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Research Article

The Impact of Diffusion of Innovation on Classroom Management

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Abstract.

The integration of digital technology in the school environment has led to transformative changes in classroom management, affecting both teachers and students. Teachers play a central role in this process, and research on classroom management innovations highlights various variables that influence learning outcomes. Consequently, schools must grasp the implications of adopting these innovative practices. This study employs a qualitative approach, focusing on in-depth exploration of specific scenarios related to the use of digital technology in classroom management. Interviews were conducted with school administrators, including principals, teachers, and students from secondary schools. The findings indicate that the post-COVID-19 learning environment, with the widespread use of digital technology, has significantly impacted students. The incorporation of digital tools has empowered students to manage their time effectively and actively participate in class activities. Teachers, on the other hand, have embraced digital technology for online classes and blended learning approaches, thereby enhancing students' understanding and engagement in learning. Additionally, the evaluation processes implemented by schools have facilitated the establishment of effective learning models, resulting in the successful diffusion of innovation in classroom management. Future research could further enhance the curriculum and education system by exploring additional opportunities for utilizing digital technology in education.

Keywords: diffusion of innovation, digital technology, management class

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1. Introduction

In learning, the teacher plays an important role in the diffusion process of innovation. The efforts in spreading innovation are through collaborative learning between students and students, students and teachers, teachers and teachers, or other teachers and educators. The reflective learning model characterizes deep and wise thinking [1].

Sasaki, M. (2018) indicated that when the teachers are not applied diffusion of innovation in learning, it makes difficult for students to be creative and innovative in learning and their future lives. Rogers, E in his book Diffusion of Innovation (1983) explained that

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the process of innovation is communicated through certain channels over time among members of a social system, where decisions are not authoritative or collective. And each member of the social system faces their innovation decision following a 5-step process: (1) knowledge - by which people become aware of an innovation and have some idea of its function. (2) persuasion - where people form favorable or unfavorable attitudes toward the innovation. (3) Decision - where people engage in activities that lead to the choice to adopt or reject the innovation. (4) Implementation - where people implement the innovation. (5) confirmation - where people evaluate the results of innovation decisions that have been made. Adopting an innovation can be relatively fast by implementing this five-step process; if there is disagreement, it will still adopt the innovation. Factors that influence innovation adoption can explain how early adopters greatly influence the innovation decisions of later adopters [2]–[4]

Previous research by Stošić & Stošić (2013) stated that teachers with knowledge and experience in teaching innovation mostly shared their knowledge and expertise. Other researchers Grgurovic, M. (2013) described that academics who are knowledgeable and experienced in innovative teaching are more likely to talk to peers and are also knowledgeable and experienced in innovative teaching. Wu et al. (2015) revealed that that many new teachers ask for references from experienced teachers in teaching to provide needs for sharing expertise and experiences and discussing with the minds of innovative teachers. Since discussions about teaching innovations are unlikely to occur between the more knowledgeable and the less knowledgeable, the diffusion of knowledge and expertise in teaching does not occur.

The function of the innovation must first understand the diffusion of innovation in managing the class. The knowledge stage provides new ideas about developing understanding and forms favorable or unpleasant attitudes about these changes. According to Rogers et al., (2019) recognized that everyone goes through steps at varying rates and can influence the way others respond to and adopt innovations. Teachers must be able to use digital technology as an innovation in teaching. Digital technology is one form of teaching and learning innovation. Nevertheless, not all teachers can quickly adopt technology, the majority are late and slow, and some refuse. There are times when institutions provide input and punish in certain ways for refusing[5], [6]. How to change teacher attitudes which are at the core of teaching and use digital technology in teaching so that an effective tipping point can pass through teachers, educators, school administrators to show a clear attitude that their positive impact can integrate into the school system [7]. In the previous research by Stošić, & Stošić, (2013) stated that the diffusion of innovation in educational activities is a synchronized pedagogical, social

and institutional, and economic measure. Researchers Kamau, L. M. (2014) indicated that the big effect of technology training on teachers' decisions to adopt technology to be practiced in class. Many teachers are unskilled, the lack of digital technology results in teachers not being motivated to attend the training. In addition, the small incentive for teachers not to be able to practice digital technology at their own expense creates new problems by quitting classes being taught. Institutions made radical changes to conduct teacher training using digital technology to understand digital technology.

Karaulova, et al. (2017) revealed that teachers who understand using digital technology will be able to manage the class easily so that learning can run well. Institutions that adapt and transform the school's innovation system can analyze learning by showing student learning outcomes by changing the curriculum from traditional to online, resulting in maximum quality of learning.

Based on the previous researchers this research concluded that a radical change in the curriculum from traditional to online has triggered teachers to adapt and have to adopt digital technology to teach online classes. They were making it easier for teachers to manage online classes. Teachers who find it difficult to adopt digital technology must train themselves with institutional incentives [8].

The research aims to investigate the teachers' impact of diffusion of innovation in using digital technology and how to manage the online class. Also, to seek the teachers in managing the online class.

2. Methods

This study uses a qualitative approach design to explore respondents' perspectives on the topics discussed. The purpose of using case studies is not to build old theories for a particular phenomenon but to study a phenomenon or event in detail [9]. This data study's number was two school officials, secondary school teachers, and secondary school students. The interviews and group discussion forums (FDG) were conducted via WhatsApp and Google Meet a virtual meeting media. Interviews used semi-structured, and in FDG, researchers interviewed teachers and school officials on the one hand and students on the other, in different places. The researcher interviewed using the Google Meet a virtual meeting media, and students were asked one by one and answered in private to the researcher. All respondents have a device using either an android or a laptop with Internet data in it. There are 10 questions, but each respondent does not have the same problem. Questions for school officials were also asked for teachers and

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students. Some respondents may only have eight questions, and some may have 10 or more questions.

3. Results And Discussion

Researchers found that adopting digital technology is a critical point where small changes and teaching progress have accumulated to get significant learning towards educational progress. In managing the classroom, the teachers seek to change and train themselves to teach online [10].

"From the interview to school officials indicated that schools as educational institutions have updated the online curriculum with digital technology training for teachers and students, and school employees to be able and skilled in using digital technology, and there are no obstacles in applying digital technology."

"Every semester, all school components, from principals, school officials, teachers, employees, and officials and laboratory officers, receive training according to their fields."

Interviews given to the teachers stated that they received training every semester. Here is what the teacher said in our interview:

"In digital technology training for teachers, many teachers are creative in presenting their knowledge. Still, few teachers find it difficult to present their knowledge using digital technology because of the lack of knowledge of digital technology."

"Many classes run slowly, and the students seem bored because the teacher is practicing and teaching simultaneously. Moreover, it becomes an obstacle to the diffusion of innovation. This condition is important for school officials to continue to train teachers in digital technology as a diffusion of innovation."

Management classes in online learning for secondary students are responsible for the characteristics between teachers and students and are regulated in the curriculum. In the classroom, study time using digital technology should be emphasized. Teachers and students should not be online all day (Marope et al., 2018).

Interviews with students in the secondary class stated that teaching in class and online classes are different and the following interview:

"In post-COVID-19 classroom learning, many teachers still use an online curriculum where teaching is done online even though the classroom is face-to-face. But we do not

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mind this, and it is just that many teachers still find it difficult to use digital technology, so the class runs slowly."

"If the teacher uses digital technology and a face-to-face classroom curriculum, the learning is quite smooth, and we understand the learning."

"The combination of online and in-class learning creates good learning because we understand and, at the same time, learn digital technology that we did not understand before."

Furthermore, students learn to manage their time and participate in class. Class management must be useful for the class. The main determinant of online learning success lies in teachers who are successful in using digital technology, which is reflected in established theories and models that evaluate the recipients of digital technology as innovation. Diffusion of innovation is slow where complexity has no significant impact, and the diffusion of innovation is slow [11].

However, in the classroom, not all students can use digital literacy well. The use of digital technology in learning is a new thing. At this stage, innovative ideas in digital technology can develop an understanding of the function of innovation [12]. Students who adopt digital technology in the early days will be attracted to new ideas through positive responses to teachers. Students realize that the use of digital technology can meet learning needs. Teachers who are slow to adopt digital technology make learning hampered or sometimes stalled because all learning resources and information are taken from the Internet (Ismail, 2006; Stošić & Stošić, 2013).

Moreover, teachers must understand how to choose competent sources in learning. If the teacher chooses the wrong learning resource and does not want to ask the teacher who understands, it will give wrong knowledge and become a problem in learning [10]; [13]. Therefore, if a student and teacher who rejects digital learning must be persuaded and trained by the school to continue to adopt digital technology so that the diffusion of innovation in learning can run well (Rogers et al., 2019), furthermore, students and teachers who are persuaded to use digital technology will form a favorable attitude in their self-change. Thus, students and teachers can confirm that digital technology is an innovation (Bongomin et al., 2020; Mardiana, 2020a). Moreover, students and teachers who apply new learning ideas and confirm their decisions evaluate their learning outcomes that the diffusion of technological digital innovations provides new conveniences and competencies [7]. Competent teachers can direct students to follow

these steps with varying speeds and acceleration and influence other people or parents to respond and adopt innovations.

In Rogers' theory, the diffusion of innovation occurs in learning and has an impact on students. In the previous research by Grgurovic, M. (2013) stated that applying the learning management system as an innovation in learning emphasizes that relative advantages, complexity, trialability, observability must be examined first, which then enters the stage of the analytical decision process in the form of innovation (knowledge, persuasion), decision, implementation. In adopting digital technology, teachers and students at the same time monitored the adoption of school service from school officials [5].

Teachers and students who master and are skilled in adopting digital technology will quickly follow the acceleration of the rate of diffusion of innovation. Meanwhile, teachers and students who have problems with accelerating the diffusion rate of innovations using digital technology can be a trialability process that refers to the ability to test a system and have not decided to implement the process. It deals with innovation, trialability which is described as the innovation that is tried on a limited basis [13].

The function of innovation is influential in managing the classroom. The knowledge stage provides new ideas about developing understanding and shaping attitudes.

Teachers and students who are accustomed to traditional or face-to-face classes will be slow to adopt digital technology. In this process, school officials will provide input and training on digital technology. If there are teachers who reject the adoption of this innovation, then there are certain ways to punish them. In changing teachers' attitudes at the core of teaching and digital technology, it can be integrated into the school system by synchronizing pedagogical, social, institutional, and economic steps [8]

Furthermore, in improving the quality of educational work, the rational use of human resources, time, and creativity of teachers and students can classify the diffusion of innovations in the education system [12].

4. Conclusions

The use of digital technology in learning has an impact on managing the classroom. The diffusion of innovation in teachers and students who are mastered and skilled in adopting digital technology will quickly follow the accelerated pace of learning development. Meanwhile, teachers and students who have problems using digital technology undergo a trialability process, which refers to the ability to test a system and have not decided to implement the process. It deals with innovation, trialability which

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is described as the innovation that is tried on a limited basis. Improving the quality of educational work, human, time, and creativity of teachers and students provide a classification of innovation diffusion in the education system. Therefore, the continuity between the diffusion of innovation, digital technology, and classroom management makes online learning for the 21st century

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