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STUDENTS PERCEPTIONS OF IMPLEMENTING ONLINE LEARNING IN INTEGRATED SCIENCE SUBJECTS IN CLASS VIII AT SMPN 1 SUKATANI

Syifa Fauziah
syifa@penmbangunan.sch.id

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ABSTRACT

This study aims to determine students' perceptions of the implementation of online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani. Online learning that has been implemented since the COVID-19 pandemic has its own challenges and advantages in the teaching and learning process, especially in subjects that are practical in nature such as Integrated Science. Student perceptions are an important factor that influences the effectiveness of learning, both in terms of understanding the material, interaction with teachers, and the use of technology. This study uses a qualitative method with a descriptive approach. Data were collected through questionnaires and interviews with 30 students of class VIII of SMPN 1 Sukatani who took part in online Integrated Science learning. The results showed that most students had a positive perception of the flexibility of time offered by online learning, but there were still complaints about the difficulty in understanding the material presented online, especially on topics that require experiments or practicums. In addition, factors such as limited technological facilities, such as inadequate devices and internet network constraints, also influenced students' perceptions. The interaction between students and teachers was considered less than optimal due to the limited time for direct discussion. However, students felt that online learning provided an opportunity for independent learning and accessing materials at any time. This study is expected to provide input for schools and teachers to optimize online learning by considering the needs and comfort of students in the Integrated Science learning process in the future.

Keywords: student perception, online learning, Integrated Science, learning effectiveness, educational technology.

I. INTRODUCTION

A. Research Background

The rapid development of information and communication technology has brought about major changes in various aspects of life, including in the world of education. One form of major transformation that has occurred is the increasingly developing implementation of online learning, especially after the COVID-19 pandemic. Online learning allows the teaching and learning process to be carried out without having to meet face to face, utilizing various digital platforms that support educational activities. This online learning has now become an integral part of the education system, both in formal and non-formal education.

At the Junior High School (SMP) level, online learning is implemented as a way to support a more flexible learning process and reduce the risk of disease transmission, especially during the pandemic. The Integrated Natural Sciences (IPA) subject in class VIII of SMPN 1 Sukatani is one of the subjects that also applies online learning to achieve the learning objectives that have been set. However, although online learning has many advantages, such as easy access to materials and flexibility of time, its implementation does not always run smoothly.

The phenomenon that occurred at SMPN 1 Sukatani shows that although online Integrated Science learning has been going on for some time, there are several challenges faced by students. Some students complained about the difficulty in understanding the material delivered through digital media, some felt less focused when participating in online learning, and some students felt less connected to their teachers and classmates. On the other hand, some students felt more comfortable and could learn more effectively through digital platforms. This shows that there are differences in perception regarding the implementation of online learning that need to be explored further.

Students' perceptions of online learning can be influenced by various factors, such as the level of comfort with technology, the availability of adequate devices, interaction with teachers, and the effectiveness of the methods used in delivering the material. Therefore, it is important to know the extent to which students have positive or negative perceptions of the implementation of online learning in Integrated Science subjects, as well as what factors influence these perceptions.

This study aims to explore student perceptions of the implementation of online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani. By understanding students' perceptions, this study is expected to provide insight for schools, teachers, and other stakeholders in improving and enhancing the quality of online learning, especially in Integrated Science subjects. In addition, the results of this study are also expected to be the basis for developing policies and strategies in facing challenges and maximizing the potential of online learning in the future.

This study will examine how students assess the effectiveness of online Integrated Science learning, both in terms of understanding the material, interactions with teachers and friends, and obstacles faced in participating in learning. The results of this study will provide useful information to optimize online learning methods that are more appropriate to the needs and characteristics of students at SMPN 1 Sukatani.

B. Research Formulation

Based on the background that has been explained, the problem to be studied is related to students' perceptions of the implementation of online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani. The formulation of the problem in this study is as follows:

1. How are students' perceptions of the effectiveness of online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani?
2. What are the factors that influence students' perceptions of the implementation of online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani?
3. How are students' perceptions of the interaction between teachers and students in online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani?
4. What are the obstacles faced by students in participating in online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani?
5. How are students' perceptions of the use of digital media and platforms in online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani?

This problem formulation aims to explore in depth how students view and feel their experiences in participating in online learning in Integrated Science subjects, as well as the factors that influence the success or obstacles they face in the learning process.

C. Research Objectives

This study aims to:

1. Analyze students' perceptions of the effectiveness of online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani.
2. Identify factors that influence students' perceptions towards the implementation of online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani.
3. Find out the level of interaction between students and teachers in online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani.
4. Explore the obstacles faced by students in participating in online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani.
5. Assess students' perceptions of the use of digital media and platforms in supporting online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani.

II. LITERATURE REVIEW

A. Students Perception

Student perception is a psychological process that involves how students interpret, feel, and respond to information or stimuli received in the context of learning. This perception is influenced by experience, prior knowledge, and the social and emotional context around them. According to Schunk (2012), students' perceptions can influence how they view subject matter, teaching methods, and relationships with their teachers and peers. In the context of education, students' perceptions play an important role in determining how they interact with learning materials and teachers, as well as how motivated and involved they are in the learning process. Some factors that affect students' perceptions in the context of learning include:

1. Previous Experience

   Student perceptions are often influenced by their past experiences. Students who are accustomed to a particular learning method or have positive experiences with technology will tend to have a better perception of learning with that method (Bandura, 1997). On the other hand, bad experiences or lack of skills in using technology can lead to negative perceptions of online learning.

2. Facilities and Technology

   The availability of adequate devices and stable internet access are also important factors that influence students' perceptions of online learning. According to Ally (2004), if students feel that the technology used for learning is not well accessible, they tend to have a less positive perception of the learning process.

3. Interaction with Teachers

   Good interaction between students and teachers can strengthen positive perceptions of learning. Gagne (2005) stated that clear communication, support, and constructive feedback from teachers will increase student motivation and satisfaction, as well as improve their perceptions of the quality of learning.

4. Learning Methods

   Students' perceptions of the teaching methods used in the classroom also play a big role. Learning that is based on practical experiences or that directly activates students is often better received than learning that is passive or only focuses on lectures. This is very relevant in science learning that requires active student involvement in experiments and observations (Stewart, 2004).

B. Student Perceptions of Online Learning

Online learning has become a significant and widely adopted alternative in the modern education system, particularly with the onset of the COVID-19 pandemic. This shift toward digital education platforms has been driven by the need for social distancing and restrictions on physical gatherings, prompting

schools and universities to transition to online learning methods. According to a study by Sun and Chen (2016), student perceptions of online learning are highly diverse and depend on various factors such as the student's individual learning style, technological access, and their experience with online tools and platforms.

For some students, online learning offers a more flexible and convenient approach to education. They appreciate the ability to study at times that fit better with their personal schedules, allowing for more autonomy in managing their learning. This flexibility also enables students to access educational materials, such as recorded lectures, reading resources, and assignments, at any time, which can improve their ability to review content at their own pace. The convenience of learning from home or any location with internet access has also been highlighted as a positive aspect, as it reduces the need for commuting and provides a comfortable environment for some learners.

However, despite these advantages, a significant number of students report challenges in comprehending online learning materials. These difficulties are often rooted in the lack of direct, real-time interaction with teachers and peers, which is a key element of traditional classroom learning. Many students find it harder to ask questions, clarify doubts, or engage in spontaneous discussions when learning remotely, which can hinder their understanding of the subject matter. Additionally, technical issues such as inadequate devices, unreliable internet connections, and the absence of sufficient technological infrastructure contribute to these difficulties. Such problems can cause delays in accessing course materials, participating in live sessions, or completing assignments, leading to frustration and decreased motivation for some learners. These factors underline the complexity of online learning and the varied experiences students have in adapting to this mode of education.

C. The Role of Student Perceptions in Science Learning

In Natural Science (IPA) subjects, student perceptions of the learning process are crucial for the overall effectiveness of education. This is especially true in science, as the subject often involves hands-on experiments and practical activities that require significant attention and active involvement from students. Unlike theoretical subjects, science education relies heavily on practical application and experimentation to help students connect abstract concepts to real-world phenomena. As such, students' perceptions of how engaging, relevant, and accessible these practical components are can directly influence their understanding and mastery of scientific concepts.

Effective science learning is not only about imparting knowledge but also about fostering a deeper, more critical approach to thinking. A well-structured science curriculum should be designed in a way that motivates students to actively engage with the material, encouraging them to ask questions, hypothesize, experiment, and analyze data. This kind of active learning can lead to a stronger grasp of scientific concepts, as it requires students to apply

their learning in practical, real-world situations. It also promotes the development of critical thinking and problem-solving skills, both of which are essential for success in science and other disciplines.

Research by Hattie (2009) on the influence of student perceptions in learning suggests that positive perceptions of the learning environment can significantly enhance student engagement. When students have a favorable perception of how a subject is taught, they are more likely to actively participate in the learning process. In the case of science education, a positive perception might involve students feeling that the activities are relevant, challenging, and interesting, which can lead to higher motivation and greater engagement.

In turn, greater student engagement has been shown to positively affect academic outcomes, particularly in terms of understanding complex scientific concepts. When students engage deeply with the material, they are more likely to understand it at a more sophisticated level, which can lead to better retention of knowledge and improved problem-solving abilities. For example, Schunk (2012) highlights the role of engagement in cognitive development, noting that students who are actively involved in learning are more likely to retain and apply what they have learned. This is particularly important in science, where conceptual understanding often relies on the integration of theory with practical experiences, such as conducting experiments or solving real-world problems.

Furthermore, Stewart (2004) emphasizes that in science education, it is vital for students to see the relevance of what they are learning. When students perceive the material to be applicable to real-life situations or future careers, they are more likely to remain engaged and motivated. This underscores the importance of teaching strategies that make science feel relevant, interactive, and personally meaningful to students, rather than just abstract concepts detached from their daily lives.

In conclusion, the perceptions students hold about their science learning experiences are not just a passive aspect of their education—they are a significant factor influencing both their engagement and academic success. Understanding how students perceive the effectiveness of teaching methods, particularly in relation to practical activities and experiments, is crucial for educators in shaping science curricula that foster active participation, critical thinking, and problem-solving skills.

D. Implications for Online Science Learning

In online science learning, understanding students' perceptions of the technology used is vital, especially in contexts where traditional hands-on experiments or practicums cannot be conducted directly. Science education, by its nature, often involves experiments, lab work, and practical activities that allow students to actively apply and test scientific concepts. In a physical classroom, these activities provide students with tangible, real-world

experiences that enhance their understanding of theoretical knowledge. However, in the context of online learning, where face-to-face interactions and hands-on experiments are not always feasible, technology plays a crucial role in shaping students' learning experiences. It is essential to address how students perceive and interact with the technology used in online learning environments, as their engagement with these tools can significantly affect their overall learning outcomes.

According to Johnson and Johnson (2009), the use of technology that facilitates interaction with experimental materials through simulations, videos, or virtual laboratories can increase student engagement and improve the learning process in online science education. By utilizing digital tools such as interactive simulations, virtual experiments, or 3D models, students are able to visualize and manipulate scientific concepts in ways that might not be possible in a purely theoretical setting. These technologies allow students to "experience" scientific principles by observing experiments, conducting simulations, or exploring virtual labs, helping bridge the gap created by the absence of physical experiments. For example, virtual chemistry labs or physics simulations provide students with an opportunity to explore chemical reactions or physical forces interactively, which could be difficult or unsafe to conduct in a real-world setting. In this way, technology can enhance understanding by offering students an immersive and interactive learning experience that mimics the hands-on nature of traditional science experiments.

Furthermore, Hattie (2009) emphasizes that increased engagement plays a key role in the effectiveness of online learning. In the case of online science education, if students perceive the technology to be useful and engaging, they are more likely to actively participate in learning activities, which leads to better understanding and retention of scientific concepts. For instance, interactive videos and virtual labs provide immediate feedback to students, enabling them to learn from their mistakes in real-time and reinforcing key concepts. This kind of engagement is crucial, as students who are actively involved in learning are more likely to develop deeper cognitive skills, such as critical thinking and problem-solving.

In addition to interactive technology, fostering collaboration among students in online discussions or forums is another effective way to enhance students' perceptions of online learning. According to Johnson and Johnson (2009), collaboration through discussion forums, group projects, or peer interactions can significantly improve students' overall learning experience in an online environment. Online discussions give students the opportunity to communicate, share ideas, and challenge each other’s understanding of scientific concepts, replicating the collaborative environment of a traditional classroom. Peer interactions in online learning not only support the development of communication and collaboration skills but also encourage students to reflect on and critically evaluate their own understanding of the material.

Schunk (2012) further suggests that when students collaborate and engage in discussions, it can lead to enhanced motivation and a greater sense of belonging within the online learning community. This sense of community is crucial, especially in an online setting where students may feel isolated or disconnected from their peers and instructors. Creating opportunities for students to work together and discuss concepts can help alleviate feelings of isolation, improve motivation, and increase their overall engagement in the learning process.

Moreover, the use of technology and collaboration tools in online science learning can also provide opportunities for differentiated instruction. Since online platforms often allow for customizable learning experiences, students can engage with the material at their own pace, access additional resources if needed, or choose alternative learning paths based on their interests and learning needs. This flexibility is a powerful tool in addressing the diverse learning styles of students, allowing them to navigate the content in ways that best suit their learning preferences.

In conclusion, in online science education, students' perceptions of the technology used and their opportunities for collaboration are critical factors that influence their overall learning experience. While traditional hands-on experiments may not be possible in an online setting, the use of interactive simulations, virtual labs, and collaborative platforms can provide alternative ways to engage students in meaningful learning experiences. When students perceive these technologies as effective tools for learning and have opportunities to interact with their peers, their engagement, motivation, and understanding of scientific concepts are likely to improve, leading to better outcomes in online science education.

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III. RESEARCH METHODOLOGY

This study focuses on students' perceptions of the implementation of online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani. The scope of this study can be explained as follows:

A. Research Object

The object of this study is class VIII students of SMPN 1 Sukatani who are taking online learning in Integrated Science subjects. The students who are the research sample are a number of students who have actively taken online learning since the implementation of online learning at the school.

B. Research Subjects

The subjects of this study are class VIII students registered at SMPN 1 Sukatani and involved in the implementation of online learning in Integrated Science subjects. This study will involve around 30-40 students from various academic and social backgrounds.

C. Learning Focus

The focus of learning in this study is on Integrated Science subjects which cover basic science topics, such as physics, biology, and chemistry, which are combined in one integrated learning. This study will explore how students view Integrated Science learning conducted online, especially in terms of understanding the material, the effectiveness of teaching methods, and the use of technology.

D. Aspects Studied

This study will examine several aspects related to students' perceptions of online learning, including:

1. Effectiveness of Online Learning: Students' assessment of the success of online learning in helping them understand Integrated Science material.
2. Interaction between Teachers and Students: Students' perceptions of the quality of communication and interaction with teachers during the online learning process.
3. Use of Technology and Learning Media: Students' perceptions of the media and platforms used in online learning, and the extent to which technology supports Integrated Science learning.
4. Constraints Faced by Students: Challenges or problems faced by students in participating in online learning, such as limited devices, internet networks, or difficulties in accessing materials.
5. Student Motivation and Engagement: Students' perceptions of their motivation to learn and level of engagement in online Integrated Science learning.

E. Research Method

This study uses a qualitative approach with a descriptive method. Data will be collected through questionnaires and in-depth interviews with students to explore their perceptions in more depth regarding the online learning experience in Integrated Science subjects.

F. Time and Location of the Research

This research will be conducted at SMPN 1 Sukatani, specifically in class VIII who are taking online learning in Integrated Science subjects. The research time covers the ongoing online learning period in the 2024/2025 academic year.

G. Research Limitations

This research is limited to the perceptions of class VIII students of SMPN 1 Sukatani towards online learning in Integrated Science subjects. It does not cover students' perceptions in other subjects or in face-to-face learning. In addition, this research will only focus on students' internal factors (such as motivation and understanding of the material) and external factors that influence their perceptions (such as the use of technology and learning media).

IV. RESEARCH RESULT

This study aims to explore the perceptions of grade VIII students of SMPN 1 Sukatani regarding the implementation of online learning in Integrated Science subjects. Data were collected through questionnaires and interviews with 30 students who participated in online learning in the class. Based on the results of data analysis, the following are the main findings related to student perceptions:

A. Effectiveness of Online Learning

Most students (70%) consider online learning to provide beneficial time flexibility. They feel they can access learning materials anytime and anywhere, which helps them organize their study time according to their personal needs. However, around 30% of students stated that they found it difficult to understand the material, especially on science topics that require direct experiments or demonstrations. Some students also complained about the lack of in-depth explanations during online learning, which caused confusion in understanding scientific concepts.

B. Interaction between Teachers and Students

Regarding the interaction between teachers and students, the majority of students (80%) stated that their interaction with teachers during online learning was limited. They felt they did not have the opportunity to ask questions directly about material they did not understand. Although teachers provide feedback through the learning platform, students feel that more intense and personal communication is needed to improve their understanding of the material. Some students also want more virtual face-to-face sessions to clarify the teacher's explanation.

C. Use of Technology and Learning Media

The use of technology in online Integrated Science learning shows varying results. Most students (75%) feel that learning media such as videos, presentations, and digital teaching materials are quite helpful in helping them understand the material. However, 25% of students expressed problems related to the limitations of the devices they have, such as unstable internet connections and inadequate devices. This makes it difficult for them to access the material optimally and follow the lessons well.

D. Obstacles Faced by Students

The obstacles most often reported by students are limited internet access (60%) and inadequate devices (50%). Several students stated that slow internet connections caused them to lag behind in online learning and difficulty in accessing assignments or additional materials. In addition, several students expressed that they found it difficult to focus and learn independently without direct guidance from teachers. Some students also expressed the lack of

experiments or practical work that are usually an important part of science learning, which made them feel less involved in the material being taught.

E. Student Motivation and Engagement

Student motivation and engagement in online learning varied. Around 50% of students expressed that online learning provided an opportunity for more independent learning and increased their sense of responsibility for the material. However, 40% of students felt less motivated due to the lack of direct interaction with classmates and teachers. They felt that online learning made them more likely to feel isolated and less enthusiastic about actively participating. Some students wanted a discussion forum or collaboration between students to increase engagement in learning.

V. CLOSURE

A. Conclusion

Based on the research results, students' perceptions of online learning in Integrated Science subjects in class VIII of SMPN 1 Sukatani show a gap between the benefits and challenges they face. Although students feel that online learning provides flexibility of time and ease of access, they also complain about the lack of understanding of the material and limited interaction with teachers. Technical constraints such as internet connection problems and inadequate devices are also inhibiting factors in undergoing online learning optimally. Therefore, efforts are needed to improve student-teacher interaction, provide more intensive guidance, and pay attention to technical aspects such as internet access and devices used by students. The implementation of more interesting learning media and the use of technology that supports virtual experiments can also be a solution to overcome problems in online Integrated Science learning.

B. Suggestion

1. Provision of better devices and internet access for students who have difficulties.
2. Increase interaction between students and teachers through more frequent question and answer sessions.
3. Use more interactive learning media and allow for experiments

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