

The Effectiveness of Online Learning Using Quizizz Education Game Media During the Covid-19 Pandemic in Applied Physics Courses

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Article Info	ABSTRACT
<p>Article History Received Nov 04, 2020 Accepted Dec 20, 2020 Published Dec 31, 2020</p> <p>Keywords: Covid-19 pandemic Learning media Online learning Quizizz</p>	<p>Online learning is learning that is applied by all educational institutions today. The use of appropriate media can support student effectiveness in education, especially in applied physics courses. This study aims to see online learning's effectiveness using quizizz educational media during the covid-19 pandemic in applied physics courses. This research uses a descriptive research method. The population in this study were students of the Almuslim University Physics Education Study Program. The sample selection used a purposive sampling method, namely students who were taking applied physics lectures. The data collection techniques used were tests (quizzes) and questionnaires. This study indicates that quizizz educational game media is one of the most effective online learning media used during the Covid-19 pandemic in applied physics courses.</p>
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I. Introduction

Education is a deliberate and organized attempt to build an environment and learning process for students to successfully improve their capacity for moral, religious, self-control, personality, intellect, noble character, and abilities essential for themselves and society [1].

The outbreak of Covid-19 coronavirus in 215 countries poses challenges for educational institutions, especially universities. The Government has outlawed crowding, social distancing, physical distancing, wearing masks, and often washing hands to tackle Covid-19. The Government has not allowed tertiary institutions to offer face-to-face (conventional) lectures through the Ministry of Education and Culture and ordered them to conduct classes or study online (Kemendikbud Dikti Circular Letter No.1 of 2020) [2]. Higher education is led to be able to have online learning [3].

Therefore, it is necessary to review the application of face-to-face learning that can gather students. Learning scenarios must prevent any potential for physical contact between students and teacher-students [3]. The Government's decision to dismiss students, move the teaching and learning process at home by implementing the Work From Home (WFH) policy makes many parties nervous. According to Sadikin [2], digital technology can allow students and lecturers to carry out the learning process even though they are in different places. According to Ferdiana [4], various learning media carried out by lecturers during the pandemic have increased the use of digital technology that is integrated into the entire student learning experience. Recent literature studies state

that today's students are proficient in using digital technology, are always active and very participatory on social media in the internet network. However, the Covid-19 pandemic era, which changed learning habits from offline forced them to go online, is essential to recognize the difficulties in utilizing the right digital technology. This is because the use of digital media for teaching and learning has long been inconsistent and varies widely between fields of study, level of study, and mode of delivery [5].

The use of various learning media is expected to increase student motivation in meaningful teaching and learning during the pandemic. Engaging learning will improve learning outcomes [6]. Various learning media that are carried out online utilize various internet network platforms, interaction, and facilities to support student learning services [7].

The use of online media or e-learning-based media is one solution to make students understand lecture material well. The learning process through e-learning prioritizes learning efficiency to get full teaching even though they are not facing to face. Besides, e-learning can be accessed anywhere, anytime, according to a given task, scheduled with a predetermined time limit.

Quizizz is one of the e-learning-based learning media to use. Quizizz is a game-based instructional software that brings multiplayer classroom activities and makes work in the classroom engaging and enjoyable. Students can perform classroom activities on their mobile devices by using Quizizz. Quizizz has game features like avatars, themes, memes, and fun songs in the learning process. Quizizz also helps learners to compete with each

other and to inspire them to learn. In class, students take the quiz simultaneously and can see their rating on the leaderboard automatically. Instructors/lecturers can directly track the process and can after the quiz is finished, download reports or rating scores to measure student performance. Using this app helps to stimulate interest and enhance student focus [8].

The quizizz application media has several advantages: time efficiency in processing learning outcomes, saving paper usage, exciting and fun, can be used anywhere, anytime, and provides data and statistics about student performance. According to Tarmini et al. [9] stated that the media quizizz is one of the most effective e-learning-based evaluation tools used to evaluate quickly and directly provide results to teachers, so they can quickly take action on students.

Through the quiz application media, lecturers give assignments to students, and learning physics becomes more fun. Because in addition to students focusing on answering questions while playing games, students can also see the scoring/ranking achieved. Students become more motivated to take courses—lectures in applied physics, previous students considered that applied physics courses were boring and monotonous by themselves through the use of quiz application media, but most considered.

II. Theory

Online Learning

According to Wartanto [10], one of the internet uses in education is distance learning. There are various terms to express distance learning, namely e-learning, virtual learning, virtual classroom, web-based learning, and online learning. Online learning is a non-face-to-face learning system but uses a platform that can help the teaching and learning process even though it is far away. Online learning aims to provide quality learning services in a massive and open network to reach learning space enthusiasts so that more and broader [11].

Some of the fundamental design principles for producing quality online learning [12],

- Identify student learning outcomes in the aspects of knowledge, skills, and attitudes.
- Ensuring that assessment strategies are aligned with learning outcomes.
- By arranging learning activities and assignments progressively, students can target the knowledge, skills, and attitudes that are built in the learning process.
- Ensuring a balance between lecturers who provide material, social interactions, challenges, or cognitive loads.

One of the challenges with online learning is the expertise in using technology on educators and students. Dabbagh [13] states that the characteristics of students in online or online learning activities are:

- The enthusiasm for learning
- Literacy of technology
- Ability to communicate interpersonally

4. Collaborate

5. Skills for independent study

Online learning is the mode of lectures that can be used as a workaround during the Covid-19 pandemic. Online learning uses Internet networks for usability, communication, stability, and the ability to create multiple forms of learning experiences, according to Sadikin and Hamidah [2]. The research recognized by [14] demonstrates that the use of the internet and multimedia technologies can change the way content is communicated and can be an alternative to conventional classroom instruction. Online learning can bring together students and lecturers to carry out learning interactions with the internet [15].

Learning Media

National Education Association [16] said that learning media is a means of communication in both print and perspective, including hardware technology and the position of learning media. Meanwhile, according to AECT (Association of Education and Communication Technology) [17], media are all forms used to distribute information.

If enabled by supportive media availability, the teaching and learning process can operate successfully and efficiently. Provision of dynamic media and instructional methodologies that are beneficial to the maximum growth of pupil ability. According to Ekayani [16], there are 7 media classifications, namely:

- Audio-visual motion media (sound film, videotape, film, tv)
- Audio-visual media is silent (audio series film, sound page)
- Semi-motion audio (distant voice writing)
- Moving visual media (silent film)
- Visual media is silent (printed pages, photos, microphone, slide mute)
- Media Audio (radio, telephone, audiotape)
- Print media (books, modules, independent teaching materials)

Quizizz Education Game

The quizizz educational game is an educational game that is still very rarely used. This game can use a laptop or smartphone and can be done anywhere. According to [18], quizizz is a digital and online-based learning media which consists of features of quizzes, surveys, games, and discussions. The quizizz application is described as a web tool for creating interactive quiz games that can be run on a device and can be accessed via a website www.quizizz.com.

Game quizizz is a game-based instructional program that takes to the classroom multiplayer activities and makes it interactive and enjoyable for classroom practice. Students can perform classroom activities on their mobile devices by using quizizz. Quizizz has game characteristics, such as avatars, themes, memes, and fun music in the learning process, not any other instructional software. quizizz also helps learners to compete with each

other and to inspire them to learn. Learners take the quiz in class at the same time to see their score on the leaderboard live. To measure student results, teachers can track the process and download a summary after the quiz is finished. The use of this program helps to stimulate interest and increase learner focus [8].

The quizizz application is one of the e-learning based learning evaluation media. Quizizz learning evaluation media also provides data and statistics about student performance, and can even download statistics in an Excel spreadsheet. Lecturers can easily track the number of student answers. The use of quizizz helps educators conduct evaluations without being limited by places, attractive displays, and set times to guide student concentration.

III. Method

This study uses descriptive research methods to describe and interpret objects according to [19]. Descriptive research was obtained using a combination research approach. Creswell [20] states that a combination method is a research approach that combines or connects qualitative and quantitative research approaches.

The population in this study were students of the Physics Education Program, Almuslim University. The sample selection used a purposive sampling method, namely students who were taking applied physics lectures.

There are two data collection techniques used in this study, namely, to obtain data on a quantitative approach, tests (quizzes) through quizizz educational media. Meanwhile, to get data on a qualitative approach, researchers used distributing questionnaires via a google form. Both data collection techniques are carried out via Whatsapp.

Before the research was carried out, the questionnaire and questions were analyzed for validation and reliability. Questionnaire validation and questions were given to 2 experts, namely media experts and physics education material experts at Almuslim University. As for all questionnaire questions before being validated, there were 15 questions, and only ten questions were declared valid. Likewise, with applied physics questions, the total questions before being validated were 20 questions, and only ten questions of applied physics were declared valid.

IV. Results and Discussion

We collect research data via a Google Form. The questionnaire, which was distributed via WhatsApp, showed that the educational game media attracted interest and motivated students to learn. Figure 1 shows how the quizizz application looks.



Figure 1. Quiz game educational media screen display

The analysis results are shown in Figure 2.

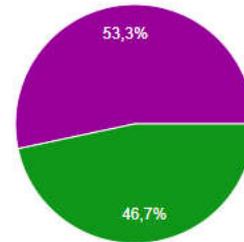


Figure 2. Percentage of student motivation towards media quizizz educational game

Based on the research results in Figure 2, it can be seen that quizizz educational media is fascinating and can motivate students in learning to agree and strongly agree, with a percentage of 53.3% of students answering agree and 46.7% of students answering strongly agreeing. There were no students who responded to options other than the two categories.

The use of quizizz educational game media can also help students understand the material in the applied physics course that has been given. This can be seen from the percentage results in Figure 3.

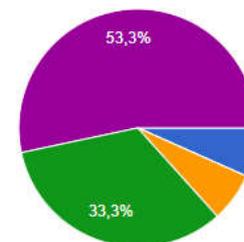


Figure 3. Percentage of students' understanding of applied physics material

Based on Figure 3, it can be seen that the largest percentage of students' understanding of the material given is in the category of agreeing and strongly agree with the rate of 33.3% and 53.3%. This shows that most students understand what has been conveyed through quizzes given with quizizz educational game media.

Quizizz educational game media can also provide positive challenges for students because in addition to doing quizzes, students can also play games and at the same time can see the ranking of the scores obtained

when answering the questions given. This can be seen from the percentage obtained as in Figure 4.

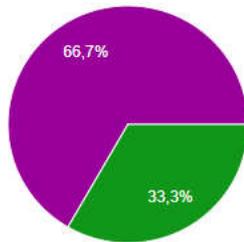


Figure 4. Percentage of a positive influence of educational game media quizizz against students

Based on Figure 4, the student answer category agrees and strongly agrees to the type with a percentage of 66.7% and 33.3%, and no one answers other options.

Then, the researcher gave several trick questions to see whether the students were consistent with the statements that had been given. Moreover, the research results prove that students are consistent with their opinions. This can be seen from the percentage results that have been given can be seen in Figures 5 and 6.

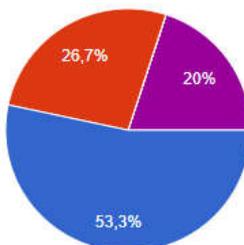


Figure 5. Percentage of a positive influence of educational game media quizizz against students

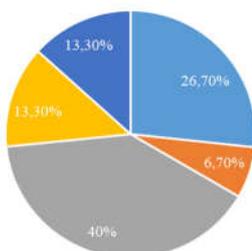


Figure 6. Percentage of a positive influence of educational game media quizizz against students

The question given for Figure 5 is that I do not like quizizz educational media because it is very dull and wastes my time, got a percentage of 53.3% in the strongly disagree category, 26.7% are in the disagree category and only 20% answered agree. Then the question is almost the same in Figure 6. Namely, I am less interested in quizizz educational game media, being in the strongly disagree category of 40%, the disagree category is 26.7%, the category strongly agrees and agrees by 13.3%, and the disagree category is equal 6.7%.

Researchers' results by giving tests/quizzes to applied physics courses can be seen in Table 1.

Table 1. Student test results through educational game media quizizz on applied physics courses

No	Name	Score	Accuracy (%)
1	YW	10790	100
2	WS	10790	100
3	RD	10790	100
4	MN	9610	90
5	NA	9590	90
6	KH	9550	90
7	RN	9070	90
8	MA	8700	90
9	RJ	8480	90
10	FH	8410	90
11	ND	8050	80
12	JR	7560	80
13	RL	6500	70
14	FT	6460	70
15	RH	980	10

Based on Table 1, it can be concluded that the test results of students using quizizz are very good. Students mostly can answer questions given by researchers, while the questions presented are ten questions. Students with the highest rank are three people with a score of 10790 and an accuracy score of 100%. Then there were seven students scored with 90% accuracy, two students with 80% accuracy, two students scored with 70% accuracy, and only one student got 10% accuracy.

Based on the use of quiz educational game media, it is proven that most students are very enthusiastic and motivated and get positive challenges through the quiz educational game media. Students can answer the questions given well. So it can be said that the quiz educational game media is one of the most effective learning media used during the Covid-19 pandemic in Indonesia.

V. Conclusion

This study concludes that the quiz educational game is one of the most effective online learning media during the Covid-19 pandemic for applied physics courses. This can be seen from students' enthusiasm towards the use of quiz education, game media, and the level of student success in answering the questions given. Also, quizizz educational game media is a creative learning medium in distracting students from gameplay. Hopefully, online learning using the quizizz application media can be appropriately implemented by students.

References

- [1] N. Safarati and R. Rahma, "Penerapan Model Advance Organizer Menggunakan Macromedia Flash untuk Meningkatkan Pemahaman Konsep Siswa SMA Negeri 3 Bireuen," *J. Ris. dan Kaji. Pendidik. Fis.*, vol. 6, no. 2, pp. 76-81, Oct. 2019.

- [2] A. Sadikin and A. Hamidah, "Online Learning in the Middle of the Covid-19 Pandemic," *BIODIK J. Ilm. Pendidik. Biol.*, vol. 6, no. 2, pp. 109–119, Jun. 2020.
- [3] F. Firman and S. Rahayu, "Pembelajaran Online di Tengah Pandemi Covid-19," *Indones. J. Educ. Sci.*, vol. 2, no. 2, pp. 81–89, Apr. 2020.
- [4] S. Ferdiana, "Persepsi Mahasiswa tentang Penggunaan Media Daring pada Program Studi S1 Ilmu Gizi Sekolah Tinggi Ilmu Kesehatan Surabaya selama Masa Pandemi Corona Virus Disease (COVID-19)," *Indones. J. Sci. Learn.*, vol. 1, no. 1, pp. 5–12, 2020.
- [5] N. Selwyn, *Digital Technology and the Contemporary University: Degrees of Digitization*. London and New York: Routledge, 2014.
- [6] Y. Rachmawati, *Efektivitas Pendekatan Reciprocal Teaching terhadap Ketuntasan Hasil Belajar pada Materi Vertebrata di Kelas RSBI SMA Muhammadiyah 2 Surabaya*. Surabaya: UNESA, 2010.
- [7] L. Anhusadar, "Persepsi Mahasiswa PIAUD terhadap Kuliah Online di Masa Pandemi Covid 19," *KINDERGARTEN J. Islam. Early Child. Educ.*, vol. 3, no. 1, p. 44-58, Apr. 2020.
- [8] L. S. L. Purba, "Peningkatan Konsentrasi Belajar Mahasiswa melalui Pemanfaatan Evaluasi Pembelajaran Quizizz pada Mata Kuliah Kimia Fisika I," *J. Din. Pendidik.*, vol. 12, no. 1, p. 29-39, Jul. 2019.
- [9] W. Tarmimi, I. Safi'i, Y. Witdianti, and S. Larassaty, "Peningkatan Kompetensi Profesional Guru melalui Webinar Evaluasi Hasil Belajar bagi Guru-Guru MTs Al-Ma'arif 1 AIMAS," *Transform. J. Pengabd. Masy.*, vol. 16, no. 1, pp. 53–62, Jun. 2020.
- [10] N. H. Wartanto, "On-line Learning Sebagai Salah Satu Inovasi Pembelajaran," *Pythagoras J. Pendidik. Mat.*, vol. 2, no. 1, pp. 10–23, 2006.
- [11] O. I. Handarini and S. S. Wulandari, "Pembelajaran Daring sebagai Upaya Study From Home (SFH) Selama Pandemi Covid 19," *J. Pendidik. Adm. Perkantoran*, vol. 8, no. 3, pp. 496–503, 2020.
- [12] Y. Bilfaqih and M. N. Qomarudin, *Esensi Pengembangan Pembelajaran Daring*. Yogyakarta: Deepublish, 2015.
- [13] N. Dabbagh, "The Online Learner: Characteristics and Pedagogical Implications," *Contemp. Issues Technol. Teach. Educ.*, vol. 7, no. 3, pp. 217–226, 2007.
- [14] D. Zhang, J. L. Zhao, L. Zhou, and J. F. Nunamaker, "Can E-learning Replace Classroom Learning?," *Commun. ACM*, vol. 47, no. 5, pp. 75–79, May 2004.
- [15] E. Kuntarto, "Keefektifan Model Pembelajaran Daring dalam Perkuliahan Bahasa Indonesia di Perguruan Tinggi," *Indones. Lang. Educ. Lit.*, vol. 3, no. 1, pp. 99–110, 2017.
- [16] P. Ekayani, "Pentingnya Penggunaan Media Pembelajaran untuk Meningkatkan Prestasi Belajar Siswa," 2017. [Online]. Available: https://www.researchgate.net/publication/315105651_Pentingnya_Penggunaan_Media_Pembelajaran_Untuk_Meningkatkan_Prestasi_Belajar_Siswa.
- [17] Asnawir and M. B. Usman, *Media Pembelajaran*. Jakarta: Ciputat Press, 2002.
- [18] Y. A. Kusuma, "Efektivitas Penggunaan Aplikasi Quizizz dalam Pembelajaran Daring (online) Fisika pada Materi Usaha dan Energi Kelas X MIPA di SMA Masehi Kudus Tahun Pelajaran 2019/2020," Sanata Dharma University, 2020.
- [19] Sukardi, *Metodologi Penelitian Pendidikan: Kompetensi dan Praktek*. Jakarta: Bumi Aksara, 2005.
- [20] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Method Approaches*. SAGE Publications, 2017