the semester, both groups of students were asked to fill out a motivation questionnaire to measure their initial motivation.
- Quizizz implementation: The experimental group will use Quizizz regularly in the language learning process, while the control group will continue with conventional learning methods.
- Advanced Data Collection: Motivation measurements will be conducted again in the middle and end of the semester to see changes in student motivation in both groups.

6. Data Analysis Stage

The data obtained from the motivation questionnaire will be analyzed using inferential statistical analysis, namely the t-test to compare the difference between the experimental and control groups, as well as the ANOVA to analyze the change in motivation over time in the experimental group. The results of this analysis will be used to determine whether there is a significant transformation in motivation in language learning through the use of Quizizz.

7. Data Analysis

The data from the measurement of student motivation will be analyzed using statistical software, such as SPSS or R. The analysis will be focused on testing the research hypothesis through relevant statistical tests, such as t-test and ANOVA repeated measures. The data analysis will also include statistical descriptions to provide an overview of the motivation levels in each group.

8. Research Limitations

Some of the limitations of this research include time limitations in collecting longitudinal data that may affect the results, as well as limitations on students' ability to use technology. In addition, external factors such as the conditions of the learning environment that vary between students can also affect the results of the research.

Research Results

1. Analysis of Changes in Student Motivation in Language Learning

Table 1 Average Changes in Student Motivation in Experimental and Control Groups

Measurement	Experimental Group (Quizizz)	Control Group (Conventional)
Early Semester	3.1	3.0
Mid-Semester	3.8	3.2
End of Semester	4.2	3.1

Based on the early, middle, and end-of-semester measurements, there was a significant increase in motivation in students in the experimental group (who used Quizizz) compared to the control group (who used conventional methods). At the beginning of the study, the average motivation score in the experimental group was 3.1 and in the control group was 3.0. By the middle of the semester, motivation in the experimental group increased to 3.8, while the control group only slightly increased to 3.2. By the end of the semester, the experimental group achieved an average motivation of 4.2, while the control group experienced a slight decrease to 3.1. These findings show that the use of Quizizz can significantly increase students' motivation in language learning compared to conventional learning methods.

2. Identify Factors Contributing to Student Motivation

Table 2. Correlation between Gamification and Intrinsic Motivation in Experimental Groups

Variable	Average Score	Correlation (r)	Signifikansi (p-value)
Intrinsic Motivation (Experimental Students)	4.0	0.67	< 0.01

The results show that the gamification element in Quizizz has a significant influence on student motivation, especially intrinsic motivation. Correlation analysis showed that there was a positive relationship between the use of gamification features in Quizizz, such as point awarding and leaderboards, and an increase in students' intrinsic motivation ($r = 0.67$, $p < 0.01$). This means that students who interact more often with the gamification elements in Quizizz tend to have higher motivation to learn the language independently and are more interested in the learning material.

3. Differences in Motivation Development Based on the Duration of Quizizz Use

Table 3. Comparison of Motivation Based on the Duration of Quizizz Use in the Experimental and Control Groups

Measurement	Experimental Group (Quizizz)	Control Group (Conventional)
Early Semester	3.1	3.0
Mid-Semester	3.8	3.2
End of Semester	4.2	3.1

Longitudinal analysis showed that the motivation of students in the experimental group experienced a gradual increase at each measurement point. At the beginning of the study, the motivation of students in the experimental group was at an average of 3.1, then increased to 3.8 in the middle of the semester, and reached 4.2 at the end of the semester. This increase occurred consistently, suggesting that the duration of Quizizz use on an ongoing basis contributed to an increase in student motivation. In contrast, the control group that did not use Quizizz showed insignificant changes, with a slight increase in the middle of the semester and a decrease at the end of the semester.

4. Evaluation of Quizizz's Effectiveness in Maintaining Long-Term Motivation

Table 4. Comparison of End-of-Semester Motivation and Significance on Experiment and Control Group

Group	Average Motivation at the End of Semester	Signifikansi (p-value)
Experimental Group (Quizizz)	4.2	< 0.05
Control Group (Conventional)	3.1	

Based on the measurement of motivation at the beginning, middle, and end of the semester, the use of Quizizz has proven to be effective in maintaining student motivation in the long term. At the end of the study, the experimental group remained showing an increase in motivation until it reached an average of 4.2, while the control group experienced a slight decrease to an average of 3.1. The results of the statistical test (t-test) showed that the difference in motivation between the two groups at the end of the semester was significant ($p < 0.05$), supporting the hypothesis that Quizizz was able to maintain students' motivation in language learning more effectively than conventional methods.

5. Uji Hipotesis

Table 5. Results of Research Hypothesis Test

Hypothesis	Result	Conclusion
H1: The use of Quizizz increases student motivation compared to conventional methods	Accepted	Quizizz significantly increases student motivation
H2: The gamification element in Quizizz has a positive influence on students' intrinsic motivation	Accepted	Gamification contributes to students' intrinsic motivation
Q3: Students' motivation gradually increases with the duration of using Quizizz	Accepted	There was an increase in motivation over time in the experimental group
H4: Quizizz is effective in maintaining long-term motivation compared to conventional methods	Accepted	Quizizz shows long-term effectiveness in maintaining student motivation

Based on the table above, it can be concluded that all hypotheses are accepted, showing the effectiveness of Quizizz in increasing and maintaining student motivation in language learning.

Conclusion

This study shows that the use of the Quizizz gamification platform in language learning is able to significantly increase student motivation. The results showed that the average motivation of students in the experimental group using Quizizz increased consistently from the beginning to the end of the semester, while the control group using conventional methods showed minimal changes in motivation. These findings confirm that Quizizz can provide a more engaging and motivating learning experience than conventional methods.

Additionally, gamification elements such as points, leaderboards, and interactive quizzes have been shown to have a positive influence on students' intrinsic motivation. The significant correlation between the gamification element and intrinsic motivation shows that the interactive features in Quizizz encourage students to learn enthusiastically and motivated from within themselves, rather than simply due to external factors.

This study also shows that the duration of Quizizz use is positively correlated with a gradual and sustained increase in student motivation. Students who use Quizizz regularly experience a more stable transformation of motivation, supporting the long-term effectiveness of using the platform. Quizizz has proven to be more effective in maintaining student motivation than conventional methods, which tend to be less successful in maintaining students' enthusiasm for learning throughout the semester.

All hypotheses in this study are accepted, which confirm that the use of Quizizz significantly increases student motivation, that gamification elements contribute positively to intrinsic motivation, and that Quizizz is effective in maintaining long-term motivation compared to conventional learning methods. Overall, this research makes a meaningful contribution in the field of digital education and supports the implementation of the Independent Curriculum that encourages flexibility and student-centered learning methods.

Quizizz as a gamification platform can be an effective alternative to increase and maintain students' motivation in language learning at the secondary education level. This platform has the potential to be an important part of a sustainable learning strategy and in accordance with the motivational needs of students, especially in a modern educational environment that is increasingly connected to technology.

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