

# The Effect of Quizizz Application and Youtube Video as Learning Media on Understanding Presentation Material with Learning Motivation as a Moderating Variable in Students of the Faculty of Economics and Business, Universitas Negeri Jakarta

Ruli Rahmadani<sup>1</sup>, Arnoldus Gian Penga<sup>2</sup>, Osly Usman<sup>3</sup>

<sup>1</sup> Office Administration Education, Faculty Of Economic and Business, Universitas Negeri Jakarta, Jakarta, Indonesia.

<sup>2</sup> Office Administration Education, Faculty Of Economic and Business, Universitas Negeri Jakarta, Jakarta, Indonesia.

<sup>3</sup> Office Administration Education, Faculty Of Economic and Business, Universitas Negeri Jakarta, Jakarta, Indonesia.

Email: <sup>1</sup>[rulirahmadani10@gmail.com](mailto:rulirahmadani10@gmail.com), <sup>2</sup>[gianpenga@gmail.com](mailto:gianpenga@gmail.com), <sup>3</sup>[oslyusman@unj.ac.id](mailto:oslyusman@unj.ac.id)

**Abstract.** This study aims to analyze the effect from 119 students of the Faculty of Economics and Business, State University of Jakarta. The results of the analysis using PLS-SEM show that Quizizz and YouTube have a significant effect on material understanding. This study aims to analyze the effect of using the Quizizz application and YouTube videos as learning media on students' understanding of presentation material, with learning motivation as a moderating variable. Using an explanatory quantitative approach, data were collected through an online questionnaire, both directly and indirectly through learning motivation. Quizizz has a stronger influence than YouTube in increasing understanding and motivation. Learning motivation was shown to mediate the relationship between learning media and material understanding. These findings confirm the importance of integrating interactive and visual media in digital learning strategies to increase the effectiveness of student understanding.

**Keywords:** Quizizz, YouTube, learning motivation, learning media, university students.

## Introduction

Digital transformation in education has given rise to various forms of interactive learning media that support the effectiveness of teaching and learning processes in higher education. Students now tend to favor approaches that are visual, flexible and interactive. In this context, platforms like YouTube and quiz apps like Quizizz have become very popular. YouTube is widely used as a visual learning resource with audio narration, while Quizizz offers engaging and real-time game-based evaluation. The penetration of YouTube usage in Indonesia reaches 94% of internet users (We Are Social, 2023), while Quizizz has been widely adopted by lecturers to enrich online and offline learning. Some studies show the effectiveness of these media separately. (Pohan et al., n.d.) noted that YouTube videos significantly improved students' memory, while Diahratri (2022) found that Quizizz could improve students' learning motivation and understanding. However, empirical studies that combine both media in one learning model are still limited. In addition, psychological variables such as learning motivation, which according to Self-Determination theory (Ryan & Deci, 2000) determine learning success, have not been widely used as moderating variables in previous studies.

Learning theories such as Dual-Coding Theory (Paivio, 1986), Multimedia Learning Theory (Mayer, 2001), and Gamification Learning Theory form the conceptual foundation of this research. YouTube supports the visual-verbal channel, while Quizizz creates a fun, competitive and reflective learning experience. In this context, learning motivation is seen as a key variable that can strengthen or weaken the influence of media on material understanding. This study aims to examine the effect of using YouTube and Quizizz on the understanding of

presentation material for students of the Faculty of Economics and Business, State University of Jakarta, with learning motivation as a moderating variable. The literature gap raised includes the lack of studies integrating two types of digital media simultaneously and the lack of modeling learning motivation in the moderation framework. The novelty of this research lies in the digital media-based integrative learning model combined with the psychological aspects of students, as well as the focus on presentation courses that demand conceptual understanding and practical skills simultaneously.

### **Literatur Review**

#### **Quizizz Application as Learning Media**

The Quizizz application, as a gamified assessment platform, is grounded in the theory of constructivism, which emphasizes active student engagement and interactive learning. According to Vygotsky's social development theory, learning is enhanced when students are involved in socially interactive environments, which is facilitated by tools like Quizizz. Several studies have confirmed the positive impact of Quizizz on student learning. Sari and Hidayati (2022) found that using Quizizz significantly enhanced students' cognitive understanding and engagement in classroom learning. Similarly, Fitriyani and Maulana (2020) demonstrated improved learning outcomes when Quizizz was integrated into interactive lessons. However, Anjani and (Ilmi, 2023) discovered that Quizizz did not significantly affect learning outcomes in mathematics, suggesting its effectiveness may vary by subject context. Compared to previous research, this study incorporates motivation as a moderating variable, which is not commonly examined in earlier works, offering a fresh perspective on how internal student factors may interact with digital learning platforms.

#### **YouTube Video as Learning Media**

YouTube, as a multimedia-based learning platform, is supported by Mayer's Cognitive Theory of Multimedia Learning, which argues that students learn better from words and pictures than from words alone. This theory supports the educational use of video content to enhance conceptual understanding. Research by Anshori (2022) showed that YouTube videos significantly increased students' comprehension of economic material. Similarly, Putri and Wahyuni (2022) found that YouTube as a digital learning tool improved student engagement and learning outcomes. However, studies such as (Sagala, 2023) reported no significant effect of YouTube on learning achievement, indicating that learning outcomes depend on how video content is integrated with learning strategies. This study differs by using YouTube not as a primary medium, but as a supporting tool at the end of presentations, and explores its effectiveness under the influence of learning motivation, which remains underexplored in prior studies.

#### **Understanding Presentation Material**

Understanding presentation material is linked to Bloom's taxonomy, especially the cognitive domain which includes knowledge, comprehension, and application. Students' ability to comprehend material depends not only on content clarity but also on the media used. (Wibawa et al., 2022) emphasized that student understanding improves when material is presented using audiovisual elements such as video clips. Moreover, (Patimah & Widianjani, 2022) highlighted that interactive platforms like Quizizz foster better comprehension during presentations. However, some studies, like Unesa (2021), found that interactive tools did not significantly improve comprehension in social science presentations, suggesting that the subject matter or instructional design influences outcomes. In contrast to these previous studies, the current research combines two digital media (YouTube and Quizizz) and considers learning motivation as a moderator, providing a more integrated view of what affects students' understanding of presentations.

#### **Learning Motivation**

Learning motivation is underpinned by Self-Determination Theory (Deci & Ryan), which distinguishes between intrinsic and extrinsic motivation in driving student engagement and achievement. Motivation has been widely studied as a factor influencing academic success. (Suyudi et al., 2022) found that motivation significantly affects learning outcomes, especially in science education. In a related study, (Nurfaisah & Said, 2022) observed that higher motivation levels correlate with better performance in economic courses. However, some studies report that motivation does not always lead to better

learning outcomes, particularly in online learning settings (Game et al., 2025). The uniqueness of this study lies in examining motivation not as an independent variable, but as a moderating one that potentially strengthens or weakens the impact of learning media on comprehension. This approach enables a deeper understanding of how internal factors interplay with instructional tools.

### Research Hypothesis

- H1 - The use of the Quizizz application has a positive and significant effect on student's understanding of presentation material.
- H2 - The use of YouTube media has a positive and significant effect on student's understanding of presentation material.
- H3 - Learning motivation has a positive and significant effect on student's understanding of presentation material.
- H4 - The use of the Quizizz application has a positive and significant effect on student's learning motivation.
- H5 - The use of YouTube media has a positive and significant effect on student's learning motivation.
- H6 - Learning motivation moderates the effect of the Quizizz application on student's understanding of presentation material.
- H7 - Learning motivation moderates the effect of YouTube media on student's understanding of presentation material.

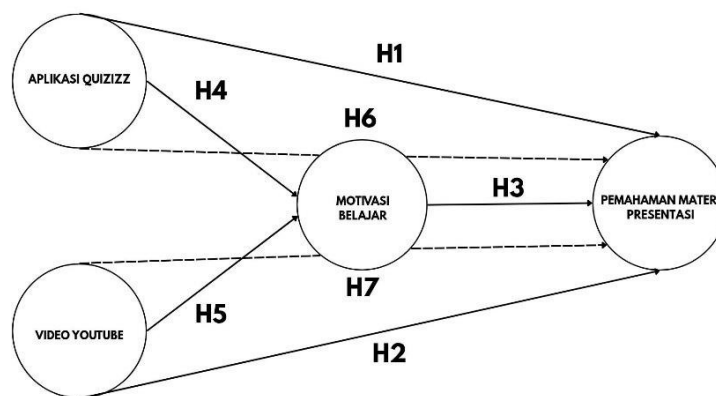


Figure 1 : Conceptual Framework

### Methods

This study uses a quantitative approach with an explanatory research type, which aims to examine the effect of using the Quizizz application and YouTube videos as learning media on understanding presentation material, with learning motivation as a moderating variable. This design allows researchers to analyze the cause-and-effect relationship between variables and see the interactive role of learning motivation in strengthening or weakening the influence of the two digital media. The research was conducted in the even semester of the 2024/2025 academic year, namely between April and June 2025, and was located at the Faculty of Economics and Business, State University of Jakarta (FEB UNJ), where students as respondents had been exposed to the digital learning media under study. The research population includes all active students of FEB UNJ. Given the large population and limited reach, the sampling technique was carried out non-probability with a purposive sampling approach. Inclusion criteria in sample selection include active students who have experience using the Quizizz application and watching learning videos from YouTube in lecture activities, and are willing to participate in filling out the questionnaire. The final number of respondents who filled out the questionnaire completely and validly was 119 students. This number is considered sufficient to represent the target population and meet the minimum requirements of quantitative analysis.

The research instrument used was an online questionnaire organized in the form of a five-point Likert scale, ranging from "strongly disagree" to "strongly agree". This instrument is designed based on indicators from each research variable, which are adapted from previous studies and have been tested for validity. The first independent variable, namely the use of the Quizizz application (X1), is measured through indicators such as material reflection, listening motivation, interest in self-study, question effectiveness, and interaction after presentation. The second variable, the use of YouTube videos (X2), is measured through concept clarity, attractiveness, reinforcement of understanding, content relevance, and learning engagement. Meanwhile, the dependent variable, understanding of presentation material (Y), was measured by perceived increase in understanding, ability to re-explain, media integration, and understanding of difficult concepts. Finally, the moderating variable is learning motivation (Z), measured by the dimensions of initial motivation, enthusiasm for learning, active encouragement, enjoyment of learning, and enthusiasm for the presentation.

Data was collected through online questionnaire distribution using platforms such as Google Form, which was distributed through student social media groups such as WhatsApp and Telegram. This method was chosen because it was able to reach respondents widely and efficiently. Data analysis was conducted using SmartPLS software. The initial step in the analysis involved validity and reliability tests to ensure the instrument was able to accurately measure the construct. Validity tests were conducted by evaluating the outer loading and average variance extracted (AVE) values, while reliability was measured using Cronbach's Alpha and composite reliability. Furthermore, classical assumption tests such as normality, multicollinearity, and heteroscedasticity tests were conducted to ensure the feasibility of the regression model. Discriminant validity test is also applied to ensure that each construct in the research model has indicators that are significantly different from other constructs. In addition, to evaluate the strength of the influence of the independent variables on the dependent variable, the R-Square ( $R^2$ ) and F-Square ( $f^2$ ) values are used.  $R^2$  shows the contribution of the independent variables in explaining the dependent variable, while  $f^2$  shows the effect size between variables. Hypothesis testing is done using the path coefficient and t-statistic value. If the t value  $> 1.96$  ( $p < 0.05$ ), the effect is declared significant. The moderating effect of the learning motivation variable is tested through analysis of the interaction between the independent variable and the moderating variable on the dependent variable. The results of this analysis will show whether learning motivation strengthens or weakens the relationship between learning media and material understanding.

The conceptual framework in this study illustrates that the use of the Quizizz application (X1) and YouTube videos (X2) directly affects the understanding of presentation material (Y). Learning motivation (Z) acts as a moderating variable that can change the direction or strength of the influence of the two independent variables on the dependent variable.

## Result and Discussion

This study aims to determine the effect of using the Quizizz application and YouTube videos on understanding presentation material, with learning motivation as a moderating variable. The number of respondents analyzed was 119 active students from various study programs at the Faculty of Economics and Business, State University of Jakarta. Most of the respondents came from the class of 2023 and 2024, which means they are currently actively undergoing interactive media-based digital learning.

Tabel 1 : Result of Outer Loading

Construct	Indikator	Loading Factor	Evaluasi
X1. Quizizz Application	X1.1	0.790	Valid ( $\geq 0.70$ )
	X1.2	0.761	Valid ( $\geq 0.70$ )
	X1.3	0.737	Valid ( $\geq 0.70$ )
	X1.4	0.763	Valid ( $\geq 0.70$ )
	X1.5	0.840	Valid ( $\geq 0.70$ )
	X2.1	0.779	Valid ( $\geq 0.70$ )

X2. Video YouTube	X2.2	0.729	Valid ( $\geq 0.70$ )
	X2.3	0.766	Valid ( $\geq 0.70$ )
	X2.4	0.766	Valid ( $\geq 0.70$ )
	X2.5	0.780	Valid ( $\geq 0.70$ )
Y. Understanding Presentation Material	Y.1	0.839	Valid ( $\geq 0.70$ )
	Y.2	0.833	Valid ( $\geq 0.70$ )
	Y.3	0.896	Valid ( $\geq 0.70$ )
Z. Learning Motivation	Z.1	0.803	Valid ( $\geq 0.70$ )
	Z.2	0.780	Valid ( $\geq 0.70$ )
	Z.3	0.726	Valid ( $\geq 0.70$ )
	Z.4	0.765	Valid ( $\geq 0.70$ )
	Z.5	0.777	Valid ( $\geq 0.70$ )

The convergent validity test results show that all indicators for each variable have an outer loading value above 0.70, in accordance with the standards of Hair et al. (2014), which indicates that all indicators are valid in measuring the intended construct. Reliability tests using Cronbach's Alpha and Composite Reliability also show values above the 0.70 threshold. All constructs have an AVE above 0.50, indicating that more than 50% of the indicator variance is explained by their respective constructs. Thus, the measurement model can be concluded to have good validity and reliability. The reliability test also showed satisfactory results. All constructs have Cronbach's Alpha and Composite Reliability values above the 0.70 threshold, indicating that this research instrument has high internal consistency. The Average Variance Extracted (AVE) value above 0.50 confirms that more than 50% of the variance of each indicator is explained by its latent construct, so the instrument has good convergent validity

Tabel 2 : multicollinearity

	VIF
X1.1	1.827
X1.2	1.716
X1.3	1.526
X1.4	1.736
X1.5	2.121
X2.1	1.820
X2.2	1.663
X2.3	1.660
X2.4	1.489
X2.5	1.673
Y.2	1.806
Y.3	1.726
Y.5	2.329
Z.1	1.863
Z.2	1.682
Z.3	1.585
Z.4	1.593
Z.5	1.733

The classical assumption test is carried out to check for potential multicollinearity between indicators.

The VIF test results show that all indicators are below the value of 5.00, indicating that there is no significant multicollinearity problem. This strengthens the validity of the structural model for further analysis.

In testing discriminant validity using the Fornell-Larcker criterion, the results show that each construct is more highly correlated with its indicators than with other constructs. This shows that each variable in this study has good discriminant validity and there is no overlap between constructs.

The R-square ( $R^2$ ) value indicates that the independent variables in this study are able to explain the dependent variable substantially. The  $R^2$  for presentation material understanding of 0.652 indicates that about 65.2% of the variation in material understanding is explained by Quizizz, YouTube, and learning motivation. The  $R^2$  for learning motivation is 0.587, indicating that



almost 60% of the variation in learning motivation is influenced by the learning media used. In the F-square test, the effect of Quizizz on material understanding has a moderate effect ( $f^2 = 0.172$ ), while the effect of Quizizz on learning motivation is very strong ( $f^2 = 0.380$ ). On the other hand, the effect of YouTube videos on both variables was small ( $f^2 < 0.15$ ). This shows that of the two learning media, the Quizizz application makes a greater contribution to student understanding and learning motivation. The F-Square analysis shows the strength of the contribution of each variable to the dependent variable. The Quizizz application has a moderate effect on material understanding, and a large effect on learning motivation. While YouTube videos only have a small effect on both. This indicates that the role of Quizizz is more dominant than YouTube in encouraging material understanding and student learning motivation.

The results of hypothesis testing show that the use of the Quizizz application has a positive and significant direct effect on students' understanding of presentation material ( $t = 4.365$ ;  $p = 0.000$ ). This indicates that the more often and effectively students use Quizizz, the level of understanding of the material presented in class increases. Quizizz allows students to test understanding in real-time, and provides immediate feedback that helps the learning process. Quizizz also had a positive effect on learning motivation ( $t = 6.146$ ;  $p = 0.000$ ). The gamification feature in Quizizz increases student engagement and creates a competitive yet fun learning atmosphere. This finding is supported by previous research which states that interactive media increases student activeness and motivation to learn (Hasanah & Rafi, 2022). YouTube videos also showed a significant effect on comprehension ( $t = 2.306$ ;  $p = 0.021$ ), although with a lower effect than Quizizz. This suggests that visually presented video content can still improve comprehension, especially in explaining abstract or complex concepts. In addition, YouTube also affects learning motivation ( $t = 3.506$ ;  $p = 0.000$ ), which shows that the delivery of material through audiovisual media attracts students' attention and facilitates understanding. This is in line with Putri's (2020) findings that learning videos significantly increase students' focus and interest in learning.

Tabel 3 : Path Coefesient

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
X1. -> Y.	0.384	0.391	0.088	4.365	0.000
X1. -> Z.	0.529	0.533	0.086	6.146	0.000
X2. -> Y.	0.212	0.215	0.092	2.306	0.021
X2. -> Z.	0.306	0.308	0.087	3.506	0.000
Z. -> Y.	0.307	0.306	0.100	3.056	0.002

The direct effect hypothesis test resulted in five significant relationships. *First*, the use of Quizizz has a positive and significant effect on material understanding, with the more intensive use of Quizizz directly proportional to the increase in student understanding of presentation material. *Second*, Quizizz also has a significant effect on learning motivation, indicating that the interactive elements and quiz format encourage student enthusiasm for learning. *Third*, YouTube videos also showed a significant effect on material understanding, although the strength of the influence was not as great as Quizizz. This shows that visual media such as videos remain relevant in supporting student understanding. *Fourth*, YouTube videos have a positive effect on learning motivation, indicating that visual displays and interesting content from YouTube can increase student engagement in learning. *Fifth*, learning motivation has a positive and significant influence on material understanding. This means that students who are more motivated show a better level of understanding of the presentation material. This finding strengthens the position of motivation as an important factor in the effectiveness of digital media-based learning.

Tabel 4 : Spesific Indirect Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
X1. -> Y.	0.162	0.161	0.056	2.881	0.004

X2. -> Y.	0.094	0.096	0.047	1.994	0.046
-----------	-------	-------	-------	-------	-------

Tests of indirect effects through learning motivation showed that learning motivation acts as a significant mediator in the relationship between Quizizz and material understanding ( $t = 2.881$ ;  $p = 0.004$ ). Similarly, learning motivation also mediates the effect of YouTube videos on material understanding ( $t = 1.994$ ;  $p = 0.046$ ). This means that the utilization of learning media not only increases understanding directly, but also indirectly by increasing student learning motivation.

Hypothesis testing of indirect effects was conducted to examine the role of learning motivation as a mediating variable between the use of learning media (Quizizz and YouTube) and material understanding. The results show that both indirect paths, namely from Quizizz to material understanding through learning motivation and from YouTube to material understanding through learning motivation, have a statistically significant effect.

The first path shows that the Quizizz application has a positive and significant indirect effect on material understanding through increased learning motivation. The high  $t$ -statistic value and  $p$ -value below 0.05 confirm that learning motivation acts as an effective mediator in this relationship. That is, the use of Quizizz is not only directly beneficial but also strengthens understanding through encouraging students' internal motivation. The second pathway shows that YouTube video viewing also has a significant indirect effect on material understanding, with learning motivation as a mediator.

Although the effect is smaller than Quizizz, this result still shows that learning videos have an important role in shaping the spirit of learning which then has an impact on increasing understanding. This result confirms the importance of learning motivation in modern learning models. When students feel more motivated because the media used is interesting and relevant, they are better able to process information well and remember material more effectively. In this context, motivation is not just an additional psychological factor, but serves as an important bridge between learning media and students' cognitive outcomes.

This result reinforces the assumption that learning motivation is a key variable in the learning process.

When students feel interested and motivated through interactive and visual learning media, they are more active, more focused, and more ready to receive the material presented. Learning motivation theory as proposed by Slameto (2003) states that motivation is an internal factor that determines the success of the learning process.

Overall, the findings of this study confirm that learning strategies that combine interactive media such as Quizizz and visual media such as YouTube can have a double positive impact: directly on material understanding, and indirectly through increased learning motivation. The Quizizz app proved to be more dominant than YouTube in both pathways of influence, suggesting that interactivity and gamification have a stronger effect in attracting student attention and engagement. The practical implications of these findings are significant for curriculum development and learning design in higher education. Lecturers and study program managers can strategically integrate the use of media such as Quizizz and YouTube in teaching and learning activities, especially in courses that require an understanding of presentation or communication. In addition, it is important for teachers to pay attention to the motivational elements of any media used, because the success of learning depends not only on the delivery of material, but also on the extent to which students feel interested and encouraged to learn actively. From a theoretical perspective, this research supports social-cognitive learning theory which emphasizes the role of internal motivation in the learning process. The model is also relevant to the educational technology approach which emphasizes the importance of meaningfulness and engagement in the use of digital media.

In general, the results of this study support and strengthen the findings of previous studies. Ramadhani (2021) showed that Quizizz is effective as a game-based learning evaluation media, which increases student participation and retention. This research is also in line with a study by Prasetyo (2021), who found that digital learning media can increase students' active engagement in online learning. Furthermore, this result is also in line with the constructivism theory approach in modern learning, where students are expected to play an active role in constructing their

knowledge through experience and interaction with learning resources. Both Quizizz and YouTube videos provide active and meaningful learning tools that support the formation of deeper understanding.

Meanwhile, the low  $F^2$  value of the YouTube pathway on material comprehension and learning motivation indicates the need to improve the quality and relevance of video content. This is an important input for lecturers and curriculum developers to tailor learning videos to students' needs to make them more impactful.

The results of this study provide important implications for the world of higher education, especially in the development of technology-based learning strategies. First, the use of game-based applications such as Quizizz proved to be more effective in increasing student understanding and motivation. Secondly, video media such as YouTube is also important, but needs to be combined with more interactive strategies to have maximum impact.

## Conclusion

Based on the results of data analysis and discussion, it can be concluded that the use of the Quizizz application and YouTube videos as learning media has a significant effect on the understanding of presentation material for students of the Faculty of Economics and Business, State University of Jakarta. The Quizizz application is proven to have the strongest direct influence on material understanding ( $t = 4.365$ ;  $p < 0.001$ ) and student learning motivation ( $t = 6.146$ ;  $p < 0.001$ ). Meanwhile, YouTube videos also showed a significant effect on material understanding ( $t = 2.306$ ;  $p < 0.05$ ) and learning motivation ( $t = 3.506$ ;  $p < 0.001$ ), although with a lower effect than Quizizz. In addition, learning motivation was shown to significantly mediate the relationship between learning media and material understanding, both in the use of Quizizz ( $t = 2.881$ ;  $p = 0.004$ ) and YouTube videos ( $t = 1.994$ ;  $p = 0.046$ ). Thus, all hypotheses proposed in this study are statistically proven and support the research objectives, namely knowing the effect of interactive digital media on understanding student presentation material with learning motivation as a moderating variable. This result confirms that the success of learning through digital media is not only determined by the effectiveness of the content, but also by the extent to which the media is able to generate active student learning motivation. Lecturers are advised to integrate Quizizz in learning evaluation and utilize relevant YouTube videos as material support. It is necessary to choose content that is contextually appropriate, interesting, and interactive so that the effectiveness and motivation of student learning can be optimally improved.

## Reference

- Game, P., Quizizz, E., Minat, T., Siswa, B., Mata, P., & Siswa, M. B. (2025). 5) 1-5. 3, 293– 307.
- Ilmi, Y. F. (2023). Efektivitas Penggunaan Aplikasi Quizizz Sebagai Kuis Interaktif Terhadap Kemampuan Kognitif Dan Motivasi Belajar Mahasiswa. *Progress: Jurnal Pendidikan, Akuntansi Dan Keuangan*, 6(1), 15–23. <https://doi.org/10.47080/progress.v6i1.2507>
- Nurfaisah, A., & Said, A. A. (2022). Pengaruh Penggunaan Media Pembelajaran Quizizz Terhadap Motivasi Belajar Siswa Kelas V. *JIKA PGSD: Jurnal Ilmiah Ilmu Kependidikan*, 6(2), 375. <https://doi.org/10.26858/jkp.v6i2.33079>
- Patimah, L., & Widianjani, W. (2022). Pengaruh Media Pembelajaran Dengan Menggunakan Aplikasi Quizizz terhadap Hasil Belajar Mahasiswa pada Mata Kuliah Matematika Diskrit. *Symmetry: Pasundan Journal of Research in Mathematics Learning and Education*, 7(2), 259–264. <https://doi.org/10.23969/symmetry.v7i2.6629>
- Pohan, M. M., Bobbi, M., & Nasution, K. (n.d.). *Implementasi Media Aplikasi Quizizz Terhadap Hasil Belajar Pada Teks Negosiasi Siswa SMK Pemda Rantauprapat 1 Institut Agama Islam Negeri Kerinci Jambi 2 '3 Universitas Al Washliyah Labuhanbatu Sumatera Utara E-mail : Submitted : Reviewed : Accepted : 1–8.*
- Sagala, I. C. (2023). Efektivitas Penggunaan Media Quizizz Terhadap Minat Belajar Siswa Dalam Pembelajaran Online Akuntansi. *Journal on Education*, 05(04), 14338–14348. <https://jonedu.org/index.php/joe/article/view/2467>



- Suyudi, M., Suyatno, S., Rahmatullah, A. S., Rachmawati, Y., & Hariyati, N. (2022). The Effect of Instructional Leadership and Creative Teaching on Student Actualization: Student Satisfaction as a Mediator Variable. *International Journal of Instruction*, 15(1), 113–134. <https://doi.org/10.29333/iji.2022.1517a>
- Wibawa, E. A., Hakim, A. R., Darmawan, R., & Anggraini, A. (2022). Efektivitas Penggunaan Aplikasi Quizizz untuk Meningkatkan Motivasi Berprestasi Mahasiswa pada Pembelajaran Daring. *SAP (Susunan Artikel Pendidikan)*, 7(2), 291. <https://doi.org/10.30998/sap.v7i2.14000>