

THE IMPLEMENTATION OF TECHNOLOGY-BASED LEARNING MEDIA IN DIFFERENTIATED LEARNING BASED ON THE LEARNING STYLES

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Abstract

Differentiated learning is one of the learning strategies in teaching that focuses on the students as the subject of the learning process itself. Differentiated learning can be implemented in several aspects, including: Content differentiation, Process differentiation, Product differentiation, and Learning environment differentiation. Meanwhile, this research only focuses on the implementation of content differentiation based on the students' learning styles. The technology-based learning media aimed in this research includes Kahoot, Teachmint, Spinwheels, Jamboard, Worldwall, etc. The methodology of this research is qualitative research using descriptive analysis techniques accompanied by literature review. There are several techniques in collecting the data such as research paper, books, and other relevant literature. The finding shows that the use of technology-based learning media helps the implementation of differentiated learning as it can be varied based on the students' learning styles. Therefore, teachers may use technology-based learning media to increase the students' participation in the learning activity process.

Keywords: *Technology-Based Learning Media, Differentiated Learning, Learning Styles.*

Introduction

Every individual is born different from a physical perspective to their learning needs. Therefore, liberating learning is needed especially in learning practices. Ki Hadjar Dewantara has a concept about education that is based on the principle of independence which means that humans are given freedom from God Almighty to regulate their lives while remaining in line with the rules in society. Students must have an independent spirit in the sense of being independent physically and spiritually as well as their energy (Ainia, 2020).

Therefore, to create liberating learning, differentiated learning based on the learning styles of students' is needed to be implemented. Differentiated learning should aim to meet the needs of all students regardless of their learning ability. Differentiation may happen with these following differentiated aspects: content, process, product, and learning environment. Instruction can be tailored based on three student characteristics – readiness, interest, understanding, and skills as it relates to the subject matter (Van Garderen & Whittaker, 2006, p. 12-13).

To support the implementation, technology-based learning media which is in accordance with the nature of the times is needed. Technology-based learning (TBL) constitutes learning via electronic technology, including the Internet, intranets, satellite broadcasts, audio and video conferencing, bulletin boards, chat rooms, webcasts, and CD-ROM. TBL also encompasses related terms, such as online learning and web-based learning that only include learning that occurs via the Internet, and computer based learning that is restricted to learning through the use of computers (Koller, V., Harvey, S., & Magnotta, M, 2006). According to Gerlach and Ely in research done by Akrim (2018), media in general are human, material and events that build conditions to make students able to acquire knowledge, skills or attitudes.

Several researchers have focused on the relationship between differentiated learning media and teaching methodologies, but none have linked it to students' learning styles. Therefore, it is hoped that by doing the implementation of technology-based learning media in differentiated learning based on learning styles which can provide students with personalized and engaging learning experiences, teachers can tailor instruction to meet the diverse needs of their students and create more inclusive and effective learning environment. In this article the

author wants to describe the application of technology-based learning media in differentiated learning based on students' learning styles. As for this article, the author will not focus too much on the types of aspects of differentiation, but on the technology-based learning media used in several styles of learning owned by students.

Method

This research uses a type of qualitative research using descriptive analysis techniques with literature studies. Literature study itself is a method in which data is collected through various kinds of literature and then reviewed and recorded. After that, management was carried out on the research materials obtained (Pilendia, 2020). After various data has been collected, then an analysis is carried out to obtain a fact of the incident and then it is written down in the form of a statement, all of which are based on the data that has been carried out by the research. In research there are a series of stages of describing a data by collecting data through various sources in the form of research articles, books, and other literature related to the use of technology-based learning media in differentiated learning based on students' learning styles. After all these theories have been collected, then all data is managed and associated with relevant theories so that a concept can be produced in this study.

Findings and Discussions

An article by Ema (2018) about how to use technology for different learning styles explains about kinds of media that can be used for several learning styles that owned by the students. In this article the the author mentions that there are three kinds of learning styles, they are visual, auditory, and kinesthetic learning. Each of the learning style has a different technology-based learning media. For example, the teacher may use a PowerPoints that outlines key points and include pictures, and diagrams for visual learning students. The teacher may also use videos posted from YouTube or the video made by the teachers themself to help the visual learning students. While, the teacher may use Skype and Me Books for auditory learning students. Through Skype the students can connect with classroom around the world and for sure this can help the students further to develop their conversational skills. The teacher may also use Me Books which is the application for the students in which they can read along as a voice recording reads aloud. They can also choose to record their own voices while practice reading. Even though the application is costly but it helps the student a lot not only in correcting their pronunciations but also getting new words. And the last is kinesthetic learning. In this article, the author includes website media that can help the students with the kinesthetic learning styles such as the website called PHeT Interactive Simulations that operated by the University of Colorado boulder offers educational games to help students with math and science. The teacher might also use the Technology based learning media from the words from the application that is called Hakitsu: Code of the Warrior which is an application that teaches children how to code as they play a game. Kinesthetic learners learn best when information is presented as an interactive game.

The conclusion of this article is as the teachers integrate technology into their lesson plans, they can also use various technology tools to reach all types of students. Some online activities gotten from the application or the website which combine the visual sounds and the interactive objective which engage with all students with those three learning styles.

Another research done by Amalia, W. (2018) explained about The Implementation of Learning Media Based on ICT in Mathematical Learning Process in Elementary School. here are the results of this reasearch : (1) the learning process becomes more interesting when using learning media ICT-based so students would motivated to love the science that's being he had learned; (2) a teacher can be more effective and efficient in the serving subject matter if it can benefit from the media are good and right; (3) the process of learning to use media can be

designed into an interesting, fun learning so that students do not quickly bored, and can motivate and stimulate students to morale in learning.

A research done by Nicolau, C., Matsiola, M., Kalliris, G. (2019) entitled Technology-Enhanced Learning and Teaching Methodologies through Audiovisual Media tried to capture audiovisual media technologies as educational techniques and tools and provide a synopsis of their employment in different educational levels and disciplines where technology-enhanced learning could be employed and achieve the aims and objectives of cognitive subjects. The result is that The use of audiovisual media technologies in the educational procedure can generate motivation and stimulation of perceptual skills that will lead to enhanced learning outcomes.

Al-rsa'i, S. M. and Shugairat, M. (2019) in their research "Technology Driven Differentiated Instruction in Science Teaching" investigate how to implement differentiated instruction in Science teaching by using technology. The result showed that using technology in teaching Science by Differentiated instruction method requires that Science teachers employ the (TPACK) model, so that technology is properly employed enhancing Differentiated instruction in teaching science. In addition, to raising the efficiency of these teachers and enable them to use the technological programs and tools that develop the implement of differentiated instruction in Science teaching.

Demir (2021) in his research about the impact of differentiated instructional media on the motivation and opinions of students towards science learning in terms of learning styles which aimed was to determine the motivation of students to learn science according to learning styles and the effect of differentiated teaching practices on their opinions shows the result that providing students with the opportunity to use student-centred techniques in their differentiated instructional methods provides not only positive contributions to the success of the students, to their active involvement in the process, to the increase in classroom awareness, and their motivation but also to increase the students' awareness of the students who are in motion due to their duties and responsibilities within the class.

Conclusion

The implementation of technology-based learning media in differentiated learning based on learning styles can provide students with personalized and engaging learning experiences as it is a powerful tool for enhancing the teaching-learning process and can provide personalized and adaptive learning experiences that cater to the diverse needs and interests of learners. Technology-based learning media can also be used to support different learning styles and improve students' motivation and engagement in the learning process.

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