The Use of Quizwhizzer Application to Improve Learning Outcomes to Reduce Potential Student Learning Loss

Firdiawan Ekaputra
Universitas Jambi

Article Info	Abstract
	The purpose of this study was to determine (1) the effect of quizwhizzer application on students' potential learning loss, (2) the effect of quizwhizzer application on students' learning outcomes. This research is a quasi-experimental research involving one pretest group and one posttest group. The subjects of this study were inorganic chemistry practicum students at the Jambi University Chemical Education Study Program, who were in class R-002 in the 2022/2023 academic year. This study used a pretest and posttest scheme. Student learning outcomes were measured through questions, and potential learning loss using a questionnaire. To test whether there is an impact of the quizwhizzer application on causing a decrease in potential learning loss or an increase in student learning outcomes, data on potential learning loss and subject learning outcomes were tested with a paired samples t test. The results obtained from this study are (1) quizwhizzer application has an influence on the possibility of students experiencing a decrease in learning loss and (2) quizwhizzer application has an influence on improving student learning outcomes.

Corresponding Author:
Firdiawan Ekaputra
Universitas Jambi
Email: firdiawan.ekaputra@unja.ac.id

1. INTRODUCTION

The development and advancement of technology has changed the way we interact and socialize. Learning media plays an important role in facilitating the use of technology in learning. Each learner has a variety of styles, learning patterns, and the ability to understand different materials. The curriculum as a standard for implementing learning activities in its application is adjusted to changing times to improve the quality of education in Indonesia (Hendra et al., 2023). The quality of education in Indonesia continues to experience development and reform as evidenced by the use of varied learning media. Learning that is carried out monotonously makes students bored and student understanding of the material provided is not maximized. Innovation in learning is needed to reduce the potential for learning loss of the learning material presented (Ekaputra & Sanova, 2023). The application of learning media in learning activities can help students in learning a material by adjusting the methods and individual needs of each student. By using media, learning can be more interesting and interactive, increase student engagement, and increase student understanding of the material being taught. In addition, the use of learning media can make learning more meaningful because it allows students to better understand the concepts, principles, and procedures taught (Ekaputra & Hasanah, 2021).

Based on observations in the field, the use of game-based learning media in evaluating student learning outcomes is rarely used in learning. The lack of utilization of varied

learning media, especially game-based, makes students bored and learning is monotonous. The tendency of students to memorize lecture material in facing the mid and final semester exams without understanding and developing the knowledge gained makes learning less meaningful, the level of student understanding of the learning material becomes less measurable. This is in accordance with the opinion of Ekaputra (2020) which states that using learning media makes students more interested in learning, allows adjustment of individual learning styles, and allows two-way learning. The use of learning media based on question exercises can assist lecturers in knowing the level of student understanding quickly, so that lecturers can evaluate at that time without having to wait for the end of the semester. According to Sanova et al. (2022) the use of open course applications makes it easier for lecturers to manage activities, manage grades, and make discussion activities more interactive. Therefore, the purpose of this research is to use learning media such as quizwhizzer applications into lecture activities.

Quizwhizzer is an application used as a game-based learning tool with multiplayer activities to the classroom that makes learning more interactive and fun (Agustiningsih et al., 2022). Quizwhizzer media can be operated using gadgets, making it easier to use and suitable for someone with a visual learning style involving the sense of sight to capture the material presented (Andriani et al., 2023). The Quizwhizzer application which is a game-based media that can make students easy to learn and understand material, so as to improve learning outcomes (Ismail et al., 2023). Student-centered learning provides opportunities for students to be directly involved in university activities, thus increasing critical thinking skills (Ekaputra, 2023).

The quizwhizzer application, which is able to present material and exercises in an interesting and interactive way in the form of a game, is expected to increase student motivation to learn and understanding of the material provided. This research focuses on the application of the quizwhizzer application in reducing the potential for learning loss in lecture activities and improving student learning outcomes. The purpose of this study was to determine (1) the effect of quizwhizzer application on reducing the potential for student learning loss (2) the effect of quizwhizzer application on improving student learning outcomes.

2. RESEARCH METHOD

This research is an experiment with a one-group pretest-posttest design. Students of the Chemistry Education Study Program who took the R-002 class inorganic chemistry practicum in the 2022/2023 academic year were the subjects of this study. The independent variable in this study is the application of the quizwhizzer application, while the dependent variable is testing the potential for learning loss in lecture activities, as well as student learning outcomes after the application of the quizwhizzer application. This research uses questionnaire method to collect data on potential learning loss, and questions to collect data on learning outcomes. The results regarding potential learning loss and initial learning outcomes were tested for normality to ensure that the data from each dependent variable obtained from the research sample were normally distributed. To determine whether there is a significant change in the learning outcome variable and the possibility of learning loss after the quizwhizzer application is used, the hypothesis of this study is paired samples t test. The existence of significant changes in the variables of learning outcomes and potential learning loss after the application of quizwhizzer application is indicated by significant results that are less than 0.05.

3. RESEARCH RESULTS AND DISCUSSION
3.1. Research result

The results of using the quizwhizzer application in learning are presented in Table 1.

Table 1. Use of Quizwhizzer Application

Material	Value
Alkaline earth elements	81
Aluminum and its compounds	85
Chemistry of iron	83
Making mohr salt	87
Average	84

The results of potential learning loss and learning outcomes before and after the application of the quizwhizzer application in learning are presented in Table 2.

Tabel 2. Results of Potential Learning Loss and Learning Outcomes

Variable	Begining	End	Gain Skor	Sig.
Potential *Learning Loss*	30.2	13.4	16.8	0.000
Learning Outcome	71.5	86.2	14.7	0.000

3.2. Discussion

Students filled out a questionnaire about potential learning loss and did pretest questions to measure learning outcome variables before the quizwhizzer application was applied in lecture activities. The questionnaire regarding potential learning loss regarding inorganic chemistry practicum learning shows a value of 30.2. This shows that the potential for student understanding of the lecture material to be carried out is 69.8, while the pretest results on the learning outcome variables carried out, the pretest average result is 71.5. Based on the potential value of initial learning loss and pretest, it is necessary to make an effort to improve student understanding, which in this study is in the form of using the quizwhizzer application in lectures.

Normality test was conducted on the initial data obtained through questionnaires and pretests to determine whether the initial data was normally distributed. The normality test results for the two dependent variables showed that the initial data were normally distributed, with a significance of 0.096 for the potential learning loss variable and 0.200 for the student learning outcomes data.

Learning media is a tool used by students to help understand lecture material. Learning media has interactive, visual, and audio elements, which make learning more interesting for students. According to Aghni (2018), learning media is an intermediary to build a learning condition, so that the formation of new knowledge, skills and attitudes of students is helped. The use of interactive learning media such as quizwwhizzer will increase student involvement and make it easier for lecturers to know the level of student understanding of course material. Quizwhizzer is a game-based learning tool. Game-based media can increase students' interest in learning because learning is not monotone (Janattaka & Okaviarini, 2022).

The quizwhizzer application is applied at the end of the meeting which is used as a medium for evaluating the practicum learning that has been carried out. The material evaluated using the quizwhizzer application is alkaline earth elements, aluminum and its compounds, iron chemistry, and the manufacture of mohr salt. The quizwhizzer application that is applied contains practice questions about the practicum that is carried out, so that students work on these questions to determine the level of understanding of students about the lectures conducted. Students' answers can be seen directly from the

quizwhizzer application, so that researchers can evaluate the lecture material at that time and discuss the differences in research results.

Based on the use of the quizwhizzer application shown in Table 1, the level of student understanding of the practicum material is quite good. Students' understanding of good material is evidenced by the results of evaluations conducted using the quizwhizzer application with an average score of 84. After using the quizwhizzer application on the four materials, students fill out a questionnaire regarding the potential for final learning loss and work on posttest questions to determine the final learning outcomes of students.

Gambar 1. Penggunaan aplikasi quizwhizzer oleh mahasiswa

Based on the student questionnaire regarding potential learning loss, it shows that the level of student understanding of the inorganic chemistry practicum learning material has increased, which is indicated by the results of the potential learning loss questionnaire which has decreased from 16.8 to 13.4. Students who take inorganic chemistry practicum lectures in class R-002 can take advantage of the quizwhizzer application that is applied to improve understanding of lecture material. The paired samples t test results showed a significant decrease in potential learning loss, with a significance of 0.00. According to (Susanto & Ismaya, 2022) the application of educational games using the quizwhizzer application can improve students' understanding of material. The application of learning media assisted by the quizwhizzer application provides an opportunity for students to improve their understanding of the concept of a material (Faijah et al., 2022).

The use of the quizwhizzer application in lecture activities not only reduces the potential for student learning loss, but also improves student learning outcomes. According to (Firmansyah, 2015), the final ability possessed by someone after following a series of learning processes is called learning outcomes. Students' posttest results increased by 14.7 to 86.2. The increase in student learning outcomes by 14.7 is a significant increase, because after conducting a paired samples t test, the significance is obtained at 0.00 or less than 0.05. The improvement in learning outcomes using the quizwhizzer application is in accordance with research conducted by Oktavian et al. (2023), Juhaeni et al. (2023) dan (Sumandya & Saraswandewi, 2023) which state that the use of the quizwhizzer application is able to provide experience in learning, so that learning outcomes increase. The integration of edu-games provides a new and fun experience for students (Purwanto, 2022). The results of this study indicate that the use of the quizwhizzer application can help students in reducing the potential for learning

loss and improving the learning outcomes of students who take inorganic chemistry practicum class R-002.

4. CONCLUSION

By using media, learning can become more interesting and interactive. This increases student engagement and understanding of the material in lectures. Based on the discussion and research results, it can be concluded that (1) there is a significant reduction in potential learning loss and (2) quizwhizzer application improves student learning outcomes. Suggestions for future research are to incorporate the quizwhizzer application into the learning process so that students better understand the lecture material.

5. REFERENCE

Aghni, R. I. (2018). Fungsi dan Jenis Media Pembelajaran Dalam Pembelajaran Akuntansi. *Jurnal Pendidikan Akuntansi Indonesia*, *XVI*(1), 98–107.

Agustiningsih, W., Sulistiono, M., & Musthofa, I. (2022). Implementasi Aplikasi Quizwhizzer Pada Mata Pelajaran PAI di SMP Islam Ma'arif 02 Malang. *VICRATINA: Jurnal Pendidikan Islam*, *7*(6), 222–231. http://riset.unisma.ac.id/index.php/fai/index

Andriani, F., Kamalia, D. L., Ridho, M., Hariyanti, L., & Utomo, A. P. Y. (2023). Penerapan Model ASSURE dengan Menggunakan Media Quizwhizzer dalam Pembelajaran Menganalisis Sistematika dan Kebahasaan Karya Ilmiah Kelas XI. *Jurnal Kajian Penelitian Pendidikan Dan Kebudayaan (JKPPK)*, *1*(2), 102–114. https://doi.org/10.59031/jkppk.v1i2.126

Ekaputra, F. (2020). Efektivitas Penerapan Poseidon Meeting Classroom berbasis Pendekatan Ilmiah Materi Stoikiometri Terhadap Motivasi Dan Prestasi Belajar Peserta Didik SMA Muhammadiyah 1 Yogyakarta. *VEKTOR: Jurnal Pendidikan IPA*, *1*(2), 59–65. http://vektor.iain-jember.ac.id

Ekaputra, F. (2023). Corelation Of Critical Thinking Ability To Learning Activity After Flipped Classroom-Pjbl Learning Model Application. *JPPIPA (Jurnal Penelitian Pendidikan IPA)*, *8*(1), 43–47. http://journal.unesa.ac.id/index.php/jppipa

Ekaputra, F., & Hasanah, E. (2021). Peningkatan Aktivitas Belajar Melalui Implementasi Media Virtual Laboratorium Kimia pada Masa Pandemi Covid-19 [Increasing Learning Activities Through the Implementation of Virtual Chemistry Laboratory Media During the Covid-19 Pandemic]. *Tajdidukasi: Jurnal Penelitian Dan Kajian Pendidikan Islam*, *11*(1), 11–16. https://doi.org/10.47736/tajdidukasi.v11i1.348

Ekaputra, F., & Sanova, A. (2023). Penerapan Model Pembelajaran Flipped Classroom-Pjbl Dalam Mengurangi Potensi Learning Loss dan Meningkatkan Hasil Belajar Mahasiswa. *Judika (Jurnal Pendidikan Unsika)*, *11*(1), 33–43. https://doi.org/10.35706/judika.v11i1.8312

Faijah, N., Nuryadi, & Marhaeni, N. H. (2022). Efektiivitas Penggunaan Game Edukasi Quizwhizzer Untuk Meningkatkan Pemahaman Konsep Teorema Phytagoras. *Jurnal Pendidikan Matematika*, *6*(1), 117–123.

Firmansyah, D. (2015). Pengaruh Strategi Pembelajaran dan Minat Belajar Terhadap Hasil Belajar Matematika. *Jurnal Pendidikan Unsika*, *3*(1), 34–44.

Hendra, Candra, A. A., & Ekaputra, F. (2023). Meningkatkan Keterampilan Berpikir Kritis Mahasiswa Melalui Kegiatan Pendampingan Penulisan Gagasan Pada Artikel. *ESTUNGKARA*, *2*(1), 24–32. https://doi.org/10.22437/est.v2i1.24577

Ismail, S. D. L., Odja, A. H., & Suronoto, L. (2023). Penerapan Model Problem Based Learning Berbantuan Aplikasi Quizwhizzer untuk Meningkatkan Hasil Belajar

Konsep Alat Optik. *Jurnal Tadris IPA Indonesia*, *140*(146). http://ejournal.iainponorogo.ac.id/index.php/jtii

Janattaka, N., & Okaviarini, N. (2022). Sosialisasi Pendampingan Pembelajaran Berbasis Gamifikasi di SDN Tanjungsari 1 Kabupaten Tulungagung. *Kanigara: Jurnal Pengabdian Kepada Masyarakat*, *II*(2), 412–418.

Juhaeni, J., Cahyani, E. I., Utami, F. A. M., & Safaruddin. (2023). Pengembangan Media Game Edukasi dalam Meningkatkan Hasil Belajar Matematika Kelas III Siswa Madrasah Ibtidaiyah. *Journal of Instructional and Development Researches*, *3*(2), 58–66. https://doi.org/10.53621/jider.v3i2.225

Oktavian, A. W., Wahyuni, D., & Istiani, F. (2023). Penerapan Aplikasi Quizwhizzer Untuk Meningkatkan Hasil Belajar PPKn Materi Keragaman Budaya Di Indonesia Kelas V Di SD Negeri Lajuk Sidoarjo. *ENTINAS: Jurnal Pendidikan Dan Teknologi Pembelajaran*, *1*(1), 106–114. https://app.quizwhizzer.com/play

Purwanto, W. (2022). Peningkatan Keterampilan Guru Memanfaatkan Media IT Dalam Pembelajaran Melalui Workshop TPOEG. *Jurnal Lingkar Mutu Pendidikan*, *19*(1), 11–17. https://doi.org/10.54124/jlmp.v19i1.59

Sanova, A., Afrida, & Ekaputra, F. (2022). Pengembangan Aplikasi Platform Open Course Berorientasi PjBL Dan Case Study Berbasis Gamifikasi. *Jurnal Penelitian Pendidikan Kimia: Kajian Hasil Penelitian Pendidikan Kimia*, *9*(2), 142–150. https://doi.org/https://doi.org/10.36706/jppk.v9i2.19009

Sumandya, I. W., & Saraswandewi, K. G. (2023). Pengaruh Model Pembelajaran Teams Games Tournament (TGT) Berbantuan Quizwhizzer Terhadap Hasil Belajar Matematika Siswa. *Jurnal Pendidikan Matematika Undiksha*, *14*(1), 1–6.

Susanto, D. A., & Ismaya, E. A. (2022). Pemanfaatan Aplikasi Quizwhizzer Pada PTM Terbatas Muatan Pelajaran IPS Bagi Siswa Kelas VI SDN 2 Tuko [Utilization of the Quizwhizzer Application on Limited PTM Social Studies for Grade VI Students of SDN 2 Tuko]. *CJPE: Cokroaminoto Juornal of Primary Education*, *5*(1), 104–110. https://doi.org/https://doi.org/10.30605/cjpe.512022.1583