



Research Article





Development of quizizz-based learning media on digestive system materials in class xi

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Article Information	ABSTRACT
Submitted: 2022 – 08 – 24 Accepted: 2022 – 10 – 26 Published: 2022 – 10 – 26	<p>The development of technology and information encourages the creation of innovative, effective, and efficient use of learning media. The use of Quizizz web learning media has a positive impact on teachers and students. Teachers are facilitated with the help of using Quizizz from the many materials that already exist in the application. The purpose of this study was to determine the feasibility and practicality of using the Quizizz website media. This research was conducted at Karya Tani Private High School, Panai Hulu District. The subjects in this study were students of class XI which consisted of 30 students. This study uses Research and Development (R&D) research methods using a 4D model, namely define, design, develop and disseminate. The types of data obtained in this study are quantitative data and qualitative data. The data analysis technique used in this research is the feasibility analysis and the practicality of the Quizizz website learning media which is viewed from the aspect of validity. The results of the feasibility assessment study were obtained with a score of 92.66% on material validation and 92.5% on media validation. The practicality assessment obtained a score of 91.5% on the validation of the biology teacher and 92.52% of the student response. It can be concluded that the use of the Quizizz website-based learning media is feasible to be used as a learning medium at the school and is practically used by students and teachers.</p> <p>Keywords: Learning media; motivation; quizizz media development.</p>
Publisher Biology Education Department IKIP Budi Utomo, Malang, Indonesia	How to Cite Lestari, A., & Khairuna, K. (2022). Development of quizizz-based learning media on digestive system materials in class xi. <i>Edubiotik : Jurnal Pendidikan, Biologi Dan Terapan</i> , 7(02), 43-52. https://doi.org/10.33503/ebio.v7i02.2100
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INTRODUCTION

Education is a process of empowering and cultivating students in the implementation of a learning process that lasts forever (Syahmina et al., 2020). The achievement of high standards in education necessitates ongoing efforts to raise those standards. Because the implementation of quality learning programs is the goal of various educational programs, efforts must be made to improve the quality of learning in order to achieve quality education (Chairunnisa & Zulfiani, 2021). Improving the quality of

education is one of the national development programs that is closely related to the development of human resources (Lubis, 2018)

Learning is one of the standards for educational quality and is frequently evaluated by the accomplishment of objectives, or could also mean managing a situation accurately, "doing the right things" (Putri et al., 2020). The primary endeavor of education is learning. In order to influence student behavior and change. These changes include; cognitive, affective, and psychomotor. Where, this learning activity requires interactive communication between teachers and students. Understanding concepts, material mastery, and meeting student learning objectives are all signs of success in this learning process (Salsabila et al., 2020). Learning is a crucial component of any educational project. Education is crucial for human life and for the upbringing of the nation (Pranoto, 2020).

The development of an increasingly rapid era in line with the development of science and technology requires humans to have life skills to deal with these changes. One of them is literacy skills. Literacy is very important in 21st century learning. Technology in education has long been echoed as one of the warning signs of changes and innovations in the world of education even since entering the 21st century (Prianggita & Meliyawati, 2022). In the Era 4.0, students need to be digitally literate in addition to having HOTS. Technology must be used effectively by both teachers and students in order for them to create online learning environments (Anggraeni et al., 2019). Ease of access to learning media is also a consideration in the current digital era, because human activities cannot be separated from Information and Communication Technology devices that are often used today for students such as Laptops and Android Mobile Phones (Diwanata et al., 2021).

The competencies possessed by teachers in innovating in learning and being responsible for carrying out their duties as teachers are very important so that learning is more effective (Rahim & Rahman, 2022). Learning media is an information medium for teaching and learning activities so as to provide effectiveness and interactivity in learning. The inclusion of media in the teaching and learning process is anticipated to assist instructors in making lessons more simple, visual, quick, interactive, and fascinating to comprehend for both students and instructors (Nurfadhillah et al., 2021). Creative and innovative learning can support students' understanding in a fun way. To realize this learning, learning media is used (Wijayanti et al., 2022)

To follow the challenges of digital-based learning, technology and information have advanced concurrently, thus encouraging the creation of efficient, effective, and innovative use of learning media. For this reason, It is necessary to have a digital learning medium in order to use it to enhance student learning outcomes. One of the interesting learning media, through games, which have features to create motivation in learning, such as fantasy, challenges, and curiosity, cooperation, communication, and have an interactive nature that prioritizes these skills can lead to interaction between students (Salsabila et al., 2020).

Quizizz is a flexible, narrative educational game application, In addition to being able to be used to deliver theory, Quizizz can also be used as an interesting and fun learning evaluation medium (Sattar et al., 2021). The use of quizizz can increase student activity during the learning process, improve student learning outcomes, students are more thorough and calm in doing questions or quizzes, and train students to have good time management (Sitorus & Santoso, 2022). The use of Quizizz interactive learning media has a positive impact on teachers and students. Teachers are facilitated with the help of using Quizizz from the many materials that already exist in the application, in delivering learning materials, conditioning students in class, and increasing student motivation in learning. For students, in Quizizz there are several features that increase student motivation so that it is considered an interesting learning medium, because

it provides a new atmosphere, making it easier for students to understand learning materials (Hidayati & Aslam, 2021).

Quizziz is equipped with theme characters, avatars, and music that can be used as entertainment for students during the learning process and doing practice questions. Quizziz can also trigger competition between students because the quizziz app ranks automatically when students complete quizzes and practice questions. This can motivate students to be more active in the learning process and increase student focus in doing quizzes and practice questions (Aini, 2021). Quizziz is an educational game application that has a narrative and flexible nature, in addition, Quizziz can be used as a means of delivering material. Quizziz can also be used as an interesting and fun learning evaluation medium (Salsabila et al., 2020).

Based on the observations I made at the Karya Tani Private High School in the Panai Hulu sub-district that the school is very active in its artistic activities, so the school often holds activities or competitions about the arts. However, the learning process carried out at the Karya Tani Private High School still adheres to conventional learning. This is in line with the interview I conducted with the Biology subject teacher for class XI. It is said that the learning process is still conventional or teacher-centered. However, sometimes they also carry out group discussions and questions and answers.

Based on previous research, the researcher obtained several relevant studies. Although there is a relationship between the discussion, this research is still different from previous research. Development of Quizziz Application-Based Learning Media to Improve Students' Mathematical Problem Solving Ability During the Covid-19 Pandemic (Rahim & Rahman, 2022). This study focuses on the effectiveness of the Quizziz application on students' problem solving. The results of this study indicate that the media used obtain appropriate and effective criteria and students have increased in solving mathematical problems so that students can complete their scores.

Development of Android-Based Interactive Learning Media Through the Quiziz Application in Mathematics Lessons Vi Sdn Karang Tengah 06 (Nurfadhillah et al., 2021). This study focuses on the use of the Quizziz application on effectiveness during the learning process. The results of this study were students' attention to the use of mobile phones, students understood questions independently, were active in learning, careful and managed time, and were calm when working on questions in the Quizziz application. Quizziz has an attractive design and offers the option of turning the background music on or off. When students answer correctly or incorrectly, interesting pictures will also appear in the program (Kinanti, 2020; Lestari & Ulfa, 2022).

Development of Quizziz-Based Assessment Instruments to Measure Students' Competency in Physics Knowledge (Elisa et al., 2021). This study focuses on developing a quiz-based assessment tool that can measure students' competence in physics. The results of this study are that the media used in the study obtained very valid, very good, very practical, and very effective result used in learning. Several studies on the development of Quizziz website learning media actually already exist, It's just that few discuss the feasibility and practicality of website media on digestive system materials.

The lack of learning media in the Karya Tani Private High School causes learning to be still conventional. Based on these problems, it is necessary to develop appropriate learning media.. This is my goal in conducting research at Karya Tani Private High School to see the motivation and enthusiasm of students in learning and the ability of students to use the Quizziz website game learning media on the Digestive System material for class XI. Quizziz is a learning tool or media that has cool features to motivate students in learning (Elisa et al., 2021).

The purpose of this study was to determine the feasibility and practicality of using the Quizizz website media. With this Quizizz-based learning media, I hope it can be a motivation for teachers at Karyatani Private High School, Panai Hulu District to be able to use technology as a media material in the learning that is carried out. Because on the Quizizz website there are several features that can be used according to the material to be delivered.

RESEARCH METHODS

This research was conducted in August 2022 and the research location is in Karyatani Private High School, Panai Hulu District. The subjects in this study were students of class XI which consisted of 30 students. The Quizizz website media used is the material "Digestive System". Research and Development serves to validate and develop products. Validating the product means that the product already exists, and researchers only test the effectiveness or validity of the product (Sugiyono, 2019). The development model carried out can be seen in Figure 1.

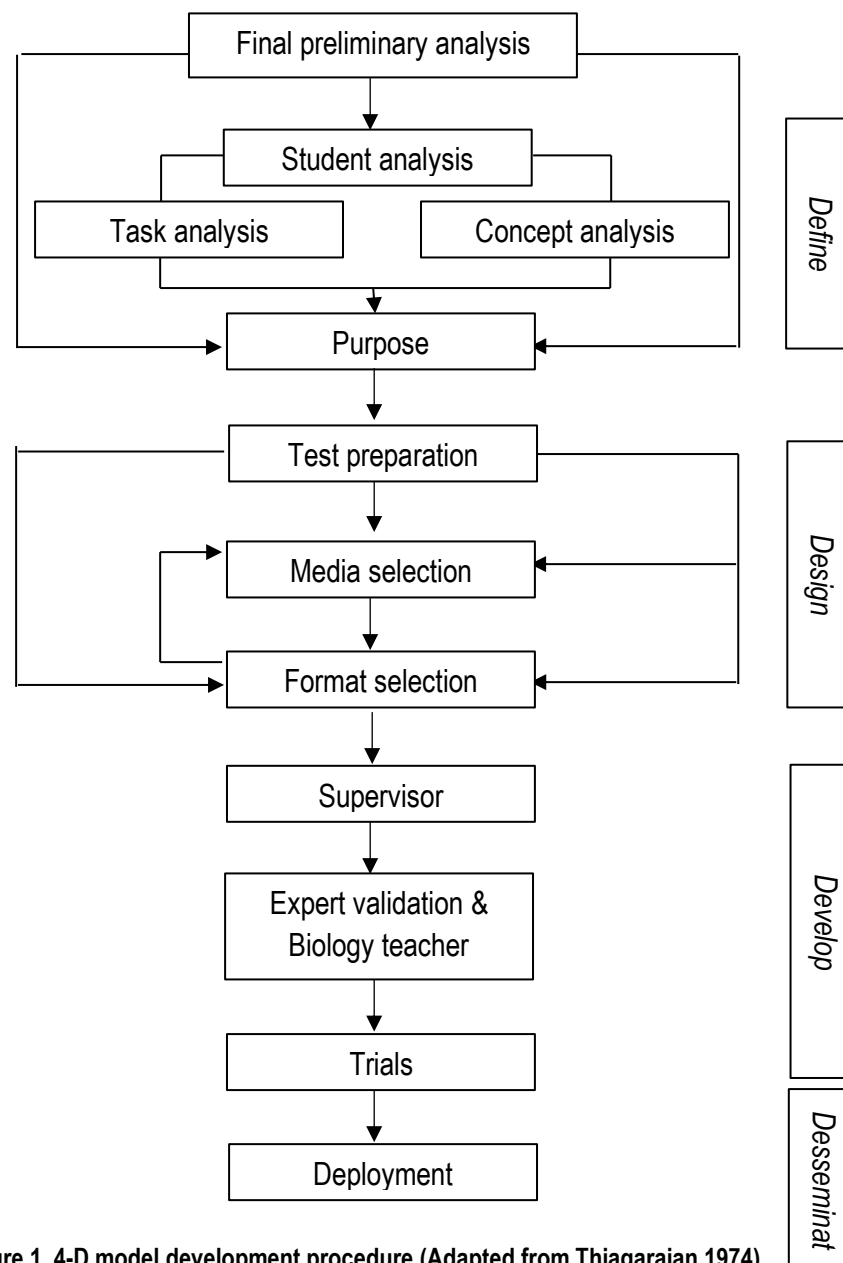


Figure 1. 4-D model development procedure (Adapted from Thiagarajan 1974)

This study uses *Research and Development* (R&D) research methods using a 4D model, *define, design, develop* and *desseminate*. The define stage determines and defines the requirements needed in learning by analyzing the objectives and limitations of the material developed by the device. The design stage prepares the prototype of the learning device by compiling the text, selecting the media, selecting the format, and the initial design. The develop stage is to produce learning tools that have been revised based on input from experts (Kristianti, D. & Julia, 2017)

The procedure for developing learning devices uses a 4-D model (Four D model) which consists of stage I (three stages of thiagaradjan), namely: a) *define*, b) *design*, c) *develop*, and stages to II (disseminate stage) (Thiagarajan (1974: 5 – 9); Dewi & Akhlis, 2016) . However, researchers only used stage I in this study.

The type of data obtained in this study is quantitative data to determine the feasibility and practicality by using the formula:

$$P = \frac{\sum X}{\sum Xi} \times 100\%$$

Information:

P = Percentage score (%)

$\sum X$ = Total value of respondents' answers in one item

$\sum Xi$ = The ideal number of scores in one item

Source: (Augustha et al., 2021).

In qualitative data using data analysis techniques in the form of media website Quizizz and questionnaires that have been validated with the criteria scores in tables 1, 2, and 3.

Table 1. Validation Criteria

Percentage (%)	Criteria
80.00 – 100	Good/Valid/Decent
60.00 – 79.99	Fairly good/Sufficiently Valid/Sufficiently decent
50.00 – 59.99	Not good / Not valid / Not worth it
00.00 – 49.99	Not good (Replaced)

Source: (Riduwan, 2012)

The validation criteria in Table 1 are used to see the criteria scores for media experts and material experts from the Quizizz website media questionnaire given to lecturers in their field of expertise. The results of the validation with the percentage criteria in the biology teacher questionnaire can be seen in Table 2.

Table 2. Criteria for the biology teacher's response questionnaire

Percentage(%)	Criteria
81.25 R≤100	Very positive/Very good
62.5 R≤81.25	Positive/Good
43.75 R≤62.5	Less positive/Not good
25 R≤43.75	Not positive/Not good

Source: (Ristianti et al., 2019)

The validation criteria in [Table 2](#) are used to see the score of the biology teacher's response criteria to the Quizizz website media being tested. The results of the validation with the criteria for the percentage of student responses can be seen in [Table 3](#).

Table 3. Student response criteria

Percentage	Criteria
80% - 100%	Interesting
60% - 79%	Quite interesting
50% - 59%	Less attractive
49 _	Not attractive

Source: (Sa'dun & Sriwijaya, 2010)

The validation criteria in table 3 are used to see the score criteria for student responses to the Quizizz website media used.

FINDING AND DISCUSSION

Based on the research that has been done at Karya Tani Private High School, the results can be explained as follows. *Define stage*, at this stage, an analysis was carried out on biology teachers at Karya Tani High School to find out whether the learning carried out at school could make students comfortable and easy to understand every learning process that took place, whether the teacher taught using learning media that was in accordance with today's times or not. At this stage an analysis is also carried out on students to examine and find out the cognitive character of students. Do students tend to be bored and find it difficult to catch or understand the learning that takes place in the classroom and analyze to identify the main learning parts that will be taught to students related to Biology learning.

Design Stage, the selection of the media used is the Quizizz website media on the Human Digestive System material. On the Quizizz website media, it consists of 25 multiple choice questions with several questions plus videos, images, and sounds. For the total work in solving the problem is 50 minutes. The media used is adjusted to the abilities of students, with the appearance of the media as attractive as possible so that students can complete the given task comfortably and easily to understand it.

Development Stage, the results of the validation of the assessment instruments carried out were media and material experts who were assessed by lecturers in their fields, then the validation of biology teachers, and also a student response questionnaire of 30 students. The results of this questionnaire will be used as a development in Biology learning conducted at Karya Tani Private High School. Following is result table validation from each validator as well as teachers and students. The results of material validation can be seen in [Table 4](#).

Table 4. Validation of material experts

No	Aspect	Percentage	Criteria
1	Learning	100%	Worthy
2	Adaptation	80%	Worthy
3	Presentation	93.333333%	Worthy
4	Student involvement	90%	Worthy
5	Friendly	100%	Worthy
Amount		463.33333%	Worthy
Average score percentage		92.666667%	Worthy

Material experts consist of lecturers in their fields, before conducting research the validator provides input to increase the number of questions and choose questions from each sub-chapter on the Human

Digestive System material. From the data in table 4, the results for each aspect of the assessment are 100% on the learning aspect, 80% on the adaptation aspect, 93.33% on the presentation aspect, 90% on the aspect of student involvement, and 100% on the friendly aspect. . With the total number of percentage values above, the average percentage value is 92.67% and is included in the appropriate criteria. The results of media validation can be seen in [Table 5](#).

Table 5. Validation of media experts

No	Aspect	Percentage	Criteria
1	Theory	90%	Worthy
2	Attractiveness	93.333333%	Worthy
3	Media Quality and Display	86.666667%	Worthy
4	Friendly	100%	Worthy
Amount		370%	Worthy
Average score percentage		92.5%	Worthy

Media experts consisting of lecturers and experts provide input that for each question and information on the answers to questions attached to the Quizizz website media, sources should be given from where the material was taken. The results of the questionnaire or validation sheet given to media experts were obtained: 90% on the material aspect, 93.33% on the attractiveness aspect, 86.67% on the quality and appearance aspect of the media, 100% on the friendly aspect. With the total number of values above, the percentage score on the Quizizz website media is 92.5% with proper criteria. The results of the validation of the biology teacher's responses can be seen in [Table 6](#).

Table 6. Biology teacher responses

No	Aspect	Percentage	Criteria
1	Theory	95%	Very good
2	Language	93.333333%	Very good
3	Presentation	97.142857%	Very good
Amount		285,47619%	Very good
Average score percentage		95.15873%	Very good

The results of the biology teacher validation can be seen in table 6 above. Where there are 3 aspects with each value, namely 95% on the material aspect, 93.33% on the language aspect, 97.14% on the Quizizz website media presentation aspect. From the acquisition of the percentage score in each of the above aspects, an average percentage of 95.15% was obtained with very good criteria. The biology teacher added that the media used was very practical and made the students' enthusiasm increase. The results of the validation of student responses to the use of the quizizz website media can be seen in [Table 7](#).

Table 7. Student responses

No	Aspect	Percentage Per Aspect	Criteria
1	Theory	91.33333333%	Interesting
2	Language	92.33333333%	Interesting
3	Presentation	91.11111111%	Interesting
4	Use	95.33333333%	
Average percentage		92.53%	Interesting

The results of the research response questionnaire given to students at Karya Tani Private High School got a percentage score with 91.33% on the material aspect, 92.33% on the language aspect,

91.11% on the presentation aspect, and 95.33% on the usage aspect. From the overall score of the percentage of the questionnaire obtained an average value of 92.52% with interesting criteria. Students also added to the questionnaire that they liked the use of the Quizizz media because during their learning they never used other media.

Learning takes place with enthusiasm and enthusiasm of students when answering questions on the Quizizz website media. Each student who is grouped competes to get the highest score. With the addition of videos, images and sound, students can better understand the questions presented. With the use of the Quizizz website media, it can be an alternative to the use of learning media in this day and age. Where all students have mobile phones that can be used for the learning process so as to generate student learning motivation.

The use of this Quizizz website media can also be used by other teachers to make learning more fun. The features contained in Quizizz can be processed and arranged according to the desired learning process. The use of technology-based media can also save the use of paper in carrying out the exam to be carried out.

CONCLUSION

The results of the study show that the use of the Quizizz website media can be an alternative media in the learning process today. The material validation expert gave a percentage score of 92.66% and was included in the very feasible criteria, the percentage score was 92.5% with very feasible criteria for media validation, biology teachers also gave their responses through a questionnaire with a percentage score of 91.15%. Meanwhile, from the students' responses to the Quizizz website media with a percentage of 92.52% with very decent criteria. Thus, it can be concluded that the use of the Quizizz website-based learning media is feasible to be used as a learning medium at the school and is practically used by students and teachers.

Suggestions for further research are expected to be able to spread the use of the Quizizz website media and it is hoped that Karya Tani Private High School can utilize technology media in the learning process so that learning is not monotonous and continues to follow the times.

ACKNOWLEDMENT

Big thank to Allah SWT who gave me health and fluency in research and making this journal article. Thank to my beloved mother and late father who have contributed in the form of costs in publishing this journal article and who gave love and attention while working on my final college assignment. I also thank the supervisor of my Journal Articles, namely Mrs. Khairuna, M.Pd who guides and provides input at every stage of journaling and also several validator lecturers who are willing and provide suggestions for the materials and media that I tested. Thanks to my brother Rahmansyah who also contributed as a replacement for my late father. Don't forget to thank my friends Dian Kusuma Wardana, Lisdiana, and Hamzah Kurniawan who also always encourage me.

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