International Journal of Education and Teaching Zone. Volume 3 (Issue 2): 23-06 (2024)
DOI: https://10.57092/ijetz.v3i2.256

THE JOURNAL OF IJETZ
(International Journal of Education and Teaching Zone)
P-ISSN: 2963-7899 I E-ISSN: 2830-7925
jurnal.yayasannurulyakin.sch.id/index.php/ijetz

Utilization of Test Instruments Using Safe Exam Browser for Scientific Literacy Seen From The Perspective of Students

Gina Sulman[1]*, Ramadani[2], Diniyah Rizkiyanti Zebua[3]
[1]Faculty of Tarbiyah and Teacher Training, Institut Agama Islam Negeri Kerinci, Kerinci, Indonesia

Article History:
Received: April 15, 2024
Revised: May 27, 2024
Accepted: June 12, 2024
Published: June 23, 2024

Keywords:
Safe Exam Browser,
Scientific Literacy,
Student Perspective,
Tes Intruments

***Correspondence Author:**
ginasulman44@gmail.com

Abstract: The research that has been carried out aims to see how students view test instruments that use safe exam browser to measure students' scientific literacy skills on virus material in biology learning. The population of this study was MAN I Kerinci students in class X who had studied virus material in biology lessons. This sampling was used because 20 students felt it was sufficient to create a knowledge picture of their general scientific literacy abilities. The data analysis technique in this research uses a questionnaire with a Likert scale. The analysis will be conducted using the understanding or theory of student response criteria from the questionnaire given. The categorization is divided into 4 categories and also analyzed in the form of percentages and analysis of interviews with several randomly selected students and direct observation. The results of the research show how students view the test instruments given, where the average student gave a score of 86.1%, with an average score of 3.44 in the pretty good category. The pretty good category details that the virus material provided by the teacher from the student's perspective is pretty good on the test instrument used, namely 86.2% with a response criterion of 3.45, including the pretty good category, then the language used also has an average student response value of 86.2% with a response criterion of 3.44 with a response category of pretty good.

INTRODUCTION

Technological developments allow educators to explore learning activities more, including conducting learning by combining all existing components to be utilized in the learning process. Technology can make the learning process easier, especially learning that requires more detailed skills and sophisticated technology (Martin et al., 2018; Moe, 2008; Murtagh et al., 2023). Learning varies in difficulty, so students sometimes find it difficult to understand not only because the learning process is carried out incorrectly but also because the understanding of the material is more difficult (Mishra et al., 2020; Sullivan & Freishtat, 2013). Students' difficulties cannot be ignored because they can result in problems in knowledge at the next learning stage. Learning that provides difficulty levels in the learning process is usually always related to knowledge. The knowledge most often studied today is in the form of scientific literacy skills (Aulya et al., 2023; Harrison & SLaco, 2022; Shah et al., 2021). Scientific literacy skills can be students' ability to adapt

to the environment and developments of the times, so that students can position themselves as individuals who are ready to face changes in times and technology.

Scientific literacy is a 21st-century ability that must be understood as an absolute must that students must have. Today's students' abilities must have comprehensive and systematic understanding, called scientific literacy abilities. Scientific literacy can be demonstrated as how students understand and know the development of knowledge and technology, which can later be utilized in problem-solving (Brears et al., 2011; S. Y. Sari et al., 2022). Problems in the real world can actually be fixed, and solutions can be found from the knowledge gained in the classroom or school. Schools should be a place to change a knowledge system and a civilization to be better and quality (Brears et al., 2011; Meeuwisse et al., 2023; Tuan Soh et al., 2010). Learning changes must be able to encourage students' ability to be able to solve problems, especially in biology learning.

Biology learning is a subject that is always interesting to study and understand because it relates to living creatures and the surrounding environment. Students must be able to utilize their knowledge (Carmi et al., 2015; Haber, 2012; Madden & Alt, 2021), so that if a problem occurs, such as the COVID-19 virus, students can provide understanding and contribute to changes in civilization. Understanding biology learning, especially regarding virus material, will be very important for students to understand and master because viruses are important and interesting material for deeper analysis. Viruses are an important part of developing a more important quality of life, and every virus material can be studied for interesting study in learning (Ananta & Kurniawan, 2023; Chusni et al., 2020). The study of viruses in the biology learning process has had significant developments; many learning solutions and strategies have been implemented, and several methods and techniques have been successful in the learning process (Hasanah et al., 2019; Ibarra-vazquez et al., 2023; Rosbottom, 2001). Many people have observed the success of the learning process in studying viruses in biology subjects, but very few have discussed or analyzed the test instruments used.

Many test instruments in the biology learning process, especially the virus material, use test questions in the form of objective questions or descriptive questions, but very few have been found to use test questions with special applications for carrying out tests. The learning process carried out nowadays, especially in the midst of COVID-19, used to take place online, so, of course, it was difficult to carry out classical tests by distributing questions to students. The learning process nowadays requires a question instrument that is able to accommodate students' test questions. When carrying out online tests, students cannot be fully controlled (Chen et al., 2019; de Bruin & van Merriënboer, 2017). When carrying out a test, teachers are unable to know whether the student's answer process or finding the answer is correct or not, whether it is done honestly without looking at the answers on the internet during the test or not (Chang et al., 2020; T. Sari & Nayır, 2020). Difficult control in administering tests can result in teachers misunderstanding the actual quality of student learning. Teacher errors in knowing the actual quality or literacy abilities of students can result in invalid data about students' literacy abilities, and this is very detrimental to accurately mapping students' abilities (Malone, 2008; Yuliani et al., 2018).

One application that can be completed or a solution in tests that use the internet or online technology is safe exam browser.

Safe Exam Browser is an application that can be used easily and is able to provide confidence that teachers' answers are correct and accurate. Safe exam browser accuracy can actually occur because this application is able to restrict students while carrying out online tests from opening other pages in the browser where they are taking the test. The restrictions imposed by an application are able to provide a solution that is able to minimize cheating by students during tests (Arif et al., 2021; Palaloi et al., 2023), where in this case, safe exam browser can measure students' true abilities, namely tests regarding student literacy regarding virus material, so that student's abilities can be observed correctly. When students carry out a virus test, they will focus on the process of finding answers on the test computer used. Students' knowledge of safe exam browser applications, which can limit them in carrying out tests, can provide encouragement to students to be honest and more serious in tests. The students' seriousness and students' confidence that they are being observed in the test are able to encourage more effort from students in finding the most appropriate answer (Arif et al., 2021; Palaloi et al., 2023; Panyahuti & Ganeferi, 2023). Students' focus on the question will make them more careful and help them consider the right answer.

Researchers believe that applying safe exam browser in students' scientific literacy tests is one of the simplest ways teachers can provide solutions for observing and maintaining the quality of test questions when carried out online. Researchers still haven't found much research on student literacy test instruments that use the safe exam browser application, so researchers are very interested in looking more deeply into students' perceptions of the test instruments used to measure students' scientific literacy. Hopefully, this research will encourage teachers to increase creativity and innovation in learning so that the learning process can run better.

METHOD

The research carried out is part of the development process, namely developing assessment instruments through safe exam browser. This section aims to see how students view the safe exam browser, created as a scientific literacy test instrument on virus material. This type of research is descriptive quantitative research, where the researcher will present the research findings maximally and objectively, and the findings, data analysis, and presentation or explanation of the data will be described completely and comprehensively (Branch, 209 C.E.; Creswell, 2012). The population of this study were MAN I Kerinci students in class X who had studied virus material in biology lessons. The sample in this study was 20 students of class This is used so that 20 groups of students are able to create a picture of knowledge from their scientific literacy skills.

The data collection technique used in this research is a student satisfaction questionnaire or student perspective on the student scientific literacy test instrument using the safe exam browser, which consists of 20 questions with a maximum score of 100 and a minimum score of 0. The assessment questionnaire uses a Likert scale with 5 indicators or explanations, namely Very good (score 5), good (score 4), Pretty good (score 3), poor

(score 2) and very poor (score 1). From the questionnaire given, an analysis will be carried out using the understanding or theory of student response criteria (Azwar, 2012), where the categorization is divided into 4 categories, namely Very good if the score is 76 to 100, then the good category if the score is 51-75, the Not good category if the score is 26-50. The category is very poor if the score is 0 to 25.

This research will show what percentage of students' answers are given so that there is a clear comparison of students who give their views, where this analysis is, of course, based on student answers using a formula that can be used with simple mathematical principles, namely the number of answers for each respondent in an item will be divided by the ideal number in items. Analysis of the resulting data will provide a comprehensive picture from the student's perspective regarding the safe exam browser test instrument on virus material in biology learning. Analysis of the resulting data will provide a comprehensive picture from the student's perspective regarding the safe exam browser test instrument on virus material in biology learning. The data analysis carried out will also be supplemented by an interview process with several randomly selected students and also direct observation.

RESULT AND DISCUSSION

The research process that has been carried out provides an illustration that scientific literacy test instruments, especially virus material assisted by the safe exam browser application, are able to be a solution in overcoming the problem of learning evaluation or giving tests, especially tests carried out in online learning. Test instruments must be able to be a means of determining students' learning achievements (Hidayati et al., 2023; Lin, 2008), so that the learning process not only takes place as a place to transfer knowledge but also must be able to become an ability that is able to measure the high quality of students' mastery and understanding in the learning (Mullet et al., 2018; Muwonge et al., 2020; Steel et al., 2010), The test instrument presented in this research will certainly provide an overview from the student's perspective as to a response to the instrument that deserves to be received and felt. The analysis instrument for student literacy questions using safe exam browser can be seen from the researcher's research data in Table 1.

Table 1. Data Analysis of Scientific Literacy Test Instrument Results From Student Responses

No	Indicator	Average Student Responses	Student Response Criteria	Category
1	Virus Material	86,2%	3,45	Pretty Good
2	Language	86%	3,44	Pretty Good
	Average	86,1%	3,44	Pretty Good

The research process that has been carried out provides a positive response from students to the test instruments used by teachers in the process of measuring students' scientific literacy. Based on the data presented in Table 1, it is clear that there are two indicators of observations made, namely in terms of whether the virus material used in the test is very appropriate to the learning process that has been carried out and also whether the students' views regarding the language used in the test questions are appropriate. Easy to understand so that it is easy for students to analyze; then, from the two indicators, we

will see what the students' average score is regarding their responses to the scientific literacy test instrument on virus material in the biology learning process. The average student score will be the real benchmark for whether the distribution of test instruments has gone well in general or not (Bertrand & Namukasa, 2020; Wahyuni & Taqwa, 2022).

The research that has been carried out and presented in Table 1 above shows the actual views of students on the test instruments given, where the average student score is 86.1%, with an average score of 3.44 in the Pretty Good category. The Pretty good category details that the virus material provided by the teacher from the student's point of view is very good in the test instrument used, namely 86.2% with a response criterion of 3.45, which is a pretty good category, then the language used also has The average student response value was 86.2% with response criteria of 3.44 with a Pretty good response category. The research that has been carried out has been able to provide an overview of students' responses or views regarding the safe exam browser -assisted scientific literacy test instrument, which has had a positive impact on students. Safe exam browser is able to limit everything that students use to carry out the test; in other words, safe exam browser is able to minimize the use of other applications that can cause the test results to not run optimally (Arif et al., 2021; Panyahuti & Ganeferi, 2023). The data in the research that has been carried out gives an idea that improvements still need to be made, and there are several shortcomings that must be improved in the instrument process that the researchers have developed, even though, on average, it is Pretty good. The scientific literacy test instrument is able to provide a basis for other researchers to create higher-quality tools for the learning process, especially online learning.

Analysis of Students' Perspectives on Scientific Literacy Instruments Assisted by Safe Exam Browser on Virus Material in the Biology Learning Process

The research process that has been carried out provides a prominent picture of how students view the use of the safe exam browser application, which can give genuinely high-quality test instruments and also encourage students to focus more on carrying out the test process, primarily online (distance) from each other's house. Technological developments can become a facility to encourage teachers to be more innovative and effective in the learning process (Torres, 2011; Watts et al., 2003). The effectiveness of the learning by teachers can start by utilizing existing technology, such as safe exam browser, as a tool in carrying out tests. Safe exam browser can be a tool to minimize students' browsing simultaneously, which can lead to cheating when implementing the tests (Arif et al., 2021; Panyahuti & Ganeferi, 2023). Safe exam browser ability to limit students from browsing on their computers will limit student movement and make it easier for students to concentrate on the tests being used. A good learning process is, of course, learning that can create a conducive and effective learning atmosphere. Online tests are difficult to control; with the safe exam browser being used in literacy instrument tests, it can certainly be a part that can overcome the problems of online tests being carried out.

As recipients of knowledge, students are certainly the most essential part of the learning process. Students must have a high level of will and confidence in carrying out the learning process, whether the learning is done online or offline. Each learning

component can trigger students to know more about the content and meaning they are learning (Cropley & Patston, 2019; Seufert, 2018). Giving tests in learning is necessary to measure students' understanding of the learning. Students' abilities must be measured and mapped to provide teachers input to improve future learning so that it becomes better and optimal. Effectiveness in learning is also an important part that teachers need to pay attention to and consider (Ayua et al., 2024; Cónsul-giribet, 2014). Considering the effectiveness of student learning will be the first step in a more focused learning process. safe exam browser provides a solution to direct students to concentrate more on carrying out tests, in this case, students' scientific literacy tests. Students as recipients of knowledge can be seen by the teacher, both in harmony and desire in the learning process; in other words, the teacher must be able to see the student's response to the learning process that is being carried out, and in this case, the safe exam browser test instrument on viral material.

The analysis of students' responses to the safe exam browser application given by the teacher, especially the virus material in biology learning, received a positive response. In this research review, so that it is manageable, the researchers divided it into just 2 indicators: the student's responses to the instruments given, namely, the indicators of virus material and the language used. The researchers believe that the material and language indicators can be an understanding and conclusion for teachers in understanding whether the instruments given to their students are correct. Indicators are benchmarks that can limit a research or research review that is carried out so that it can direct research to be more focused and more profound in the observation process (Puccio et al., 2005; Reyza et al., 2022). The students' responses to the abilities or test instruments used were excellent, where the average student score was 86.1% or with a score of 3.44 in the pretty good category. Hence, the researchers thought that the instrument process developed was quite effective and promising for students as a tool to help teachers in carrying out learning tests.

Student responses regarding virus material were pretty good, with an average percentage of 86.2% and a response criterion of 3.44, categorized as Pretty good reasonable. The students' reasonably good response to the material provided shows that the virus material used as test questions is based on the quality of the questions and is entirely appropriate to see students' abilities regarding the virus material. Virus material is material in a category that is pretty good for students to understand, so the presentation of the material must still be focused and have standards for the virus material provided. From the results of the researchers' interviews with students, many students stated that the material provided was clearly illustrated and exciting, and the virus test questions could be analyzed well. In the viral material, many students think that test questions using safe exam browser can make them more focused, give them a more severe understanding during the test, and not think about cheating. Judging from the language indicators, the responses given by students are similar, where the average student response is 65%, and the student response criteria are 3.44d in the pretty good category.

The outstanding category in the language indicator shows that the scientific literacy instrument questions on virus material can be read well, and there are no confusing questions, so the questions created are pretty good for determining students' scientific literacy abilities. The research that has been carried out clearly provides The illustration

that the safe exam browser application is able to be one part of overcoming problems in implementing online tests, especially students' scientific literacy tests in biology learning, especially virtual material, has proven to be quite good from the students' point of view. The students' view that the instrument is good enough is the basis for teachers to be able to maximize and use safe exam browser in the learning process.

CONCLUSION

The research that has been carried out provides an understanding that students stated that the student scientific literacy test instrument using safe exam browser was seen as quite positive as a measuring tool for biology learning, especially on virus material. The results of the research prove that from the students' perspective on the test instruments given, the average student score was 86.1%, with an average score of 3.44 in the Pretty good category. The research process provides information that the student response indicator for the learning material, namely viruses, received a Fairly Good score on the test instrument used, namely 86.2% with a response criterion of 3.45, which is in the Pretty good category, then the language used also has an average response score. students amounted to 86.2% with a response criterion of 3.44 with a response category of Pretty good. The researcher recommends that future researchers increase the number of research samples and pay more attention to the instruments used. Researchers also hope that this research can be a breakthrough and provide new information for other research as a model of an online test instrument that is recommended for online learning both now and in the future. Researchers also hope that teachers will be more active and creative in carrying out the biology learning process in the future.

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