Using Quizizz to Develop an Assessment of Physics Learning: An Alternative Way for Physics Learning Assessment in the Covid-19 Pandemic Era

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Abstract. Covid-19 has changed the learning system into Study From Home (SFH). The changes of this learning system make an assessment also doing online. Use of online assessment platform also being develops. Quizizz is one of them. It is crucial to use it in pandemic era like now. This study aims to develop an assessment of physics learning design using quizizz. This research is development research. The development model used ADDIE Models. The instrument was used questionnaire and test using quizizz. The results showed that the process development of the assessment has followed the five steps in ADDIE model such as analyze by doing needs assessment, design an assessment, development, implementation by doing trial run to students of senior high school who have received straight motion material previously, and the last step is evaluation by doing an evaluation in every process of developing an assessment of physics learning design using quizizz. The results showed that the design of physics learning assessment using quizizz is proper to use. The implementation of assessment using quizizz was effective in measuring student-learning outcomes during in pandemic era. It can be seen from the score of classical student passing percentage (p) which has a value of 72.7 % with an academic completeness assessment criteria is good. It implies that an assessment of physics learning using quizizz can be applied to other subjects.

1. Introduction
Pandemic covid-19 has an impact on all sectors of life, especially education. Changes in learning patterns today look massive at all levels of education. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) said that more than 850 million students in the world cannot study in schools due to the Covid-19 virus in 102 countries [1]. Almost all countries, especially Indonesia, have changed the education system and implemented Study From Home (SFH) policies. The transfer of conventional classrooms into online classrooms resulted in the digitization of education. This situation can be an opportunity to reorganize the learning process, the selection of learning resources, and the development of student learning evaluations. Based on surveys that have been conducted using questionnaires to students of SMAN 2 Bangkalan obtained results that during the Covid-19 pandemic as many as 69.7% students felt difficult during the online learning process both because of signal factors, quotas, communication media, and also in the understanding of materials.

The Organization for Economic Cooperation and Development noted that Indonesia's Programme for International Student Assessment (PISA) ranking sits at the bottom of the science rankings at 70th out of 78 countries [2]. Physics is a science related to processes, attitudes, products,
and scientific events [3]. Therefore, physics is often associated with daily activities. Based on research conducted by [4] as many as 68% students experienced misconceptions about the speed of straightening with acceleration, 20% students experienced misconceptions about the speed of negative value, and as many as 20% misconceptions about silent objects were objects that had zero acceleration.

Based on the data, in the implementation of learning, a teacher should be able to perform assessment and evaluation of physics learning well, especially in Straight Motion materials. Assessment itself can be quizzes, online tests, individual tasks, portfolios, or other online assessments [5]. The selection of online assessment concepts can be used as a learning concept that provides opportunities for students to think critically [6]. However, in reality physics teachers are still experiencing some obstacles related to the practice of questions and assessment systems in this online learning. Teachers use the Google Classroom app to provide assessments [7]. The teacher sends the file then the student's answer is also sent in the form of a file. Teachers correct manually and give the same assessment as offline learning. The condition of the field in SMAN 2 Bangkalan is also so, from the results of the questionnaire that have been obtained, 81.8 teachers using WhatsApp group to give assessment to students. The teacher sends the question in the form of a soft file and the student sends the results that have been done also in the form of soft file. The use of such a system takes a considerable amount of time and teachers are also required to manually correct student work one by one. It is considered less effective and efficient. Therefore, physics teachers need an application that can give them both a question and an assessment. A familiar application that is considered suitable in dealing with problems in this physics subject is Quizizz. Based on research conducted by [8] on Arabic language skills, students are very active in answering the questions given and concentrating more on the topic. This suggests that the use of quizizz can be a fun but still learning assessment that can refresh memory, draw, and give a positive impression in the student's brain memory [9].

Game Quizizz is a game-based educational application, which brings multiplayer activities to the classroom and makes them in interactive and fun training classes [10]. Quizizz games have game characteristics such as avatars, themes, memes, and entertaining music in the learning process. Quizizz also allows students to compete with each other and motivate them to learn so that learning outcomes can improve. Students take quizzes at the same time in class and see their live rankings on the leader board. Instructors or teachers can monitor the process and download the results when the quiz is complete to evaluate student performance. Quizizz games can help students learn motivation, reduce misconceptions and improve learning outcomes. The game-based learning has good potential to be used as an effective learning medium because it can stimulate visual and verbal components [11]. Therefore, the authors want to conduct research namely "Using Quizizz to develop an assessment of physics learning: an alternative way for physics learning assessment in the Covid-19 pandemic era".

Based on these, the purpose of this study are describe. (1) To determine the validity of the instrument for developing physics learning assessment using a quizizz; (2) To determine the effectiveness of the development of physics learning assessment using quizizz; and (3) To determine student responses to the development of physics learning using quizizz.

2. Methods
The type of research used is development research with ADDIE development design (Analyze, Design, Development, Implementation, and Evaluation). The main purpose of this development model is used to design and develop an effective and efficient product [12]. Visually, the ADDIE model stages can be seen in Figure 1.
The population in this study was students of class XI SMAN 2 Bangkalan. The research sample was taken in class XI MIPA 1 with 33 students. The instrument in this study was a questionnaire and an assessment response questionnaire using Quizizz. The questionnaire was given in the form of a needs analysis questionnaire and an assessment response questionnaire using Quizizz for students and also a validation sheet questionnaire for the expert team. The questionnaire that is made is arranged based on the questionnaire lattice which is made by arranging items through the elaboration of the variables and indicators used, and then written into the questionnaire statement items. While the test questions are in the form of questions that are used to test and determine the level of effectiveness of the development of physics learning assessments through quizzes.

The technique of data analyze in this research is quantitative and qualitative. This analysis is used to analyze the data obtained from the questionnaire. Quantitative data were obtained when distributing a validation questionnaire for learning assessment tools to expert lecturers and when testing the assessment tool in the form of a student response questionnaire. In quantitative data analysis, the first is analyzed of validity to testing the feasibility of assessment physics learning using Quizizz and testing the suitability of the media with the material. The answers to the expert validation questionnaire use a Likert scale. The second and third quantitative analyzes are analysis of student responses and the effectiveness of using quizzes.

3. Results and Discussion
This research begins by providing a needs analysis questionnaire to SMAN 2 Bangkalan’s students class XI MIPA 1, then conducting an assessment of learning physics using Quizizz that has been designed and validated by the validator, and providing student and teacher response questionnaires. The results of the study consisted of how to develop a physics learning assessment using Quizizz with the ADDIE development model, analyzing student needs, developing a physics assessment using a quizizz, the validity of the instrument, and also the effectiveness of using quizizz as an alternative to physics assessment. The following are the results and discussion obtained:

3.1. Stages Development of ADDIE
The stages of developing this physics learning start from analyze, design, development, implementation, and evaluation. The following are the ADDIE stages that have been carried out during research.

3.1.1. Analyze
At the analysis stage, the activities carried out include focusing on curriculum analysis and material where the curriculum used is the Covid-19 pandemic emergency curriculum, while the subject used is straight motion material. This curriculum is the same as the revised 2013 curriculum with the basic competencies used are KD 3.4 and KD 4.4. The next analysis is a need assessment by distributing questionnaires to 33 students of class XI MIPA 1 SMAN 2 Bangkalan. The results of this needs...
analysis questionnaire are used in the reference for developing physics learning assessments on straight motion material that the researcher will carry out.

3.1.2. Design
The design stage is focused on activities for collecting reference material, selecting a learning assessment instrument model, forms and methods of assessment and evaluation to be used in research. At this stage, material references are collected from relevant sources, high school books and journals with the aim of making it easier to make questions. The form of assessment that we use is multiple choice assessment. In line with the opinion of some researchers [14-17] which states that in order to measure learning outcomes that are more complex and measure higher order thinking skills, students can use multiple choice tests.

3.1.3. Development
The development stage is focused on activities for making learning assessment item instruments using quizizz, instrument validation, and also revision of instruments before finally being implemented in students. The stages of making the assessment item instrument after the initial competency analysis were to make a question grid, use it, compile the questions according to the question grid, and compile the answer key. The assessment instrument was developed in the cognitive domains of C3, C4, and C5 with a total of 15 questions with each question consisting of 4 answer choices. In the validation stage, the assessment instrument was validated by two lecturers in the physics department of the State University of Surabaya in the form of content assessment and media assessment. Instrument revision was carried out by improving the instrument according to input and suggestions from the validator lecturer.

3.1.4. Implementation
At this stage, the results of the development were tested on class XI MIPA 1 SMAN 2 Bangkalan students who had previously received straight motion material. The trial was carried out on class XI students because there was no teaching and learning process in the research carried out. This trial aims to determine the results of development, effectiveness, and student responses to learning assessments using quizizz.

3.1.5. Evaluation
Evaluation is carried out at every stage of the ADDIE development model. In addition, evaluations are also carried out on the results of the development of physics learning assessments using quizzes starting from the results of validation, effectiveness, and student responses obtained.

3.2. Analyzing of need assessment questionnaire
To find out the student’s needs regarding the use of learning assessment media for physics during the Covid-19 pandemic, a Google Form questionnaire was conducted on 33 students of SMAN 2 Bangkalan XI MIPA 1. Each respondent will be given the same statements and questions as in table 1. The data obtained can be seen in the Table 1.
### Table 1. Questions, Statements, and Response of SMAN 2 Bangkalan’s students class XI MIPA 1

| No | Questions or Statements                                                                 | Response      | Percentage (%) |
|----|----------------------------------------------------------------------------------------|---------------|----------------|
| 1  | What platforms do you often using when online learning?                                 | Google Classroom | 57.6           |
|    |                                                                                        | Google Meet   | 24.2           |
|    |                                                                                        | Zoom Meeting  | 27.3           |
|    |                                                                                        | WhatsApp Grup | 87.9           |
|    |                                                                                        | Facebook Grup | 0              |
|    |                                                                                        | Edmodo        | 0              |
|    |                                                                                        | Moodle        | 3              |
|    |                                                                                        | Quizizz       | 3              |
|    |                                                                                        | Strongly Agree| 18.2           |
|    |                                                                                        | Agree         | 69.7           |
|    |                                                                                        | Disagree      | 12.1           |
|    |                                                                                        | Strongly Disagree | 0           |
|    |                                                                                        | Strongly Agree | 15.2           |
|    |                                                                                        | Agree         | 54.5           |
|    |                                                                                        | Disagree      | 27.3           |
|    |                                                                                        | Strongly Disagree | 3            |
|    |                                                                                       | Signal and Quota | 87.9          |
|    |                                                                                        | Communication Media | 3.0         |
|    |                                                                                        | Retention of Material | 9.1        |
|    |                                                                                        | Daily Test    | 75.8           |
|    |                                                                                        | Individual Task| 78.8           |
|    |                                                                                        | Group Assignments | 27.3          |
|    |                                                                                        | Google Form   | 18.2           |
|    |                                                                                        | Whatsapp Grup | 81.8           |
|    |                                                                                        | Google Classroom | 57.6          |
|    |                                                                                        | Quizizz       | 3              |
|    |                                                                                        | Youtube       | 3              |
|    |                                                                                        | Strongly Agree| 21.2           |
|    |                                                                                        | Agree         | 54.5           |
|    |                                                                                        | Disagree      | 21.2           |
|    |                                                                                        | Strongly Disagree | 14.1        |
|    |                                                                                        | No Problem    | 15.2           |
|    |                                                                                        | Signal and Quota | 39.4          |
|    |                                                                                        | Retention of Material | 12.1      |
|    |                                                                                        | Limited Time  | 33.3           |
|    |                                                                                        | Strongly Agree| 15.2           |
|    |                                                                                        | Agree         | 63.6           |
|    |                                                                                        | Disagree      | 18.2           |
|    |                                                                                        | Strongly Disagree | 3.0          |
|    |                                                                                        | Yes           | 100            |
|    |                                                                                        | No            | 0              |
|    |                                                                                        | Ever          | 90.9           |
|    |                                                                                        | Never         | 9.1            |
| 2  | During online learning process, you enjoy the process and carry out it smoothly         | Strongly Agree| 18.2           |
|    |                                                                                        | Agree         | 69.7           |
|    |                                                                                        | Disagree      | 12.1           |
|    |                                                                                        | Strongly Disagree | 0           |
|    |                                                                                        | Strongly Agree | 15.2           |
|    |                                                                                        | Agree         | 54.5           |
|    |                                                                                        | Disagree      | 27.3           |
|    |                                                                                        | Strongly Disagree | 3            |
| 3  | During the online learning process, I fell difficult                                     | Signal and Quota | 87.9          |
|    |                                                                                        | Communication Media | 3.0         |
|    |                                                                                        | Retention of Material | 9.1        |
|    |                                                                                        | Daily Test    | 75.8           |
|    |                                                                                        | Individual Task| 78.8           |
|    |                                                                                        | Group Assignments | 27.3          |
|    |                                                                                        | Google Form   | 18.2           |
| 4  | What difficulties do you experience when implementing the online learning?             | Signal and Quota | 87.9          |
|    |                                                                                        | Communication Media | 3.0         |
|    |                                                                                        | Retention of Material | 9.1        |
|    |                                                                                        | Daily Test    | 75.8           |
|    |                                                                                        | Individual Task| 78.8           |
|    |                                                                                        | Group Assignments | 27.3          |
|    |                                                                                        | Google Form   | 18.2           |
|    |                                                                                        | Whatsapp Grup | 81.8           |
|    |                                                                                        | Google Classroom | 57.6          |
|    |                                                                                        | Quizizz       | 3              |
|    |                                                                                        | Youtube       | 3              |
|    |                                                                                        | Strongly Agree| 21.2           |
|    |                                                                                        | Agree         | 54.5           |
|    |                                                                                        | Disagree      | 21.2           |
|    |                                                                                        | Strongly Disagree | 14.1        |
|    |                                                                                        | No Problem    | 15.2           |
|    |                                                                                        | Signal and Quota | 39.4          |
|    |                                                                                        | Retention of Material | 12.1      |
|    |                                                                                        | Limited Time  | 33.3           |
|    |                                                                                        | Strongly Agree| 15.2           |
| 5  | During online learning, what form of assessment you have received?                     | Signal and Quota | 87.9          |
|    |                                                                                        | Communication Media | 3.0         |
|    |                                                                                        | Retention of Material | 9.1        |
|    |                                                                                        | Daily Test    | 75.8           |
|    |                                                                                        | Individual Task| 78.8           |
|    |                                                                                        | Group Assignments | 27.3          |
|    |                                                                                        | Google Form   | 18.2           |
|    |                                                                                        | Whatsapp Grup | 81.8           |
|    |                                                                                        | Google Classroom | 57.6          |
|    |                                                                                        | Quizizz       | 3              |
|    |                                                                                        | Youtube       | 3              |
|    |                                                                                        | Strongly Agree| 21.2           |
|    |                                                                                        | Agree         | 54.5           |
|    |                                                                                        | Disagree      | 21.2           |
|    |                                                                                        | Strongly Disagree | 14.1        |
|    |                                                                                        | No Problem    | 15.2           |
|    |                                                                                        | Signal and Quota | 39.4          |
|    |                                                                                        | Retention of Material | 12.1      |
|    |                                                                                        | Limited Time  | 33.3           |
|    |                                                                                        | Strongly Agree| 15.2           |
|    |                                                                                        | Agree         | 63.6           |
|    |                                                                                        | Disagree      | 18.2           |
|    |                                                                                        | Strongly Disagree | 3.0          |
|    |                                                                                        | Yes           | 100            |
|    |                                                                                        | No            | 0              |
|    |                                                                                        | Ever          | 90.9           |
|    |                                                                                        | Never         | 9.1            |
Based on Table 1, it is known that in the first question, there were various types of platforms used as learning media during the Covid-19 pandemic, especially WhatsApp as 87.9% because its use was quite easy and practical.

In the second statement, 87.9% of students enjoyed and carried out online learning process smoothly. According to respondents, online learning can make it easier for them to learn, that they don't need to go to school and wear formal uniform. Meanwhile, as many as 12.1% of students felt that they did not enjoy and experienced difficulties such as network constraints, data, and the devices used.

In the third statement, 69.7% of students felt difficulties during online learning process, while 30.3% of students did not find it difficult for the online learning process. The obstacles experienced by students included as 87.9% of students experienced signal and quota constraints, 3.0% of students experienced problems with communication media, and 9.1% of students experienced problems understanding the material being taught.

In the fifth question, students have done various online assessments, 75.8% in the form of daily tests, 78.8% in the form of independent assignments, and 27.3% in the form of group assignments. Then the media that is often used by teachers to conduct online assessments consists of 18.2% Google Form, 81.8% WhatsApp Group, 57.6% Google Classroom, 3% Quizizz, and 3% Youtube. This is due to the ease of use and access in using the media as a medium for online learning assessment.

In the seventh statement, 75.6% of students experienced problems in providing assessments online, while 35.3% of students found the process difficult. The obstacles experienced by students during online assessments were that 39.4% of students experienced problems with quotas, networks, and signals; 12.1% of students did not understand the material being tested; and 33.3% of students experienced a lack of time to complete the assessment.

In the ninth statement, 78.8% felt that there was a development of game rank-based learning assessments. This is because learning assessments have never provided direct value even though through the application. Meanwhile, 21.2% of students disagreed with the game rank-based learning assessment system, they felt that they were being chased by time so that it was not optimal in working on the questions. One of the game rank-based assessment developments is Quizizz. In the tenth question as many as 100% already know Quizizz because it is easy and fun to use. This is in accordance with the eleventh question, as many as 90.9% of students have done an assessment of learning physics using Quizizz while as many as 9.1% have never conducted an assessment of learning physics using Quizizz.

In the twelfth question, 60.6% agreed that there was a development of learning physics assessment using Quizizz because Quizizz is a practical, efficient application, and students can see and evaluate the results of their assessment directly. Meanwhile, as many as 39.4% of students felt that they did not agree if there was a development of assessment of learning physics using Quizizz because they felt that the time used on Quizizz was relatively short.

In the thirteenth question, as many as 33.3% of students wanted an appraisal system to use, as many as 30.3% of students wanted a practical system, 18.2% of students wanted the same assessment as before the pandemic, and 18.2% of students suggested deliver assignments to school. Thus it can be concluded that students need a physics learning assessment that can be used in online learning to support student needs. Physics learning assessments that can be developed are in the form of practical assessment applications, the time given to solve questions is not too short, and does not drain a lot of quotas. Therefore, the physics learning assessment requires a practical application in the form of Quizizz, where Quizizz has been known to students before and is easy to use.

3.3. Development of Assessment in Physics Learning Using Quizizz

The development stage of this physics assessment begins with determining the materials and competencies to be used. After that, it is continued with the making of the question grid consisting of indicators, implementation time, and also the cognitive domain of bloom taxonomy. The lattice for developing physics assessment on straight motion material is presented in Table 2.
Table 2. Lattices of Assessment Straight Motion Material

| No | Indicator                                                                                                                                                                                                 | Time (minute) | Cognitive Level |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|
| 1  | Determine objects in motion and objects at rest based on a reference point                                                                                                                                    | 2             | C3              |
| 2  | Calculate distance the object has moved                                                                                                                                                                       | 3             | C3              |
| 3  | Calculate displacement the object has moved                                                                                                                                                                    | 3             | C3              |
| 4  | Determine the velocity of an object in a certain trajectory and time                                                                                                                                               | 3             | C3              |
| 5  | Determine the time it takes for an object to move a certain distance at a certain velocity                                                                                                                     | 3             | C3              |
| 6  | Analyze the characteristics of object has constant velocity                                                                                                                                                     | 2             | C4              |
| 7  | Analyze GLB charts                                                                                                                                                                                             | 2             | C4              |
| 8  | Measuring the maximum velocity and total distance by an object moving in a straight order and moving in an orderly manner changes.                                                                       | 5             | C5              |
| 9  | Calculate the object’s final velocity                                                                                                                                                                           | 5             | C3              |
| 10 | Calculate the final position of an object from an acceleration equation                                                                                                                                         | 5             | C3              |
| 11 | Calculating the time an object has reached a certain point                                                                                                                                                      | 5             | C3              |
| 12 | Determine the average velocity that the object experiences                                                                                                                                                      | 5             | C3              |
| 13 | Analyze which part of the graph is experiencing acceleration                                                                                                                                                   | 2             | C4              |
| 14 | Analyze accelerated or slowed GLBB graphs                                                                                                                                                                       | 2             | C4              |
| 15 | Predicts the position of an object that is thrown vertically upwards at a certain speed and time.                                                                                                             | 3             | C5              |

The questions were developed with 15 items and 4 answer choices for each item in the cognitive domains of C3, C4, and C5. The scoring system using the quizizz that has been developed, it features random questions and random answers. Where later the number of questions and answer choices that will be obtained by students differ from one another and the possibility of being the same is small. It aims to avoid collaboration between students because this assessment is also carried out online. In each question the student does, after the student chooses the answer, a red or green indicator will appear where green means the student's answer is correct and red means the student's answer is wrong. The scores obtained by students are accumulated automatically and then the ranking of each student's acquisition appears so that for the next question students must be careful so that the ranking and grades do not decrease and can even overtake their friends. After students complete all the questions given, students can review the results they did and find out the correct answers to the questions that were answered incorrectly by students.

3.4. Validity of Physics Assessment Development Instruments Using Quizizz.

The validity of this study was used to test the feasibility of physics learning assessment using Quizizz which was tested on grade XI SMAN 2 Bangkalan students in straight motion materials. This validation is in the form of a questionnaire given to expert validation which aims to test the suitability of the media with the material. Expert validation questionnaire answers use the Likert scale, a variable described as a variable indicator. The points of assessment used for the instrument include the realm of construction, the realm of language, the domain of instructional, and the domain of technicality. The data obtained are quantitative and qualitative data. Quantitative data is obtained from Likert scale questionnaire data. The Likert scale used in this study consists of 4 categories that are very good, good, quite good, and less good. As for the criteria of validity of poll data using 5 categories that are very good, good, quite good, less good, and very less good. Qualitative data is obtained from
instrument validation results in the form of suggestions and inputs as well as validation conclusions from both validators.

**Table 3. Result of Validation**

| Category | Aspec   | Percentage (%) | Validation Criteria |
|----------|---------|----------------|---------------------|
| Content  | Construction | 91.67          | Very good          |
|          | Language      | 79.17          | Good               |
| Media    | Instructional | 79.17          | Good               |
|          | Technicality  | 7188           | Good               |
| Average  |          | 80.47          | Good               |

Based on the results of the validation, it shows that the suitability between the material and media provided is good or can be said to be suitable for use with an average percentage of 80.47%. The data obtained from expert validation will be analyzed based on the domains. Domain-based analysis aims to determine whether certain sections need revision. The conclusion of the validation results of both validators is that the physics learning assessment instrument using quizizz is worth using with revisions. Instrument revisions will follow suggestions and feedback from both validators. The results of the suggestions and input included that they were overall good based on the realm of construction. In the realm of language, one of the validators suggested checking the grammar according to EBI. In the instructional realm, the two validators considered it good. Meanwhile, in the technical realm, the two validators considered that it had increased, only to suggest that more resolution of the images and graphics used were added to make them appear clearer.

3.5. Implementation of Physics Assessment Development Instruments Using Quizizz.

This implementation is carried out in class XI IPA 1 with total of 33 students. The diagram below shows the results of student assessments using quizizz.

![Diagram of Student Assessment Results](image)

Based on the Figure 2, it can be clearly known that the questions consists of difficult, medium, and easy categories. That can be proven by the number of students who answer wrongly in each question. Some questions are answered incorrectly by fewer than 5 students, more than 5 students and there is one question that is even answered wrong by more than half of the total student. In the diagram it can also be known that the actual understanding of students' knowledge of straight motion...
materials in grade XI MIPA 1 SMAN 2 Bangkalan is almost the same overall but different for each subject matter.

The results of students' scores in this study are distinguished into 2 categories. The first category is score that obtained directly through quizizz and the second category is score that calculated manually to know the effectiveness of using quizizz in learning activities. For score that obtained through quizizz, the system is students will get points when the answer is correct and will get additional points according to how long it takes them to solve the question. The less time he needs, the additional points will be bigger and vice versa, the more time he needs, the additional points will be smaller. But if the student give the wrong answers with a short time then the student will not get points. This systems are sometimes profitable and also detrimental at the same time. The advantage is that students can be motivated to learn more vigorously because the work of the question is limited by time. Meanwhile, based on the needs analysis questionnaire that has been spread, the disadvantage is that there is time to work, sometimes students are nervous and not concentrated so that the results of student work are not optimal. What must be considered in order to minimize disadvantage and increase the advantage is to give the right time for each question item. The teacher must be able to estimate the time to read the questions, the time to work on them, and the time to choose the answer properly so that the ideal total time for solving the questions is obtained.

3.6. Effectiveness of Using Quizizz as an Alternative of Physics Learning Assessment

This analysis aims to determine whether the development of learning assessment using quizzes is effectively applied in physics subjects and whether it can improve student learning outcomes. The effectiveness of using quizizz is obtained from the analysis of the results of student assessments where the results of student grades in this study are divided into 2 categories. The first category is score that obtained directly through quizizz and the second category is score that calculated manually to know the effectiveness of using quizizz in learning activities. For effectiveness, the students' manual score were used which were obtained using equations

\[
Score = \frac{\text{number of correct answers}}{\text{number of questions}} \times 100\%
\]  

Based on the acquisition of student assessment results, there are 24 students who get results above the Minimum Completeness Criteria (MCC) and 9 students who get results below the MCC. MCC for physics subjects in class XI MIPA 1 SMAN 2 Bangkalan of 75. Based on these data, the percentage of students passing classically \((p)\) was 72.7 % with the academic completeness assessment criteria presented in the table below.

| Interval     | Classification |
|--------------|----------------|
| \(p > 80\)   | Very Good      |
| \(60 < p \leq 80\) | Good          |
| \(40 < p \leq 60\) | Quite Good    |
| \(20 < p \leq 40\) | Less Good     |
| \(p \leq 20\) | Very Less Good|

Based on the academic completeness assessment criteria and also the results of the classical student passing percentage \((p)\), it can be seen that the physics learning assessment using quizizz is effectively applied and can improve student learning outcomes with good categories. In addition, in the results of student learning assessments using Quizizz as an assessment developed instrument experienced a significat increase so that the criteria for improvement were obtained, namely an average of 12 correct answers. The completeness value of the student assessment results for knowledge competency is 80 % with an average score of 80.8 and a score at Quizizz of 11794.06.
3.7. Students Response

After doing the Quizizz assessment, the researcher gave the student questionnaire responsibility. Analysis of students response was carried out by collecting questionnaire data to ask 33 respondents. The response questionnaire was conducted on September 21, 2020. Each respondent will be given an Google Form containing statements as shown in Table 5. The questionnaire result data obtained can be seen in Table 5 and Figure 3.

| No | Statements                                                                 | Response |   |   |
|----|-----------------------------------------------------------------------------|----------|---|---|
|    |                                                                             | Agree (%)| Disagree (%) |
| 1. | Quizizz is an alternative assessment that is appropriate during a pandemic era | 78.8     | 21.2 |
| 2. | Learning assessment activities using Quizizz are easy to use during a pandemic era | 75.7     | 24.3 |
| 3. | The learning assessment system using Quizizz is very interesting to be implemented in physics material. | 47.5     | 52.5 |
| 4. | The learning assessment system uses practical Quizizz to be implemented in physics material. | 45.5     | 54.5 |
| 5. | Quizizz provides graphics and images that are clear, easy to understand and have good resolution. | 63.6     | 36.4 |
| 6. | The questions used are easy to understand and do not cause dualism of understanding | 69.7     | 30.3 |
| 7. | I have had no trouble using Quizizz as a learning assessment platform. | 42.4     | 57.6 |
| 8. | I don't feel bored when I use Quizizz | 66.7     | 33.3 |
| 9. | I stay motivated to learn when doing assessments using Quizizz. | 75.8     | 24.2 |
| 10. | I keep trying my best to work on the problems using Quizizz. | 90.9     | 9.1 |
|    | **Mean**                                                                   | 65.66    | 35.8 |

![Diagram of Student Response Questionnaire Results](image)
Based on the table above, it is known that the average respondent score for agreed statement was 65.66 points and 35.8 points for disagree statements. The value is then converted to a point scale.

\[
\text{Point Scale} = \frac{65.66}{100} \times 6 = 3.9 = 4
\] (2)

This value is then matched with the value interval [18] as in Table 6.

| No | Point Scale | Alphabet | Information          |
|----|-------------|----------|----------------------|
| 1.  | 1           | F        | Strongly disagree    |
| 2.  | 2           | E        | Disagree             |
| 3.  | 3           | D        | Slightly disagree    |
| 4.  | 4           | C        | Slightly agree       |
| 5.  | 5           | B        | Agree                |
| 6.  | 6           | A        | Strongly agree       |

Based on the table above, it can be concluded that the majority of students responded positively to using and development of Quizizz as an alternative assessment during the pandemic. This is because the mean of the respondents' data is based on the point scale are 4 points, which means that the development of Quizizz is assessed as straightforward to agree by the students.

4. Conclusion

The conclusion of this study is that students need a physics learning assessment that can be used in online learning to support the need of students. The physics learning assessment is in the form of an assessment application called Quizizz which is practical and fun. The development of assessment of physics learning using quizizz on straight motion material is feasible and can be used as an alternative assessment system during a pandemic like today. This assessment system using quizizz is said to be effective in the learning process and can improve student learning outcomes. Besides that, the students' responses when working on the questions using the quizizz stated a positive response.

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