IJORER : International Journal of Recent Educational Research
Homepage : https://journal.ia-education.com/index.php/ijorer
Email : ijorer@ia-education.com

p-ISSN : 2721-852X ; e-ISSN : 2721-7965
IJORER, Vol. 4, No. 1, January 2023
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Analysis of Students' Critical Thinking Skills on Virtual Reality Learning Media

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DOI: https://doi.org/10.46245/ijorer.v4i1.275

Sections Info
Article history:
Submitted: November 29, 2022
Final Revised: January 7, 2023
Accepted: January 17, 2023
Published: January 31, 2023
Keywords:
Critical thinking skills
Learning media
Problem-based learning
STEAM
Virtual Reality

ABSTRACT
This study aims to describe students' critical thinking skills and the corresponding prior knowledge of Virtual Reality (VR) media used for learning purposes in a classroom setting. A total of 65 high school students from Grade XI Science 1 and Science 2 were involved as respondents in this preliminary research using qualitative-descriptive analysis. The instrument used included questionnaires (distributed over the respondents) containing 12 questions on VR relevant to the indicators of critical thinking skills. The results showed students' skills in critical thinking at the intermediate level. The indicator of analytical ability has the highest percentage in the medium category. The number of students with critical thinking skills in the high category is 14, and in the medium category, as many as 51 students. Students' prior knowledge of VR media (familiar with the technology) was reported to 46.00% of all the respondents, and the remaining 54.00% did not know what it was. However, all the respondents were interested and happy with VR media as a learning tool. Improvement of critical thinking skills could be achieved through contextual learning and VR learning media. The implication of the present study for future use of VR education media in schools is possible as VR media is considered to be technology-assisted learning, applicable to science and physics teachers when delivering learning materials in class.

INTRODUCTION

The development of science and technology greatly affects the practice of teaching and learning in the field of education (Amri, 2015; Pangestuti, 2020). The portrait of education is not only seen as teaching and learning activities but also as a collaborative process between educators and students in creating a learning atmosphere that supports educational goals following the demands of the curriculum (Mardiki & Virginayoga, 2019; Prayudha et al., 2017). The tendency of learning physics so far is that students only study physics as a product rather than a process. Teachers still use direct learning because it is more practical and easier to achieve learning objectives. As a result, learning is more teacher-centered because the teacher only conveys science lessons as a product, and students memorize the factual information they get (Hayanti et al., 2017; Parno et al., 2019).

In accordance with the character of 21st-century education, physics learning is expected to provide not only students with the ability to master the concepts and principles of physics (basic thinking skills) but also the ability to reason in inductive and deductive analytical thinking (critical thinking skills) (Parno et al., 2021). Teaching and learning is a communication process of exchanging ideas and messages through certain media. In teaching and learning, the teacher provides visualization through images or symbols (Sukirman et al., 2019). Critical thinking skills are essential in this modern era, especially for school students. Critical thinking allows people to be more open-minded, obtain relevant information and find problems and solutions (Yunita et

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