The Need for Interactive Media for Electrical Learning in Vocational High Schools: Fact from the Classroom Activities

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Abstract. Technological developments bring changes to the types and variations of learning media that can be used by teachers to deliver learning materials. One of the many learning media is ICT-based interactive media. Currently, ICT-based learning media have begun to be widely implemented by various educational institutions. This study aims to describe and identify the need for media types that can be an alternative to be used in the learning process.This research is included in qualitative research with descriptive type, the research subject consists of 2 subject teachers in SMK, with the data collection techniques are interviews and observations, followed by the instruments of interview guidelines and observation sheets. The results of this study indicate that so far the teacher is still the center of learning resources, the dominance of the teacher is seen through the lecture method used when delivering the material. The use of media that is still glued to printed material books is also a finding that the integration of ICT into the learning process is not optimal, as well as the lack of variations in the use of learning media.Therefore, from the research results, it is seen that an ICT-based and interactive learning media innovation is needed to support learning activities in vocational high schools.

1 Introduction

The achievement of learning goals is no longer focused on one particular aspect that stands out, but almost all aspects, be it cognitive, affective, or psychomotor, get the same portion to be achieved in learning. One of the efforts that educators can do so that students can achieve these learning goals is to provide a series of learning resources (Nurlaili, 2018; Jayanti et al., 2017). Learning media is included in the form of learning resources, where conceptually learning media means a tool to convey information, in this case the subject matter in a more attractive format and appearance (Dinayusadewi & Agustika, 2020; Amelia et al., 2021; Wijaya et al., 2016). Moreover, during the COVID-19 pandemic, learning activities have undergone very fundamental changes, where at this time the learning process cannot be separated from the use of information and communication technology (Putrawangsa & Hasanah, 2018; Ambarsari et al., 2021; Lapi & Krasna, 2021). It has been confirmed that several studies have shown that

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during the COVID-19 pandemic the presence of ICT into the learning system is increasingly massive (Elshareif & Mohamed, 2021; Motamedi, 2019). This can certainly be an opportunity for progress and improvement of the quality of education.

Learning media has an important role in achieving student learning outcomes, especially if the learning media used are integrated with ICT and have interactive and dynamic characteristics. Currently, the development of information technology plays a very important role in the world of education, for example the use of computers, smartphones, as tools to run learning media (Syahputra & Maksum, 2020; Raji, 2019; Qodr et al., 2021). Interactive media is one of the learning media that has the potential to be developed, this is because interactive media will certainly have components contained in it such as text components, sounds, images, videos, animations and even assignments/practice questions (Sari et al., 2021; Syahputra & Maksum, 2020), so that it clearly describes the material in the learning process.

The quality of good interactive learning media in general is that it can increase students' interest in learning and learning motivation (Hanafi et al., 2017). As previously explained, through interactive media the teacher can embed components of text, images, videos, sounds, animations, and graphics in the display of the learning media used (Zipke, 2017; Nakpong & Chanchalor, 2019). The presence of interactive media which is also based on ICT can help students learn anytime and anywhere. The fact is that at this time teachers when carrying out teaching and learning activities have not maximally utilized interactive learning media in schools.

The integration between ICT and interactive media is expected to be able to support the face-to-face and online learning process (Agyei & Agyei, 2021). Interactive media is one solution for online learning. Because interactive multimedia can be used on computers or mobile phones, it contains more than one media component. Some research shows that interactive media actively contributes to improving the academic quality and academic achievement of students (Ishaq et al., 2020; Ziadat, 2019). In addition, interactive media is also considered capable of forming student character (Sholihah et al., 2020), helping students master the skills needed in the 21st century, such as critical thinking, literacy to creative thinking (Aufa et al., 2021; Gündüzalp, 2021).

Based on several descriptive descriptions and a synthesis of several relevant research results, an interactive media integration is needed that is in accordance with the needs and characteristics of students. Thus, this study aims to describe the ongoing learning process and identify the need for interactive media to support the learning process in vocational high schools, especially in electrical materials.

2 Method

The research is included in the type of qualitative research with descriptive methods (Sugiyono, 2016). The qualitative approach was chosen based on consideration of the type of data collected, namely a description of the learning process and identification of the type of media needed by students. The subjects of this study consisted of 2 teachers of a vocational high school majoring in electricity. The data collection method used is non-test (Ivanovich, 2014), with interview and observation techniques followed by data collection instruments consisting of interview guidelines and observation sheets (Mohamad et al., 2015).

Furthermore, the facts obtained from this research process were analyzed using descriptive fact evaluation through explaining the facts and verifying them. Data received from observations and interviews will be transformed into qualitative form and described descriptively (Ma'ruf et al., 2019).

3 Result and Discussions

The results of the study consist of two descriptions, the first is the result of observations during the learning process, the next is the results of research related to the results of interviews with subject teachers regarding the need for media for learning.

3.1 Observation Results during the Learning Process

From the results of observations made by researchers on the learning process that is currently taking place, information is obtained that:

a) The teacher provides motivation and starts learning with apperception activities to the material to be taught, at the beginning of learning such as giving apperception also tends to be varied, so the teacher does not only convey information but also provides variations in the form of questions related to the material presented.
b) After entering the core process, namely the delivery of material. It can be seen that the teacher tends to dominate the delivery of material orally with the lecture method.
c) The teacher mastered the material presented, considering that it had been several periods that the teacher always delivered the same material.
d) Observations also show that during learning activities, teachers still use non-variative learning media, such as only relying on printed material books, and the internet to support the learning process. Teachers do not seem to use digital learning media or interactive learning media.
e) At the end of the learning session, the teacher provides a summary of the material at each meeting, and provides some feedback to students who dare to express opinions or answer short questions from the teacher during a discussion session regarding the material presented.

3.2 Results of Interviews with Subject Teachers

Based on the results of interviews with teachers who teach at the Electrical Engineering Vocational School, information is obtained that:

a) The teacher as one of the information teaches Basic Electronics material
b) Each teacher stated that there were no obstacles when carrying out the learning process
c) Teachers still use learning media that tend to be irrelevant to technological developments, currently teachers still use printed versions of material books and often use the internet separately as a source to support learning
d) Students' motivation to take lessons tends to be high, however, teachers only measure students' motivation to learn only through a series of daily reflection activities

e) Through this interview activity, it was identified that each teacher agreed that the school had supporting facilities to support the learning process that utilizes ICT
f) One of the facilities it has is a Computer Laboratory, however, its use is only limited to digital simulation subjects
g) It was identified that there are currently no learning resources available in the form of interactive learning media that are integrated with ICT for learning in Vocational High Schools, even though this material, namely the basics of electronics, is one of the core materials for students to master the competence of electricity as one of the major vocational courses. is in high school.

Referring to the results of these observations and observations, it is seen as a whole that learning activities are still teacher-centered, meanwhile in terms of the use of learning resources are also still limited, where teachers only use print learning media, and sometimes learning media sourced from the internet. However, teachers sometimes use the discussion method when the learning process takes place.

4 Discussions

The role of learning media is basically quite fundamental in supporting learning activities (Pratiwi & Meilani, 2018), even more so after we all experienced a crisis during the covid-19 pandemic. The integration of ICT in the learning process is increasingly being found at various levels of education starting from the basic education level. to higher education (Agyei & Agyei, 2021; Talebian et al., 2014). It is also undeniable that the internet has become an alternative choice for teachers and students to obtain additional material (Ling et al., 2020), as well as the results of this study which identified that during learning activities teachers use the internet to support learning activities. However, the presence of the internet that can be accessed by anyone can certainly become a boomerang if it is not observed together, for that other innovations need to be developed in a more integrated form and fulfill the rules as a learning medium.

Currently, digital format learning media have been found and applied to learning activities (Efendi, 2019), this opportunity should be one of the foundations for the development of interactive digital learning media. Unfortunately, until now there are still no teachers who use interactive media to support the learning process. Several studies have shown that the use of interactive media can improve students' critical thinking skills (Pamungkas et al., 2020), in addition, the use of interactive media also contributes to improving academic learning outcomes (Lim et al., 2020; Hadaya & Hanif, 2019), to increase students' interest and motivation (Anwar et al., 2019).

Therefore, in order to optimize the use of ICT and digital learning media, in the development of interactive media products, it is necessary to pay attention to several things, such as the needs of both teachers and students, supporting facilities to the characteristics of the material. As has been done in this research, it was successful in identifying how the learning process takes place in the classroom where data was obtained through observations, and the need as a teacher to facilitate students whose data was obtained from interviews with subject teachers. Thus, it is appropriate to present an innovation in the learning media aspect through the application and development of interactive media to support ICT-based classroom learning.

Overall, teachers and various components of educational institutions must recognize that the role of learning media is currently quite important so that it is proven to have a positive impact on increasing student academic achievement (Pratiwi & Meilani, 2018). Through a series of results of this research, it is hoped that it can be the basis and the first step to develop an interactive media product to support learning activities in vocational high school.

5 Conclusion

Referring to some of the findings and synthesis that have been done, it is concluded that an interactive media innovation for ICT-based learning is needed to support teaching and learning activities in Vocational High Schools, teachers are still dominant as the main learning source with the presence of interactive media, it is hoped that teachers can optimize their role as learning facilitators. Some teachers use the internet as a tool to support the learning process when they need the material being studied, even though the level of actuality and factuality of reading sources from the internet must first be verified by educators so that the understanding obtained by students does not become chaotic. Digital interactive can be one of the right solutions to improve the quality of the use of learning media by teachers which will ultimately have an impact on improving the quality of education and graduates, considering that until now there are no teachers who use interactive media as a medium to support the learning process.

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