



Development of Quizizz-based Assessment Instruments for Grade IV Elementary Students

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ABSTRACT

The present study sets out to design an assessment tool using Quizizz to evaluate understanding of the values and meaning of Pancasila among fourth-grade elementary students. The study applied the ADDIE development framework, which consists of five key steps: Analysis, Design, Development, Implementation, and Evaluation. According to assessments by two language experts, the instrument was deemed highly valid and dependable. The first expert assigned an average score of 81%, while the second gave 90%, resulting in an overall average of 85%, placing the tool in the "very valid" category. Additionally, an evaluation by an assessment specialist produced a validation score of 94%. The instrument's reliability was tested through the Quizizz platform with 26 fourth-grade students, yielding Cronbach's Alpha values of 0.774, 0.753, and 0.734. As all scores surpassed the accepted threshold of 0.7, it can be concluded that this tool is proper to use in assessing students' comprehension of Pancasila's values and significance.

Keywords: *assessment instruments, ADDIE development, quizizz, elementary students*

Submitted	Accepted	Published
26 June 2025	19 July 2025	30 July 2025

Citation	:	Wahidah, M., & Ramadan, Z.H. (2025). Development of Quizizz-based Assessment Instruments for Grade IV Elementary Students. <i>Jurnal PAJAR (Pendidikan dan Pengajaran)</i> , 9(4), 537-545. DOI: http://dx.doi.org/10.33578/pjr.v9i4.201 .
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INTRODUCTION

The use of technology in education has become an important thing in today's era. Educational technology is a combination of teaching methods, learning processes, and technological tools that can help solve problems in the world of education. According to Lailan,(2024) educational technology is part of educational science that emerged due to the development of technology. When technology began to be used in learning activities, that's when the science of educational technology was born. Its development first occurred in developed countries that had previously developed in terms of technology. Now, Information and Communication Technology (ICT) has a big role in the world of schools. One example is the use of multimedia and the internet during the learning Learning is a process of exchanging ideas between teachers and students. Teachers deliver lessons, and students listen and try to understand them. The learning process should run according to plan, from the beginning to the final assessment. To make learning more interesting and easy to understand, teachers can use learning media that support students in understanding the lesson. Learning success depends heavily on the teacher. Teachers not only deliver material, but also play an important role in making learning meaningful and enjoyable.

From the researcher's interview with the fourth grade teacher, it is known that the school has started using the independent curriculum. The school has quite complete facilities such as projectors, chromebooks and other learning support media. However, teachers have not been able to maximize the use of the facilities and infrastructure that have been provided, this is due to limited knowledge and time in making media in lessons. The results of the interview showed that students still do not understand and cannot distinguish the meaning of the Pancasila principles. In the assessment process, teachers only use books and LKS, in addition, teachers experience obstacles such as students who are noisy, cheating, and collaborating with their friends

so that the results of student assessments in learning the values and meaning of Pancasila are still low, this makes teachers carry out remedial work first to achieve maximum scores. then in Pancasila education lessons, teachers rarely use learning media, resulting in a lack of student interest in learning.

According to Selatan, (2023) Pancasila lessons are important and must be taught at all levels of school. But there are still students who don't like and are not interested in learning this subject. This lesson is very boring for most students. Genisa et al., (2025) the learning that is carried out usually follows a monotonous conventional learning model using classroom learning. students are very enthusiastic and can increase their learning motivation if learning is assisted by interesting technology-based assessment media. This can create a conducive and interactive class in Pancasila Education (PKN) lessons. In line with Genisa et al., (2025) based on evidence collected from various studies, it was concluded that interactive technology significantly increases the interest of elementary school students in studying Pancasila education. The use of digital technology has the potential to increase student engagement and satisfaction in their learning experiences. However, it is very important for teachers to consider certain applications related to infrastructure and facilities when implementing this digital technology. Educators can create interactive teaching resources by utilizing websites or applications on their devices.

The process of taking grades is a fundamental part of learning activities and cannot be separated from the teaching process itself. According to Agustina (in Sabila et al., 2023) assessment is a step to find out how much value a process has. Warman et al., (2023) explain that assessment is an important part that uses regular scientific methods to examine, describe, and weigh the results of an activity by looking at the factors of success and failure. This is done in order to obtain valid and reliable information about the achievements of a program. Meanwhile, Jayadi dkk, (2022) wrote that assessment in general is a step that is carried out with a system to give value to something, such as a program, decision, activity, or person, using predetermined measures and criteria. According to Mayer (in Nurhayati et al, (2020) students will grasp the contents of the lesson more quickly if the information is given in various forms, such as images, text, and sound. In this context, media that can interact directly with students not only makes them more interested, but can also train their deep thinking skills, imagination, and cooperation. So that assessment is a well-organized process to give a value to an activity using certain measurements. Assessments that are carried out properly can provide clear and useful data, so that they can help improve teaching methods. However, if the assessment is carried out carelessly, the results can be wrong and cannot be used to make learning better. As a result, educational goals will not be achieved properly.

Quizizz can be used as a tool to assess learning outcomes in class. According to (Halimat et al, (2023) quizizz is a kind of easy-to-use learning application, which can be opened via gadgets or computers. According to Citra et al, (2020) quizizz is an educational game that contains interactive quizzes. Meanwhile, Rahmania et al, (2020) quizizz is an online game-based platform that can be used by teachers in the world of education which can help make learning more interactive and enjoyable. The quizizz application is a platform that displays questions and quizzes with an attractive and varied appearance so as to create an atmosphere of being in the game. Quizizz is a tool to measure student understanding in a fun and enjoyable way. This application can be used together, is free, and can be opened via cellphone, tablet, or computer. Can be run via an Android application or browser such as Chrome. To join the game, students only need one device per person or per group. No need to register an account, just enter the game code to start. According to Salsabila (in Situmeang et al., 2022) Quizizz has the advantage of being easy to use. In addition to helping with learning, this tool can also be used to test student understanding. In it there are data and numbers that can show the extent to which students understand the contents of the lesson, and that can be a benchmark for assessing the overall learning process. Meanwhile, some of the weaknesses of this quizizz application, according to Abdullah et al., (2023) the quizizz application has the following weaknesses: 1) Can add new screen displays and allow students to open new tabs. 2) Controlling the opening of new tabs by students. 3) Implementation takes a long time and has limitations, which means that some application features must be developed again. 4) Unstable network conditioning interferes with the use of the application.

Seeing the problems that have been explained previously, this research was conducted with the aim of compiling a quizizz-based assessment tool for the subject of Pancasila values and meaning for fourth grade elementary school students. The focus on PKN lessons was chosen because during the initial observation, it was found that many students did not understand the contents of the material well, so that their. Learning scores were relatively low. In addition, teachers also experienced obstacles when conducting assessments in class. This research is considered important because with the existence of a quizizz-based measuring tool, it is hoped that it can be another option to help solve obstacles in the assessment process. In addition to making teachers' tasks easier, this tool is also expected to be able to boost student understanding and improve learning outcomes, especially in the material on pancasila values and meaning.

METHOD

This study uses a development method with the ADDIE model, which in its implementation combines qualitative and quantitative approaches. The way to collect information in this study is done through two main techniques, namely direct interviews and validation assessment sheets. Interviews have been conducted by researchers with grade IV teachers as sources to explore facts in the field that are in accordance with the problems being studied. The validation data are then processed to provide a comprehensive picture of the media being prepared. To process the data, two approaches are used: qualitative, namely from the results of questions and answers with teachers and input from experts and quantitative, which comes from the scores of the validation sheet results by language experts and assessment experts. This assessment uses a Likert scale and its reliability is tested by calculating reliability. The main result of this study is a learning measurement tool or assessment instrument based on the quizizz platform for the material on the values and meaning of Pancasila, which is intended for grade IV elementary school students. The following are the steps in the research procedure:

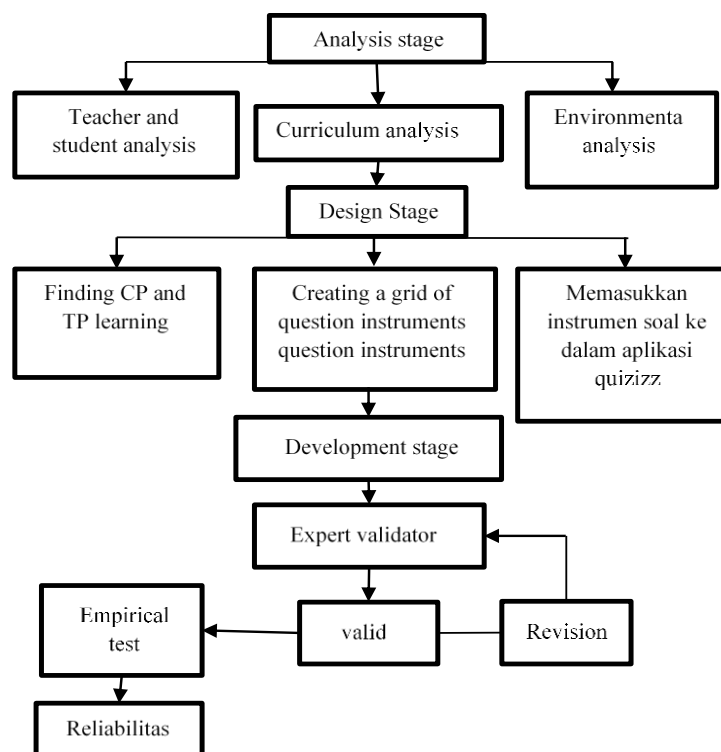


Figure 1. Research procedures

According to Sugiyono, the Likert scale is a tool to assess the views, responses, or beliefs of a person or group of people towards a social event. Below is the division of the assessment levels in the validation sheet:

Table 1. Validation sheet assessment categories

scale	scorer	scale range
4,20 - 5,00	5	Strongly agree
3,40 - 4,19	4	Agree
2,60 - 3,39	3	Quite agree
1,80 - 2,59	2	Disagree
1,00 - 1,79	1	Strongly disagree

(Source:Sugiyono dalam (Muhammad dkk.,2024)

Calculating the results of the expert validation sheet with a Likert scale using the Sugiyono formula (inAfifah et al, 2023), namely:

$$V = \frac{TSe}{TSh} \times 100\%$$

Information :

V : Validation

Tse : Total validity test from validator

TSh : Total maximum expected score

Validation is carried out to determine the integration of the statement items used in the quizizz-based assessment media instrument. Validation aims to obtain valid results from experts in their fields. Then to determine the feasibility of the quizizz assessment media based on the following provisions:

Table 2. Level of Validation and Product Revision

Presentase	Valid Criteria
76-100%	Very Valid
56-75%	Valid
40-55%	Less Valid
0-39%	Not Valid

(Source:Agustiana dalam ((NurAini dkk, 2019))

RESULTS AND DISCUSSION

This study created an assessment tool in the form of questions created using the quizizz application, specifically for the material on the values and meaning of Pancasila for grade IV elementary school students. The first step begins by finding out the problems that occur in the class. Then the researcher designs the questions before being included in quizizz. After that, the questions are checked by experts to ensure that the content is good. Then, the researcher tries the questions on 26 grade IV students. From the results of the trial, the researcher calculates whether the questions are reliable or not. The following are the steps in creating an assessment tool with quizizz for the material on the meaning and values of Pancasila for grade IV elementary school:

Analysis

At the analysis stage, teachers experience obstacles in the assessment process in Pancasila education lessons such as students who are noisy, cheating, and collaborating with their friends. Teachers have also not maximized the use of facilities available at school. Then the students' learning outcomes are quite low,

requiring teachers to carry out remedial work first. This situation arises because students have not really grasped the meaning and content of the lessons about the values and meaning of Pancasila. The curriculum used by the school is an independent curriculum, then the learning environment has quite complete facilities. The school has a projector, chromebook and other supporting facilities.

Design

The stage of making a design for the quizizz assessment media. Researchers first need to know the learning outcomes (CP) and learning objectives (TP). Determining learning outcomes is an initial indicator for developing assessment questions.

Table 3. CP and TP Material on the Values and Meaning of Pancasila

Learning outcomes (CP)	Learning Objectives (TP)
Students demonstrate the meaning of the Pancasila principles and their application in everyday life.	<ul style="list-style-type: none"> Students are able to demonstrate the meaning of the Pancasila principles in everyday life. Students are able to identify the meaning of the Pancasila principles in everyday life. Students are able to explain the meaning of the Pancasila principles in everyday life.

(Source: CP and TP from research school)

The next step taken after knowing the Learning Outcomes (CP) and Learning Objectives (TP). The researcher made a grid of questions that were developed from the CP and TP of the material on the values and meaning of Pancasila. The researcher made fourteen assessment instrument questions with ten multiple choices, five matching, two fill-ins and three essays. In the fill-in and essay questions, the researcher added pictures as illustrations in the application of the values and meaning of pancasila.

Development

The development stage of activities carried out after creating assessment instrument questions is continued by testing the validity of the products that have been made. The assessment is carried out by filling out the validation sheet by each expert, namely a language expert and an assessment tool expert, which number four people, two people in each field.

Table 5. Results of Language Expert Validation

Validator	Empirical Score	Score Max	Presentation	Empirical Score	Score Max	Presentation	Average	Criteria
Validator 1	30	50	70%	46	50	92%	81%	Very Valid
Validator 2	45	50	90%	-	-	-	90%	Very Valid
Average							85%	Very Valid

From the results of the examination by two language experts, the first validator conducted the assessment twice because there were improvements, such as changing the writing of numbers to letters and increasing the answer choices from three to four. In the first assessment, the score obtained was 70% and was included in the "valid" category. After the revision, the value increased to 92% and was included in "very valid", so that the average of the two assessments was 81%, which was also categorized as "very valid". The second validator did not provide any suggestions for improvement. The final result was scored 90% and was also included in the "very valid" category. If averaged from both, the result was 85%, which indicates that this instrument is in the "very valid" category.

Table 6. Assessment Validation Results

Validator	Empirical Score	Score Max	Presentation	Criteria
Validator 1	58	60	96%	Sangat Valid
Validator 2	55	60	91%	Sangat Valid
Average			94%	Sangat Valid

The validation results of the assessment conducted by two validator experts on the assessment instrument for the material on the values and meaning of Pancasila that was developed obtained an average figure of 94% with a rating of "very feasible". Therefore, it can be concluded that the assessment instrument is feasible to be used in the process of assessing the material on the values and meaning of Pancasila with the help of quizizz. After conducting validation by language experts and assessments, the researcher entered the assessment instrument into the quizizz application.

Then the researcher conducted an empirical test on grade IV SDN students which was conducted on students in one class with a total of 26 students. This test consists of 14 questions consisting of multiple choice questions, matching, fill-in and essay. For the points for each question depending on the form of multiple choice and matching questions, the amount is 1 point for each question, the fill-in is 2 points and the essay is 3 points. After the questions are worked on by the students, the next step is to see the results of the students' scoring and then calculate the reliability of the instrument.



Figure 2. View of the Assessment Instrument in the Quizizz Application



Figure 3. Student Trial

In this study, the level of significance of cronbach's alpha reliability used > 0.70 according to Zuhri et al., (2024) the test is considered reliable if the reliability coefficient exceeds 0.70. By using IBM SPSS V 27 for windows software to calculate it. The following are the results of the reliability test of the assessment question instrument:

Table 7. Multiple Choice and Matching Reliability Results

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.774	.828	11

(Source: SPSS version 27)

From table 7. Shows the results of the reliability of the assessment instrument in the form of multiple choice with Cronbach's alpha $0.774 > 0.70$ which means that the instrument is reliable.

Table 8. Reliability Results of the Entries

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.753	.775	3

(Source: SPSS version 27)

From table 8. Shows the results of the reliability of the assessment instrument in the form of multiple choice with Cronbach's alpha $0.753 > 0.70$ according to the table above, it states that the instrument is reliable.

Table 9. Essay Reliability Results

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.734	.709	3

(Source: SPSS version 27)

From table 9. Shows the results of the reliability of the assessment instrument in the form of multiple choices with Cronbach's alpha $0.734 > 0.70$ according to the table above, indicating a reliable instrument. From the three reliability results, it can be concluded that the development of a quizizz-based assessment instrument is reliable, which means "worthy of use".

Based on previous research conducted by Nur Aini et al., (2019) the criteria of practicality, the hot-based e-quiz assessment instrument is suitable for use as an assessment instrument, especially in mathematics lessons to achieve learning objectives. Then in the study of (Putri et al., (2023) using quizizz to assess learning is considered suitable, because the appearance is attractive, the language used is easy to understand, and the questions are in line with the content of the lesson.

CONCLUSIONS AND RECOMMENDATION

From the results of the research conducted, it can be concluded that the quizizz-based assessment instrument is "suitable for use" in assessing learning the material of Pancasila values and meanings for grade IV elementary schools. The quizizz-based assessment instrument is recommended for elementary schools that have complete facilities to use the quizizz-based assessment instrument.

Acknowledgment

1. Thank you to Father Herman, Mother Erliati, and extended family for all their prayers and support.

2. To myself, who has been strong and continued to move forward until this research is completed.
3. Thank you to Mr. Zaka Hadikusuma Ramadan, S.Pd., M.Pd., for his guidance and time during the process of compiling this research.
4. Thank you to all lecturers of PGSD FKIP Universitas Islam Riau for the knowledge that has been given.
5. To the principal and teachers of SDN 85 Pekanbaru, I would like to thank you for your permission and assistance during the research process.

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