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Research, and Technology



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**International Symposium on Open,
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“Education Technology in the new normal: now and beyond”.

Jakarta, 1-3 December 2021

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Date: 19 November 2021

Letter of Invitation

Dear Authors: Dewi Handayani

We are pleased to inform you that your abstract (ABS-82, Oral Presentation), entitled:

"The Analysis Of Using Quizizz As A Chemistry Learning Evaluation Tool"

has been reviewed and accepted to be presented at ISODEL 2021 conference to be held on 1-3 December 2021 in Jakarta, Indonesia.

We cordially invite you to attend our conference and present your research described in the abstract.

Please submit your full paper and make the payment for registration fee before the deadlines, visit our website for more information.

Thank You.

Best regards,

Irfana Steviano, S.Pd, M.Ed
ISODEL 2021 Chairperson



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Payment Receipt

The organizing committee of ISODEL 2021 acknowledges the following payment for registration fee,

Abstract ID	ABS-82 (Oral Presentation)
Title	"The Analysis of the Use of Quizizz as an Evaluation Tool for Chemistry Learning"
Authors	Dewi Handayani
Paid Amount	IDR 3,500,000
Paid By	Dr. DEWI HANDAYANI

Thank You.

Best regards,

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The Analysis of the Use of Quizizz as an Evaluation Tool for Chemistry Learning

Dewi Handayani

Chemistry Education Study Program
University of Bengkulu
Indonesia
E-mail : d.handayani@unib.ac.id

Abstract— Learning carried out in the current industrial 4.0 era is technology-based, which is included in the measurement of evaluation tools. One of the applications used for this evaluation measurement is the game-based quizizz application. The purpose of this study was to analyze the students' responses to the application of Quizizz on the evaluation of learning outcomes. This research is a descriptive study, which was conducted in one of the senior high schools in Bengkulu Province. The sample in this study consisted of 32 students. Data collection is done through a google form that can be accessed by each student. Based on the results of the research conducted, students gave a positive response to the use of quizizz as a learning evaluation tool with an average score of 91.75% and the teacher's response 91.67% categorized as very interesting. This Quizizz presentation attracts the attention of students, spurs learning quickly for students, and is very easy to use and access online.

Keywords : Quizizz; Chemistry learning; Evaluation

I. INTRODUCTION

In this 21st century, the use of information technology becomes something important. All fields including education experience changes that lead to digitization, ranging from long-distance digital communication using mobile phones, via zoom meetings, google meet and many other face-to-face application features. The use of the internet is important in supporting learning, so that innovative-producing education and creative industries emerge in the midst of society. Educators are forced or self-aware to be familiar with Information and Communication Technology (ICT), and have the necessary hardware and software.

In the 21st century, it is marked by the increasingly sophisticated information and communication technology, so that it has an impact on society, especially in our country, Indonesia.[1] With the rapid development of information and communication technology in the era of globalization, it will affect the world of education. So that in the era of 4.0, education experienced a big change or a very great disruption as a result of the impact of the development of information technology that affects learning activities in schools.

One of the changes is the pattern of providing learning evaluation tools to students. Learning evaluation tools are

important in measuring the success of a learning process. Evaluation is a systematic, continuous, comprehensive process, with the aim of seeing whether the planned program has been achieved or not so that the information is useful in making a decision [2,3,4]. The scope of this evaluation includes the level of students' mastery of the specific and general teaching objectives achieved [5].

With the advancement of ICT, the evaluation tool has changed towards digital. Based on interviews conducted at one of the public high schools in Bengkulu Province, it was stated that the evaluation of learning carried out was still paper-based. One of the subjects that is the focus of research is chemistry on the subject of nomenclature of chemical compounds. The material for nomenclature of chemical compounds in the curriculum is quite a lot, including the nomenclature of binary compounds consisting of metal and non-metal compounds, non-metals and non-metals, compounds composed of polyatomic ions, nomenclature of acidic compounds, nomenclature of basic compounds, and naming organic compounds. For material that has a lot of digital-based evaluation questions, it is very suitable to be applied. Student learning outcomes can be downloaded directly on the teacher's *quizizz* account. It can also be seen the student's rank and the time of working on the questions done by the students.

Digital-based evaluation tools are considered capable of providing a variety of evaluation tools and as a solution in implementing a manual evaluation system. The advantages of this digital evaluation are that the processing time of the questions can be arranged, the examination of student answer sheets is fast and practical because it is carried out by the system, the questions can be scrambled so as to minimize students working together on exam questions [6].

Therefore, in this study the researchers tried to apply one of the applications in making a game-based evaluation tool, namely *quizizz*. This game-based learning makes students more interested and happy in learning. *Quizizz* is a form of educational game where the test is carried out together and students can see the rankings directly on the application and can be used as a means of storing evaluation questions [7,8,9]. *Quizizz* game is a game-based educational application, in the

form of interactive exercises that bring multi-game activities into the classroom and are fun that are narrative and flexible. Besides being able to be used for presenting material, it can also be used as an interesting and fun evaluation tool. The learning pattern that currently uses online is very suitable when the quizizz application is used. Game-based learning can motivate learning because it can stimulate the visual and verbal abilities of students. Implementation using *quizizz* games, students can do exercises in class on their electronic devices. *Quizizz* has game characteristics such as avatars, themes, memes, and music that provide fun effects during the learning process. *Quizizz* games allow students to compete with each other and motivate students to learn so that learning outcomes increase.

Several previous studies stated that the use of this quizizz application was able to increase student learning concentration and student learning outcomes using quizizz were higher than traditional formative assessments [10].

Based on the description above, the researchers conducted a study entitled analysis of the use of Quizizz as an evaluation tool in chemistry learning.

II. METHOD

This research is a descriptive study with the research subjects are students of class X MIPA 1 in one of the public high schools in Bengkulu Province, totaling 32 people and 3 teachers. The sample selection of this study used purposive sampling based on certain considerations [11]. Data obtained from the results of filling out student response sheets..

The assessment score obtained from the available answer choices on the student validation sheet is calculated for each statement item using the following formula:

$$V = \frac{\text{total skor yang diperoleh}}{\text{skor maksimum}} \times 100\%$$

Information:

V = student response assessment score

The student response assessment scores that have been obtained are converted to assessment statements to determine the feasibility and quality of the resulting product. The conversion of assessment scores into assessment statements can be seen in table 1 below [12].

Table 1. Response Rating Score Scale

Category	Classification
V > 80%	Very interesting
61% < V ≤ 80%	Interesting
41% < V ≤ 60%	Quite interesting
21% < V ≤ 40%	Less attractive
V ≤ 20%	Not attractive

If the average score of student responses is less than the attractive criteria, the game-based chemistry learning evaluation tool using the *quizizz* application must be revised before proceeding to the next stage

III. RESULTS AND DISCUSSION

The research was conducted in one of the senior high schools in Bengkulu. Students are given a learning evaluation using the quizizz application. This study is to analyze the use of the quizizz application as an evaluation tool to optimize the quality of chemistry learning by utilizing digital-based technology. Figure 1 below is the initial screen for logging into the quizizz application.

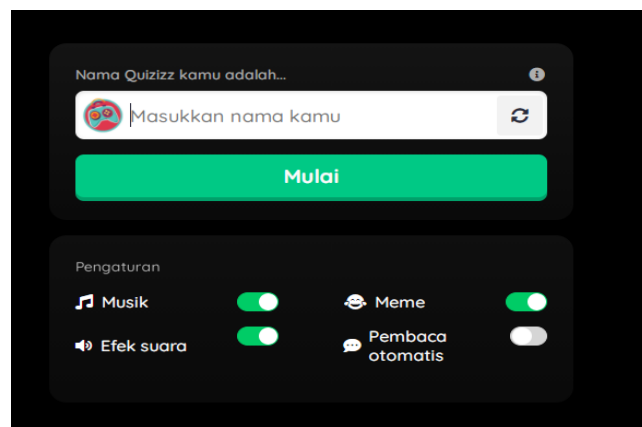


Figure 1. Quizizz preview for students



Figure 2. Display of Question Items and Answer Options on Quizizz for students

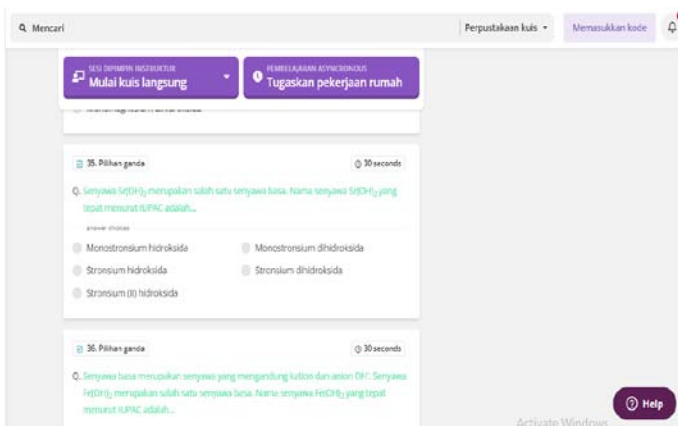


Figure 3. Display *quizzz* teacher / question maker

The results of the responses from students to the *quizizz* application can be seen in table 2.

Table 2. Results of Student Responses to Evaluation using *Quizizz*

Aspect	Total score	Average	Percentage (%)	Criteria
A. Presentation				
Clear instructions for use	120	3,75	93,75	Very interesting
Display the value obtained is interesting	116	3,625	90,625	Very interesting
Serving interesting questions	122	3,8125	95,3125	Very interesting
B. Appearance				
The composition of the text color contrasts with the background color	118	3,6875	92,1875	Very interesting
Attractive evaluation media display	122	3,8125	95,3125	Very interesting
Use of appropriate <i>backound</i> in the evaluation media	115	3,59375	89,84375	Very interesting
C. Language				
Grammatical rules	120	3,75	93,75	Very interesting
The formulation of the question does not use words/sentences that cause multiple interpretations	116	3,625	90,625	Very interesting
D. Use				
Ease of accessing evaluation media	108	3,375	84,375	Very interesting
Total Score :	1.057	33,03125		
Average :		3,6701	91,7535	Very interesting

Based on table 2, the average obtained is 91.75% with very interesting criteria. This is because from the aspect of presenting interesting questions, the appearance of the evaluation media is attractive and the color composition between the text is contrasting with the background color presented and in accordance with the existing background. This is in line with previous research which states that a good

evaluation media fulfills the attractive appearance and usage aspects as well [13]. The language used is short, concise, clear and does not cause multiple interpretations. This quiz is also liked by students because it is very easy to use and challenges students to compete quickly and accurately. This *quizizz* application trains students to work on questions quickly, independently and honestly, fun, challenging, interactive, thorough and disciplined with respect to time [14,15,16]. Disadvantages of implementing the evaluation test with *Quizizz* include the internet signal which is sometimes unstable so that it interferes with the speed in carrying out the evaluation given, this is because in some places, for example in rural areas the internet network is not optimal or depends on where the *quizizz* is used [17,18].

In graphical form, the results of student responses to the *quizizz* application can be seen in Figure 4 below.

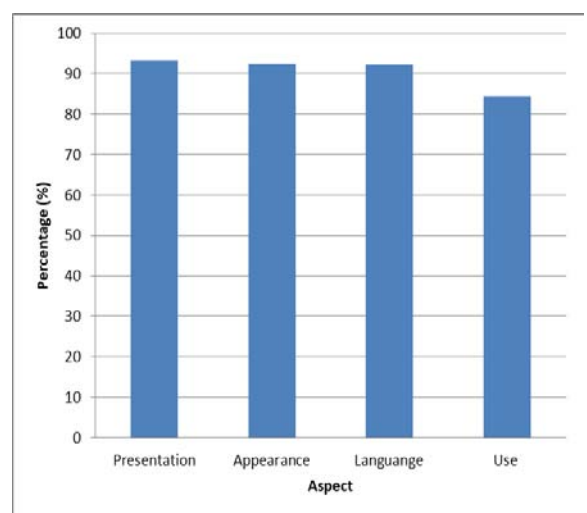


Figure 4. Graph of student responses to the *quizizz* . application

From Figure 4, it can be seen that the students' response to the *Quizizz* application which was applied in learning was very good. Both in terms of presentation, the appearance of the questions presented, the language used and the use and benefits obtained by students.

Analysis of the teacher's response to the *quizizz* application can be seen in table 3

Table 3. Teacher Response To *Quizizz* Application

Aspect	Total Score	Average	Percentage (%)	Criteria
A. Presentation				
Clear instructions for use	10	3,33	83,33	Very interesting
Display the value obtained is interesting	12	4,00	100,00	Very interesting
Serving interesting questions	11	3,67	91,67	Very interesting

B. Appearance				
The composition of the text color contrasts with the background color	10	3,33	83,33	Very interesting
Attractive evaluation media display	12	4,00	100,00	Very interesting
Use of appropriate <i>backsound</i> in the evaluation media	10	3,33	83,33	Very interesting
C. Language				
Grammatical rules	12	4,00	100,00	Very interesting
The formulation of the question does not use words/sentences that cause multiple interpretations	12	4,00	100,00	Very interesting
D. Use				
Ease of accessing evaluation media	10	3,33	83,33	Very interesting
Total Score :	99	33	825	
Average :		3,67	91,67	Very interesting

From table 3 obtained an average value of 91.7% with very interesting criteria. This means that the responses of students and teachers in this study are in line. Teachers and students both agree on the application of the quizizz application in learning chemistry on the material of nomenclature of chemical compounds. Figure 5 shows examples of learning outcomes obtained by students based on ranking (the highest result), data taken from students' exercises in class..



Figure 5. Learning outcomes of students' practice scores in class

The questions presented in this application can be arranged according to the level of difficulty of the questions. From the results of interviews conducted directly with students, students felt challenged and enthusiastic in doing quizzes. Students work independently, because there is no opportunity for students to be able to work together with other students because there is a time setting in working on the questions and the questions presented are not the same/randomized between one student and another. Questions can be opened using each student's laptop or android. Some of the obstacles for students are because it is game-based, sometimes students panic because the questions are limited in time, so that students' concentration on the questions they are working on decreases.

The average final student learning outcomes in chemistry subjects using this quiz is 83, 91 already exceeding the school's Minimum Completeness Criteria (KKM) which is 75. This means that the use of the quizizz application in chemistry learning is already effective and able to increase students' motivation and enthusiasm in learning chemistry.

IV. CONCLUSION

Based on the results and discussion, it can be concluded that the student's response to the quizizz evaluation was very good. The average student response value is 91.75% and the teacher's response is 91.67% with very interesting criteria. Student learning outcomes have also exceeded the school's KKM, which is a score of 83.91 (with KKM = 75). This quizizz application can be recommended for use because it can increase students' enthusiasm, independence, accuracy and discipline with time.

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