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Teacher Perceptions of Making Interactive Questions Using the Quizizz Application In Physics Learning

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Abstract

This study aims to see teacher perceptions of making interactive questions using the Quizizz application. This research was carried out using a training approach which was carried out for 2 days and added with independent assignments. The sample used was 21 people, with the sampling technique using random sampling. Data collection using a 4-point Likert scale questionnaire consisting of 12 items was carried out at the beginning of the activity and after training—data analysis using descriptive and inferential statistics. The results showed that Science Teachers (Physics) in junior and senior high schools in Sabang City had a perception of the Quizizz application in learning 86.31%, which was classified as very good. Teacher perceptions of knowledge related to Quizizz applications in learning amounted to 84.82%, classified as good. Teacher perceptions of skills in using the Quizizz application in education amounted to 83.04%, classified as good. Teacher perceptions of attitudes towards using the Quzizz application in learning amounted to 91.07%, classified as very good. Teachers have a positive perception of being able to apply this Quizizz application in education because teachers have been equipped with the knowledge and skills gained in training activities, and teachers have a positive attitude towards using this application in the learning process.

INTRODUCTION

The educational paradigm in this era has been forced to shift from direct learning in the classroom to online-based distance learning. The covid-19 pandemic is an issue that causes this sudden shift in the education paradigm [1]. However, technology that continues to develop occasionally does not make it a barrier for education to change to adapt to the current conditions of the co-19 pandemic [2]. Technological advancements help all aspects of life to continue even if they cannot interact directly in the same place [3], including education. Learning platforms continue to be developed to become a medium for learning and communication between students, teachers, and peers to continue the learning process. Although the learning process cannot be carried out directly at school, with the advancement of technology today, learning can still be carried out in different places using a learning platform and requires an internet network [4].

The change was so sudden that people who used to interact directly with each other could no longer gather in large numbers. Public places where many people could gather were closed due to the high risk of virus transmission [5]. Schools are one of the public places that are banned from opening [6]. However, education must continue because education is the most critical aspect of life (National Research Council., 2012), so there is an appeal from the government to shift learning to distance learning systems / online [6]. Almost all Indonesians remember using a conventional learning system,

namely face-to-face learning activities in schools with several students from 20-40 students per class. Students and teachers used to interact directly to fulfill their learning needs every day. Now they can no longer interact directly, but their learning needs must still be met, so they can adapt to a new learning system using a unique learning approach [7].

Learning evaluation also uses a new system in this era. The measurement of student learning success is measured online. However, not many teachers generally evaluate learning by creating online exams. Teachers only give assignments to students to do independently at home and collect within a specific time frame [1]. As a result, there is a lot of cheating in completing the tasks given by the teacher. A system like this cannot be maintained because it cannot measure students' abilities validly; a solution must be found immediately to measure learning outcomes using other methods.

Quizizz application is a web tool in the form of an online quiz game that can be used as a formative assessment in learning [8], [9]. Exams using the Quizizz application make students happier and more enthusiastic in solving questions, and learning outcomes can be measured validity because each question gets different questions, and the time to do it can be adjusted according to the difficulty level of the question [10]. By utilizing this application, it is hoped that teachers can measure student learning outcomes validly and students also continue to be motivated to improve their learning outcomes. Hence, teachers need to create exam questions using this application.

Therefore, training on making interactive questions using the Quizizz application needs to be carried out, and teachers' perceptions of using this application need to be known. Teacher perceptions related to knowledge, skills, and teacher interest in utilizing this application can be known so that the application of the results of this training can be measured in the schools of the respective trainee teachers. Thus, it can be seen that using this application as a medium for making interactive question instruments during this pandemic is an effort to increase the validity of evaluation results and increase student learning motivation.

RESEARCH METHODS

The study used a quantitative approach, survey method, and Pre-experiment design implementation. The target population is all junior high school science teachers and high school physics teachers in the province of Aceh. Still, due to limited time funds and time, the population selected only teachers in junior/senior high schools in Sabang City, as many as 21 people. The data collection instrument used a 4-point Likert scale questionnaire with 12 items to measure teacher perceptions of cognitive, psychomotor, and attitudinal domains towards using the Quizizz application in making interactive question instruments in science learning (Physics) in SMP / SMA Sabang City.

Research activities were carried out in one local of 21 teachers using the pre-experiment method. Before the research, an initial questionnaire was given to get initial perceptions. Then proceed with treatment in the form of training for 2 days starting from 8:30 to 16:30 every day. After that, respondents were asked to fill out a final stage questionnaire to obtain information after being treated with training activities on using the Quizizz Application in making interactive question instruments in science learning (Physics) in SMP / SMA Sabang City. The data were analyzed using descriptive statistics to determine the percentage and category of the domain of knowledge, skills, and attitudes of respondents using the equation:

$$P = \frac{\text{Total score for each item}}{\text{Max score}} \text{ x } 100\ \%$$

Furthermore, the percentage of respondents' answers before and after the training was recapitulated from each domain of knowledge, skills, and attitudes. Then the percentage results are compared with the criteria for interpreting the training results to determine the category of measurable percentage results [9] by referring to the following criteria table:

Table 1. Interpretation table of training results

No.	Score obtained	Criteria
1	86-100	Excellent
2	76-85	Good
3	60-75	Fairly Good

No.	Score obtained	Criteria
4	55-59	Not good
5	≤54	Poor

RESULTS AND DISCUSSION

Before implementing training activities for making questions using the Quizizz application attended by 21 junior and senior high school teachers in Sabang City, participants first measured their perceptions of the Quizizz application. From the aspects of teacher knowledge, skills, and attitudes toward the Quizizz application, the following results were obtained:

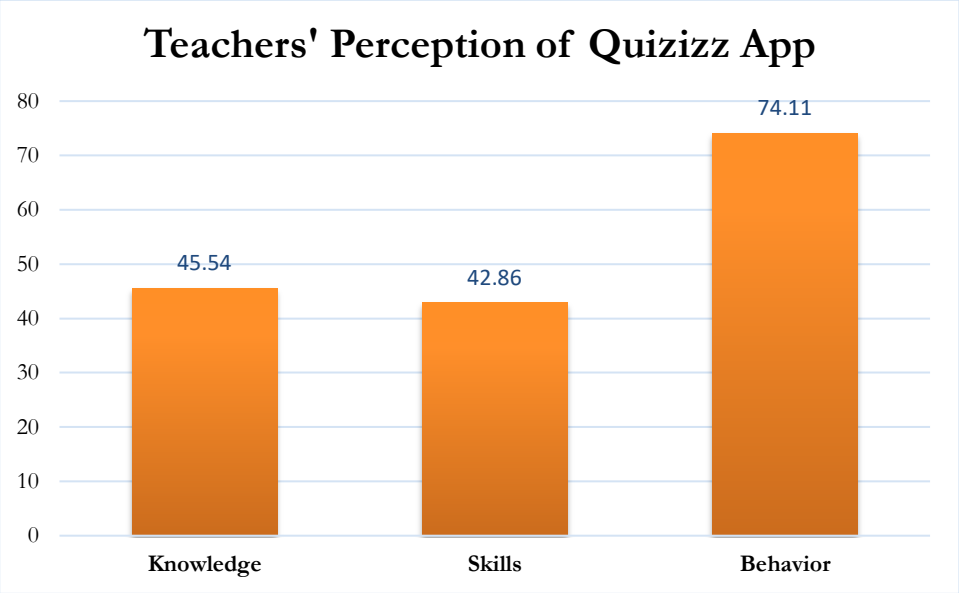

Figure 1. Teachers' Perception of Quizizz App Before Training

From the graph above, it can be seen that the teacher's insight regarding the Quizizz application is only 45.54%, and his skills in using the Quizizz application are 42.86%. This data shows that teachers' knowledge and skills of the Quizizz application are poor. Knowledge and skills are interrelated, so many teachers have never used online applications because they do not know what functions, benefits, and how to use them—an obstacle for teachers to use in learning [10]. If there is already knowledge related to the Quizizz application, teachers can try it. However, some teachers already know about Quizizz but have never used it in learning. The reason for one of the teachers who already knew the Quizizz application but had not used it was that when attending seminars related to Quizizz, they were only involved as students without being allowed to act as a teacher who created questions and distributed them to students so that the teacher was only able to receive questions and work on them in the Quizizz application.

The attitude aspect shows that the teachers' interest in the Quizizz application is 74.11%, which is quite reasonable. Teachers who already know the Quizizz application have an excellent attitude towards this application; the desire to try and learn more about it can be seen from the percentage results above. However, the confidence to use this application in learning is not yet high because the teachers do not perceive the understanding and skills well. Knowledge and abilities affect learners' attitudes toward education [11]. The results above show that teacher perceptions of the Quizizz application are still poor from the knowledge and skills aspects but are pretty good for teacher attitudes towards this Quizizz application.

After being given training for 2 days, 21 training participants who were junior and senior high school teachers for science and physics subjects in Sabang City experienced an increase in their perception of the Quizizz application after being measured in knowledge, skills, and attitudes. A comparison of the results of teacher perceptions of the Quizizz application before and after training activities can be seen in the table below:

Table 2. Comparison of Teacher Perception Results of the Quizizz Application

No	Aspects	Percentage of Teacher Perceptions of the Quizizz Application (%)	
		Before Training	Post-Training
1	Knowledge	45,54	84,82
2	Skills	42,86	83,04
3	Behavior	74,11	91,07

The data above shows increased teacher perceptions of knowledge, skills, and attitudes toward the Quizizz application. There was an increase to 84.82% in the knowledge aspect, where the teacher's perception of the knowledge aspect was classified as good. Information provided in the training activities is a new insight for teachers regarding evaluating student learning outcomes online using the Quizizz application; knowledge will develop from not knowing to know due to the transfer of information directly or indirectly [10] and in this case, the transfer of information through training activities.

Data on the improvement of teachers' perceptions before and after the training can be seen in the graph below:

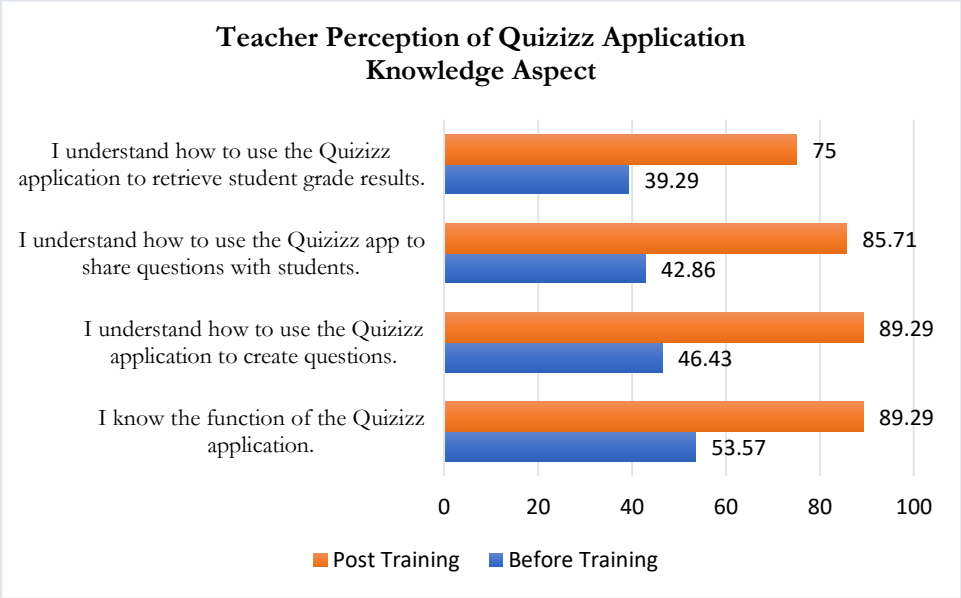

Figure 1. Teachers' perceptions of the Quizizz application before and after training from the aspect of knowledge

From the data above, 89.29% of teachers already know the function and how to use the Quizizz application to create questions, and 85.71% have understood how to share questions made to students through the Quizizz application. However, the lowest increase is in understanding how to download student grades from the Quizizz application, where the teacher's perception is only 75%, meaning that 25% of teachers do not know how to download student grades after working on questions. The delivery of material for the download of student results is in the last session, where the teacher has experienced a decrease in concentration. Hence, information on downloading student exam results through the Quizizz application is not maximally absorbed. Supported by suggestions from several trainee teachers who mentioned that the time provided for this training activity was still insufficient, the teachers hope there will be further training activities to strengthen the teachers' expertise in making online student learning evaluation instruments using this Quizizz application.

Improved perceptions occur not only in the knowledge and skills aspects, where teacher skills in making questions, distributing them to students, and downloading student exam results are practiced directly by each participating teacher. The activity of teachers sharing links to exam questions that students will work on in Whatsapp groups created explicitly for training activities, as can be seen in the figure below:

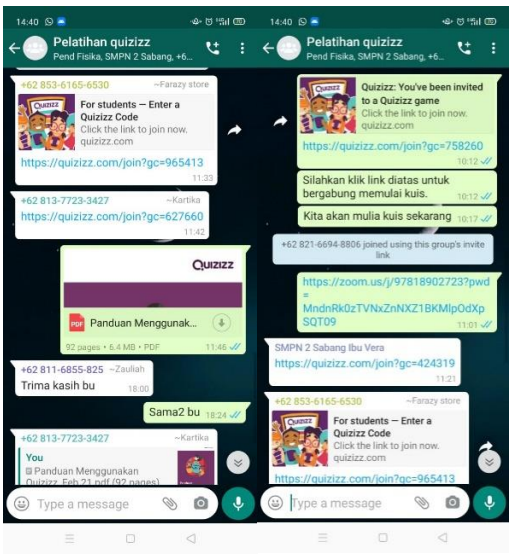

Figure 2. Activities to improve teacher skills in using the Quizizz app in learning

Direct practice in using the Quizizz application by acting as a teacher causes teachers to have a perception of an increase in the skills they have in using this Quizizz application after participating in training activities, as shown in the following graph:

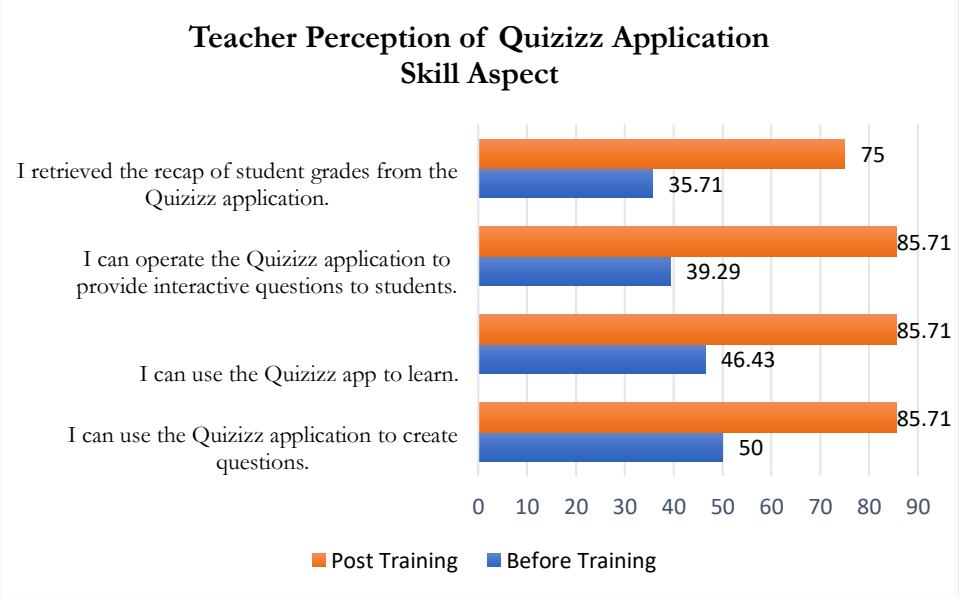

Figure 3. Teachers' perceptions of the Quizizz application before and after training from the aspect of skills

In the beginning, before the training activities were carried out, the teacher's perception of his skills in creating questions using the Quizizz application was only 50%, the skill of using the Quizizz application in learning was only 46.43%, the skill of sharing questions with students through the Quizizz application was only 39.29%. The skill of downloading student exam results from the Quizizz application was only 35.71%. Before attending the training, teachers' perceptions of their skills in using the Quizizz application were poor. Teachers felt they lacked skills in using this application, from making, distributing, and applying questions in learning. However, after attending the training, the teacher's perception increased to 85.71% for creating queries, distributing questions, and applying them in learning using this Quizizz application, where the teacher's perception of his skills using this Quizizz application was classified as very good. In downloading student exam results, it increased to 75%, classified as having a pretty good perception.

Based on the data above, teachers' perceptions of their skills in using the Quizizz application increased after attending training for 2 days. After the teacher gets information about the Quizizz application, the teacher immediately practices utilizing this application as a teacher where the teacher

can create questions, distribute questions to students, and download the exam results. The whole series of activities in learning that might be done in class are tried directly by the teacher in this training activity. With the activities of the teacher directly trying his role as a teacher using this application, the skill of operating this application increases because effective learning is when students can be directly involved in the learning process [9].

Improving teachers' perceptions of the Quizizz application from the aspects of knowledge and skills gives teachers a positive attitude toward this application. Before the training, teachers' attitudes were quite positive towards this application; some teachers believed and believed that this application was handy and easy to use in learning. However, only 32.14% of teachers are confident about using it in learning, as can be seen in the following graph:

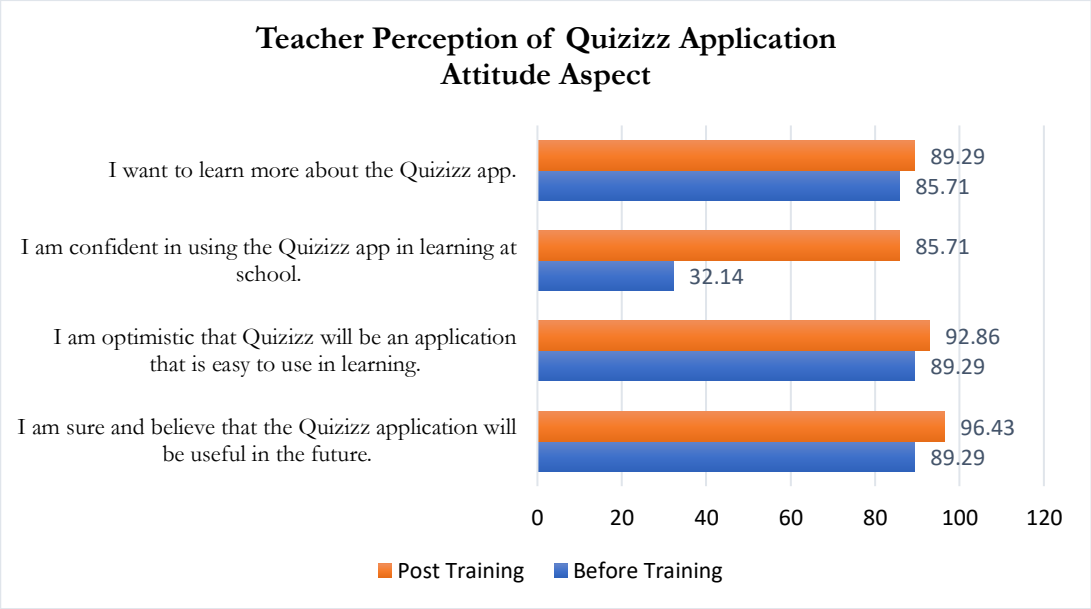

Figure 4. Teachers' perceptions of the Quizizz application before and after training from the attitude aspect

After the training activities, teacher confidence increased to 85.71%. A teacher's perception of knowledge and skills in using this Quizizz application greatly influences his attitude toward utilizing this application [12]. Therefore, knowledge and skills need to be developed to form a positive attitude from students in responding to a learning process. Apart from the results of teacher responses through questionnaires, teachers' positive perceptions of this application can be seen from the attitude of teachers following up the use of this Quizizz application in learning at school, where several teachers contact the resource person.

Based on the data above, the average teacher's perception of the Quizizz application in learning is 86.31% which is classified as very good. Teacher perceptions of their knowledge related to the Quizizz application in education amounted to 84.82%, classified as good. Teachers' perceptions of their skills in using the Quizizz application in learning are 83.04% which is classified as good. Teachers' perceptions of their attitude towards using the Quzizz application in education amounted to 91.07%, classified as very good. Teachers have a positive perception of being able to apply this Quizizz application in learning because teachers have been equipped with the knowledge and skills gained in this training activity, and teachers have a positive attitude towards using this application in the learning process.

CONCLUSIONS

Science (Physics) teachers in junior and senior high schools in Sabang City positively perceive making questions using the Quizizz application in science and physics learning after attending training related to making questions using the Quizizz application. Perceptions of Knowledge and skills towards the Quizizz application are classified as good from previously classified as poor. Perceptions regarding teacher attitude/follow-up to using the Quizizz application are classified as very good from

previously classified as quite reasonable. With the results of this study, it is hoped that training activities on the use of online media in learning, especially learning evaluation using the Quizizz application, can continue to be carried out in all districts/cities in Aceh and outside Aceh as an effort to optimize online learning activities in the province of Aceh and its surroundings.

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