

Development of Edmodo LMS-Based Transformation Learning Model for Character Building of Middle Education Unit Students in North Sumatra Province

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ABSTRACT

Education in the era of globalization must be the main focus and the birthplace of goodness to transform individuals and communities in social life. Students must be able to demonstrate a level of independence and tolerance for uncertainty in order to support the formation of student character. They must be given continuous guidance until they understand the appropriate behavior patterns in dealing with the situations and conditions they face. The online learning environment that occurs today and in the future must be designed to allow reflection, collaboration, and contextualization of information as well as being able to transform it in the form of conscious, ethical and characterful behavior as a form of identity in social interactions. Teachers as agents of change from a student-focused learning paradigm still tend to be practiced to a rigid form of learning even though the concept of learning is student-oriented. Learning is done by integrating subject matter in online form or using information and communication technology applications, has not been able to increase student activity and involvement in the learning process. The challenge is to ensure that learning innovations play a constructive role in the character building of students by increasing learning opportunities that are integrated with the Edmodo LMS. The development of the Edmodo LMS-based transformative learning model provides opportunities for teachers and students to open groups and discussion spaces as an effort to increase student activity and involvement in dignified learning effectively and efficiently.

Keywords: *Edmodo, LMS-Based, Transformation.*

1. INTRODUCTION

Advances in technology so fast and rapidly nowadays have provided various conveniences for the community in carrying out all forms of daily activities, especially in accessing all information quickly. These technological advances also have a significant influence on the order of family and community life. Current technological advances, especially internet-based, have a positive impact and can also have a negative impact on the development of students. Where technology media can be through laptops, gadgets, computers, tablets and so on which can provide convenience for students to access information via the internet anywhere and anytime. This challenge is also an opportunity for all about how the use of technology can help bring students to become independent, creative and innovative learners. It is therefore imperative that an education system is created

which is capable of rapid adaption to its technological, social, cultural and political environment [1].

The implementation of the education system underwent a transformation in various lines of activity, including learning activities which were all forced to take place online. This study confirms that every element involved in learning activities is unprepared for spontaneous changes during the Covid-19 pandemic and also to answer future challenges. The usual learning system that takes place with direct interaction between elements (educators and education staff and students) turns into indirect interaction learning. Restrictions on direct interaction in education sometimes occur in certain situations but not within the context of social restrictions. In this condition, it turns out that the social relations of students are disrupted. Communication that has been taking place face-to-face has become limited and even rarely done in the scope of learning between students.

Every individual must be responsive to the limitations during the pandemic to remain productive in their field and interpret this pandemic condition as part of a change that still must prioritize representative attitudes and behaviors in the new order to create varied learning spaces. In the end, this study confirms that every change in the learning system can design new conditions and has a distinction with previous and future conditions, so each related element must be able to adapt to these changes to realize comprehensive learning success, [2].

The findings obtained from this study are students who are less able to understand the content of the material that has been presented via online media by the teacher, the internet network is sometimes disrupted, the lack of use of online learning media so that some subject matter requires certain learning tools and/or media. cannot be conveyed by the teacher optimally. [3]. The implementation of the learning system in the education unit underwent a change in operational form which was transformed through learning policies and following social policies.

2. THEORETICAL REVIEW

2.1. Learning And Behavior Change

Gagne [4] defines learning as a change in a person's behavior or abilities, which can be maintained, and not only considered as a growth process. Learning according to Gagne is not something that occurs naturally but will only occur in the presence of certain conditions, namely (1) internal conditions, which include student readiness and what has been studied previously, and (2) external, which includes learning situations and the presentation of the stimulus intentionally by the teacher. Gagne explained that the extent to which a person remembers as a learning outcome (remembering as a learning outcome) can be categorized into three types, namely: 1. Recognition, is a person's ability to retain memories and recall about a place, object, sequence and so on. In other words, the ability to recognize something. 2. Recall of Verbal information, is a person's ability to express what he remembers in the form of language and make associations and reasoning to identify something. 3. Reinstatement of Intellectual skills, is a person's ability to distinguish, combine, classify, apply rules, and solve problems.

Bloom [5] divides learning outcomes into three domains/domains, namely: 1. Cognitive domain, which contains behaviors on intellectual aspects, such as knowing, understanding, applying, analyzing, synthesizing, and evaluating. 2. Affective domain, which contains behaviors on aspects of feelings and emotions, such as interests, attitudes, appreciation, and ways of adjustment. 3. Psychomotor domain (psychomotor domain), which contains behaviors on aspects of motor

skills such as typing, swimming, operating machines, and others.

To achieve learning outcomes, teachers can facilitate student learning based on learning theories. Cognitive learning theory examines the way people think. Mental processes are an important part of understanding how a person learns. Cognitive theory understands that learners can be influenced by internal and external elements. Cognitive learning theory impacts students on how their understanding of their thinking processes can help them learn. Teachers can provide opportunities for students to ask questions, fail, and think hard. This strategy can help students understand how their thinking processes work, and utilize their knowledge to build better and meaningful learning opportunities. [6].

Behaviorism learning theory is the idea that how a learner behaves is based on their interaction with their environment. Stavredes [7] states "In the constructivist model, learners became dynamic members in the development of their learning while the teacher served as facilitator". This suggests that behavior is influenced and learned from external forces rather than internal forces. Teachers in the classroom can use positive reinforcement to help students learn a concept better. Learners who receive positive reinforcement are more likely to retain information moving forward, a direct result of behaviorism theory. [8].

Constructivism learning theory is based on the independent idea that students actually create their own learning based on their previous experiences. Learners take what is taught and add it to their previous knowledge and experience, creating a reality that is unique to them. This learning theory focuses on learning as an active process, which is personal and individual for each student. Teachers can use constructivism to help understand that each student will bring their own past into the classroom every day. Teachers in constructivist classrooms act more as guides to help students create learning on their own terms. Students help themselves create their own processes and realities based on their own past. It is important to help many types of learners take their own experiences and incorporate them into their learning. [9].

Huitt [10] explains, humanism is closely related to constructivism. Humanism focuses directly on the idea of self-actualization. Everyone functions under a hierarchy of needs. Self-actualization is at the top of the hierarchy of needs—these are brief moments where a person feels all their needs are being met and that they are the best version of themselves. Everyone strives for this, and the learning environment can move toward meeting needs or away from fulfilling needs. Teachers can create a classroom environment that helps students get closer to their self-actualization. Educators can help meet the emotional and physical needs of learners, providing them with a safe and comfortable place to study, plenty of

food, and the support they need to succeed. This kind of environment is the most conducive to helping students learn.

Connectivism is one of the newest educational learning theories. In the post technology word, Siemens [11] proposed “connectivism as a learning theory for the digital age”. In connectivism, knowledge is distributed across networks where connections and connectedness inform learning. It focuses on the idea that people learn and grow when they form connections. This could be a connection to each other or a connection to their roles and obligations in their lives. Hobbies, goals, and people can all be connections that influence learning. Teachers can leverage connectivity in their classrooms to help students make connections to things that excite them, helping them learn. Teachers can use digital media to make good and positive relationships with learning. They can help create connections and relationships with their students and with their peer groups to help students feel motivated to learn.

2.2. The Use of E-Learning In Instructional Programs

E-learning or electronic learning is used to provide instructional programs to students who are separated by distance and from instructors or teachers. Using the Internet, computers, networks and multimedia technologies. There are many definitions of e-learning. According to Garisson and Anderson (2003), as quoted in Muhammad Rais and Yusup Hashim [12], e-learning is a network or online learning that takes place in a formal context and uses various multimedia technologies. It is a learning system that is supported by electronic hardware and software both online (synchronous) and offline (asynchronous). Chan et al. [13] highlight that e-learning includes computer-enhanced learning or training which is usually delivered via personal computers. Learning is delivered by other communication technologies whose delivery methods include online lectures, tutorials and learning support systems. Effective e-learning is often a mix of methods. E-learning also refers to a variety of applications and processes designed to deliver instruction via electronic devices such as CD-ROMs or video conferencing via satellite transmission. It also includes online learning, web-based training and computer-based training. This means that e-learning is the use of technology to enhance classroom interaction through a positive environment through the Internet, CD-ROMs, interactive multimedia and others. It is self-study in which learners engage in online tutorials to complete the tasks assigned to them. Learning through this media can attract students' interest because it is usually equipped with interactive graphics, text, sound, video, collaborative sharing and others. At the same time, it can be accessed anywhere and anytime as long as we have a computer and an internet connection. E-learning can improve access to education and training, quality of

teaching and learning and marks the need for higher institutions to maintain a competitive advantage in this changing market for learners.

This means that e-learning can improve the quality of teaching and learning. There are many advantages and disadvantages of e-learning. Previous research has found that e-learning is more cost-effective than traditional learning because students spend less time and money traveling. This means that when students start e-learning, they can save money. Their free time can be used to do other useful activities. Apart from that, flexibility is another major benefit of e-learning. E-learning gives students the advantage of taking classes anytime and anywhere. In addition, e-learning also serves various types of learning approaches. This means students will not be bored during their studies as there is a lot of interactive content that they can access.

There are many types of online learning (e-learning) that can be used today, such as the Learning Management System (LMS). LMS is “a software used to create web-based online learning materials and manage learning activities and results” [14].

Liaw and Huang [15] explain that e-learning serves to provide various kinds of learning media and alternative sources of information. In addition, e-learning also supports collaborative communication, where users have full control over the desired learning situation.

Hamreus [16] explains that development is said to be a systematic process to improve instructional quality, while Clarence Schauer (1971) explains that instructional development is a common sense planning to identify learning problems and seek to solve these problems by using a plan for implementation, evaluation, trials, feedback, and results.

2.3. Edmodo Application Based Learning Experience

Edmodo is one type of LMS that is easy to use with an interactive and practical interface. Edmodo which is also cloud-based collaboration is an application that is quite safe for use by teachers and students [17]. Research conducted by Pratama and Ismiyati [18] states that students gain new learning experiences through Edmodo, can be more expressive, the learning atmosphere (chat) is very relaxed, and learning materials.

The ability of Edmodo that can be accessed online without being limited by space and time is expected to change boring learning scenarios to be more interesting and fun for students so that learning becomes more effective and meaningful.

3. METHOD

This development research is focused on developing e-learning using Edmodo as an online learning platform

to provide a collaborative-cooperative learning experience that can be done in groups and is student-centred through transformative learning models.

Research objectives this research was conducted to: 1. determine the level of exposure of students to Edmodo-based LMS. 2. investigate the effectiveness of using Edmodo-based LMS among public secondary school students. 3. determine the advantages and disadvantages of Edmodo-based LMS.

Research design This quantitative study involved 25 students studying at a public high school in Medan City. A copy of the questionnaire consisting of three parts was used as an instrument to collect data. Part 1 contains the demographic factors of students. Part 2 is to identify learners' involvement in the Edmodo-based LMS. Section 3 is to investigate the effectiveness of using an Edmodo-based LMS for character building among public secondary school students. In this section, students were asked to rate ten statements according to the following scale: 1- strongly disagree, 2- disagree, 3-not sure, 4-agree and 5-strongly agree. The last part of the questionnaire was to determine the advantages and disadvantages of using an Edmodo-based LMS from the perspective of the learners.

4. RESULT AND DISCUSSION

4.1. Access to Use Edmodo

From the results of data analysis shows the demographic factors of the respondents. A total of 25 students participated in this study. 52.3% were female while 47.7% were male students. 40.3% of respondents were 17 years old while 24.2% were 16 years old (20.3%) and 15.2% were 15 years old. Next is the percentage of places where students have access to Edmodo. The majority or 43.85% of students access Edmodo through their computers at home; 28.74% of students have access Edmodo to their friends' homes temporarily; 14.76% have access to Edmodo in internet cafes; and 12.65% have access to school.

Percentage of preferences for the type of Edmodo that students always use when they study. The higher type of Edmodo is internet (42.85%) followed by video or audio tape (23.85%), CD-ROM (21.52%) and discussion forums (7.73%). The lowest type of Edmodo is using online courses with (4.05%).

All learners have involvement with e-learning because they have basic knowledge in computers and the internet. According to Shelly & Vermat [19], computers can be available anywhere such as at work, school and home. And at the same time, computers and the Internet are the main means of interaction between local and global communities. It is not surprising that teachers also use computers to help them with classroom instruction while students use computers to complete assignments.

4.2. The Effectiveness of Using Edmodo-based LMS among State High School Students.

Based on data analysis with the highest mean score of 4.51 and standard deviation of 0.72, the students acknowledged that the Edmodo-based LMS had given them greater flexibility in character building that was integrated with teacher-assigned subjects as well as in terms of independent study. Chan et al. [13] stated that one of the benefits of e-learning for students is that it can serve various learning styles of students. Fioriello [20] states that students have the choice to choose what they like and e-learning attracts them to topics they like and enjoy. From the researcher's point of view, students have the autonomy to choose the type of e-learning tools they prefer to use. Usually, students choose the internet as their primary e-learning tool and CDROM as their second choice. This happens because current students can access the internet easily because they have a connection at home (43.85%). Having the internet is important because it can provide them with knowledge, moral values, various forms of culture and current practices that can build their character. The lowest mean score seen in the Edmodo-based LMS statement helped me understand my lessons effectively compared to the lecture method (mean: 4.15, SD: 0.65). This is not surprising considering that the Edmodo-based LMS application contains discussion rooms and more interesting material that can make students happy to learn. Liam and Huang [15] as cited in Borstorff and Lowe [21] found that web sites, the diversity of multimedia inputs such as video, audio, photos, and online chat rooms, have enabled learners in their studies to seek knowledge that will relate to their experiences. their previous personal experience and engage them in an interdisciplinary experience. According to Chan et al. [13], previous research has shown that online learning can provide a variety of delivery methods to cater for different types of learners when compared to traditional classrooms. In addition, from the perspective of Bloom's Taxonomy, e-learning is an effective learning tool [22]. Thus it can be explained, Edmodo-based LMS can provide an interesting learning style in groups and improve students' academic achievement. Students can be more active because they can learn more flexibly both in groups and independently and are able to improve their thinking skills. Learners can have a systematic lesson because the Edmodo-based LMS application provides content and exercises that are displayed in the form of verbal, video, animation, and sound.

The effectiveness of using Edmodo-based LMS among students. The statement that the Edmodo-based LMS gave me greater flexibility to choose subject matter in groups or independently with a mean score of 4.56 and standard deviation of 0.78. Edmodo-based LMS can

provide more advantages than disadvantages for students' academic achievement with a mean value of 4.38 and a standard deviation of 0.67. The Edmodo-based LMS does not provide a time limit for discussion, the average value is 4.37 and the standard deviation is 0.72. Edmodo-based LMS can improve the skills of asking and expressing my opinion, the average value is 4.26 and the standard deviation is 0.72. The Edmodo-based LMS provides a good instructional learning program to students even though the students are far from the teacher, the average score is 4.25 and the standard deviation is 0.75. Edmodo-based LMS provides complete content in student learning with good practice, the mean score is 4.28 and the standard deviation is 0.76. Edmodo-based LMS helps students to make students' lessons more organized, the average value is 4.17 and the standard deviation is 0.68. The Edmodo-based LMS provides students with a different way of learning and can make learning more enjoyable for students, with an average score of 4.12 and a standard deviation of 0.64. Edmodo-based LMS helps students learn more effectively than classroom learning, average grades. 4.25 and standard deviation 0.65. [23]. The students who took the online course performed better than the others.

Based on data analysis, 23.85% of students acknowledged that the main advantage of Edmodo-based LMS as a form of e-learning is that it allows learning anywhere. According to Chan et al. [13], e-learning provides convenience and portability because students can access it anywhere, namely at home, at work or while traveling. Researchers agree that e-learning provides benefits for students in terms of easy access anywhere. Based on the analysis of the data above, it is not surprising that 43.85% of students get internet access at home because most homes currently have computers and internet connections.

The advantage of using an Edmodo-based LMS is that it allows learning anytime by 18.75 %. It allows learning anywhere by 20.85%. Developing the independence of students by 22.56%. Helping the development of learning skills by 18.14%. Learners can use the tool that best suits their own learning style by 17.66%. Others amounted to 2.04%. Wlodkowski [24] claims that "learners learn more using computer-based instruction in comparison to traditional classroom methods." One possible factor for this seems to be the increased level of learner participation through interactivity. This results in higher levels of cognitive engagement and perseverance to complete the task.

5. CONCLUSION

Learning with LMS-based LMS based on Edmodo has become an influential learning model today. Based on this research, it can be concluded that students are

highly motivated to learn with Edmodo-based LMS in building students' character. This study has also proven that Edmodo-based LMS can provide greater flexibility to build student character that is integrated in teacher-led subjects or independent learning among students. The main advantage of an Edmodo-based LMS is that it allows learning at any place and time while the disadvantage is that students may be required to purchase a computer or go to an internet cafe to use a computer, thereby reducing opportunities for face-to-face contact between friends. In short, Edmodo-based LMS is an application of information and communication technology that can be integrated in the teaching and learning process in the form of culture and moral values related to the character building of students. This allows students to learn effectively but in the end it is the teacher who still needs to play a role and carry out their duties so that the learning process can occur.

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