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The Effect Of Digital Technology Use On Students' Learning Motivation

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Abstract

The rapid development of digital technology has brought significant changes to various aspects of life, including higher education. The utilization of digital technology in the learning process provides easier access to information, greater learning flexibility, and supports the creation of a more interactive and innovative learning environment. This study aims to analyze the effect of digital technology utilization on the learning motivation of university students. The research employed a mixed-method approach that combined quantitative and qualitative methods. The participants consisted of 40 university students selected through random sampling. Data were collected using Likert-scale questionnaires, observations, and semi-structured interviews. Quantitative data were analyzed using simple linear regression, while qualitative data were analyzed descriptively to support the interpretation of the findings. The results revealed that digital technology utilization has a positive and significant effect on students' learning motivation, with a significance value of 0.001 ($p < 0.05$). The coefficient of determination ($R^2 = 0.52$) indicates that digital technology contributes 52% to students' learning motivation. In addition to enhancing student engagement, digital technology promotes independent learning, increases learning interest, and facilitates access to various learning resources. Therefore, the appropriate use of digital technology can serve as an effective strategy for improving students' motivation and the overall quality of learning in higher education.

Keywords: Digital technology, learning motivation, university students, digital learning, higher education.

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INTRODUCTION

The development of digital technology in the era of globalization has brought about rapid changes in various areas of life, including education. Universities are required to adapt to these developments to make the learning process more effective and relevant to the needs of the times. Students, as the digital native generation, are intimately familiar with the use of smartphones, laptops, the internet, and various digital-based learning applications.

The use of digital technology in learning offers various conveniences, such as broader access to information, flexible study times, the availability of interactive learning media, and ease of academic communication. This enables students to learn independently and be more active in the learning process.

Motivation to learn is a crucial factor in educational success. Students with high learning motivation tend to be enthusiastic about learning, disciplined, actively participate, and achieve optimal learning outcomes. Conversely, low learning motivation can lead to low student engagement in learning.

Research conducted by Bond et al. (2020) shows that the use of digital technology can increase student engagement in the learning process. Ryan and Deci (2020) also explain that a supportive learning environment can enhance students' intrinsic motivation. However, excessive use of digital technology can also lead to impaired focus due to uncontrolled social media use.

Based on this description, this study aims to analyze the influence of digital technology use on student learning motivation in higher education. Although various previous studies have shown that digital technology can enhance learning effectiveness, most research still focuses on the use of technology as a learning medium in general. Prior research has not specifically addressed the influence of digital technology on student learning motivation in higher education. Therefore, this study was conducted to provide an empirical overview of the influence of digital technology use on student learning motivation, thus providing a basis for developing more effective digital learning.

METHOD

This study used a mixed methods approach, combining quantitative and qualitative methods to obtain more comprehensive data. The study involved 40 students selected using random sampling.

Data collection techniques included:

1) A questionnaire using a Likert scale to measure students' learning motivation.
2) Observations of student activities during learning.
3) Semi-structured interviews to obtain in-depth supporting data.

Quantitative data analysis was performed using simple linear regression with the equation: $Y = a + bX$ with a significance level of 0.05. Meanwhile, qualitative data were analyzed descriptively to strengthen the interpretation of the research results.

Research Implementation Flow

First, the Mixed Methods Approach, a research approach that combines quantitative and qualitative methods in one study to obtain more complete, in-depth, and comprehensive data. Quantitative methods

are used to obtain numerical data, while qualitative methods are used to understand phenomena more deeply through observation, interviews, and documentation.

Second, Data Collection (Questionnaire, Observation, Interviews): Questionnaires are used to obtain data regarding respondents' perceptions of teachers' teaching styles. Observations are conducted to directly observe the learning process in the classroom. Interviews are used to obtain more in-depth information regarding teachers' teaching styles and student responses during the learning process.

Third, a simple quantitative analysis (linear regression) is conducted to determine whether or not the independent variables influence the dependent variable. This analysis produces a regression equation, significance value, and coefficient of determination, which are used to explain the relationship between the variables.

Fourth, Qualitative (Descriptive) Analysis is conducted descriptively, namely by processing, interpreting, and describing data from observations, interviews, and

documentation to obtain a clear picture of teachers' teaching styles in the learning process. Fifth, the conclusion is the final stage of research which is carried out by summarizing the results of data analysis to answer the formulation of the problem and the research objectives that have been set.

RESULT AND DISCUSSION

Quantitative Results. The analysis results show a regression equation: Y = 22 + 0.70X

A significance value of 0.001 (<0.05) indicates a significant influence between digital technology use and student learning motivation. The coefficient of determination R^2 = 0.52 indicates that digital technology contributes 52% to student learning motivation.

Table 1. Results of Student Activity Observations

No.	Activity	Percentage
1	Using a smartphone during learning	90%
2	Searching for learning materials on the internet	80%
3	Accessing social media during learning	70%
4	Preferring digital sources over printed books	60%
5	Experiencing difficulty maintaining focus	50%

Interview Results

Interview results indicate that students find it easier to access learning materials through digital technology. The use of technology helps increase learning independence, accelerates assignment completion, and makes the learning process more engaging.

Based on interviews with several respondents, it was found that the use of digital technology has a positive impact on student learning motivation. Most respondents stated that using digital technology makes it easier for them to access a wider variety of learning resources that are easily accessible at any time. Students also reported being more interested in participating in learning because the material can be presented in various formats, such as learning videos, e-books, interactive presentations, and online learning platforms.

Furthermore, students stated that digital technology helps increase learning independence. They can manage their study time flexibly, seek additional information independently, and complete assignments more quickly and efficiently. This easy access to various learning resources encourages students to be more active in the learning process.

However, several respondents revealed that the use of digital technology can also have negative impacts if not used wisely. The presence of social media, online games, and various forms of digital entertainment often become sources of distraction that can reduce concentration on learning. This situation indicates that the effectiveness of digital technology in increasing learning motivation is greatly influenced by students' ability to manage their use of technology responsibly.

Interview Results Analysis

Interview results indicate that digital technology plays a supporting role in student learning motivation through three main aspects: increased accessibility of learning resources, increased learning independence, and increased engagement in the learning process. These findings align with the quantitative analysis, which demonstrated a positive

influence of digital technology on student learning motivation, contributing 52%.

From the perspective of learning motivation theory, the ease of accessing information and learning flexibility offered by digital technology can increase students' intrinsic motivation because they have greater control over their learning process. Furthermore, the use of interactive digital learning media can increase students' attention and interest in learning, leading to higher engagement in learning.

However, the presence of distractions from social media indicates that digital technology does not always have a positive impact. Therefore, appropriate management of technology use is necessary to maximize its benefits in increasing student learning motivation. This analysis indicates that the successful use of digital technology depends not only on the availability of technology but also on students' ability to use it effectively and productively.

DISCUSSION

The research results show that the use of digital technology has a positive influence on students' learning motivation. A contribution of 52% indicates that digital technology is a crucial factor in increasing learning motivation.

This finding aligns with Ryan and Deci's (2020) motivation theory, which explains that a supportive learning environment can increase students' intrinsic motivation. Digital technology, in this case, creates a more engaging and interactive learning environment.

Furthermore, Davis' (1989) technology acceptance theory explains that ease of use and perceived benefits of technology will increase user acceptance of that technology. In an educational context, students perceive technology as facilitating the learning process.

Bond et al. (2020), Anderson (2021), Siemens (2019), Holmes (2022), and the OECD Report (2021) also show that the use of digital technology contributes to increased student engagement in modern learning.

However, observations indicate that the use of social media during learning also has the potential to cause distractions, leading to decreased learning focus. This suggests that technology use needs to be managed properly to maximize its benefits. The results of this study are also supported by Bandura (1997), who explained that an individual's belief in their abilities increases when the learning environment supports active learning activities. Schunk et al. (2014) emphasized that learning motivation develops through learning experiences that provide challenges and engage students. According to Hamzah B. Uno (2020), motivation is an internal drive that determines the success of the learning process. Research by Kusumawati and Rasto (2020) also shows that the effective use of digital technology can increase student learning motivation in the modern learning era.

The results showed that the use of digital technology has a positive and significant effect on student learning motivation, contributing 52%. This finding indicates that digital technology is a crucial factor in increasing student learning motivation in higher education. The use of digital technology provides easy access to information, flexibility in study time, and opportunities for students to access a wider variety of learning resources, thereby increasing their engagement in the learning process.

These research findings align with the Self-Determination Theory proposed by Richard M. Ryan and Edward L. Deci. According to this theory, intrinsic motivation will increase when individuals have the opportunity to develop autonomy, competence, and connectedness in the learning process. In this study, digital technology provides students

with the freedom to determine the time, place, and learning resources that suit their needs. This situation encourages a sense of ownership in the learning process, thereby increasing students' intrinsic motivation.

Furthermore, the results of this study can also be explained using the Technology Acceptance Model (TAM) developed by Fred D. Davis. This theory states that a person's acceptance of technology is influenced by perceived ease of use and perceived usefulness. Interview results indicated that students felt digital technology made it easier for them to access learning materials, complete assignments, and communicate with lecturers and fellow students. This perceived ease and usefulness encouraged students to utilize technology more intensively, resulting in increased learning motivation.

The research findings are also supported by Albert Bandura's Self-Efficacy Theory. Bandura explains that an individual's belief in their abilities influences their level of effort and persistence in achieving goals. In the context of this research, the use of digital technology helps students acquire information and complete assignments more effectively, thereby increasing their confidence in their academic abilities. This increased self-confidence ultimately contributes to increased learning motivation.

These research findings align with research conducted by Michael Bond et al. (2020), which found that the use of digital technology can increase student engagement in the learning process. This research demonstrates that digital media can create a more interactive learning experience, making students more active in participating in learning activities. Similar findings were also reported by Terry Anderson (2021), who stated that digital technology-based learning can increase student participation and engagement in the learning process.

Furthermore, these research findings support research by George Siemens (2019), who explained that digital technology enables students to build a broader knowledge network through various online learning resources. Students are no longer dependent on conventional learning resources but can obtain information from various digital platforms that support independent learning. Thus, digital technology plays a role in improving the quality of students' learning experiences.

This research is also consistent with the findings of Euis Kusumawati and Rasto (2020), who found that effective use of digital technology can increase student learning motivation. Both studies demonstrate that appropriate use of technology can increase student interest in learning, independence, and engagement in the learning process.

However, observations indicate that 70% of students still access social media during learning, and 50% experience learning difficulties. These findings suggest that digital technology does not always have a positive impact. If not managed properly, digital technology can become a source of distraction, reducing student concentration. These results reinforce the opinion of Ryan and Deci (2020) that a learning environment that supports motivation must be accompanied by an individual's ability to control their learning behavior.

Overall, the research findings indicate that digital technology plays a significant role in increasing student learning motivation by increasing the accessibility of learning resources, increasing learning independence, engaging in learning, and increasing confidence in one's abilities. However, the effectiveness of digital technology utilization depends heavily on students' ability to use technology wisely and productively. Therefore,

universities need to develop digital literacy programs and learning strategies that optimize the benefits of technology while minimizing its potential distractions.

CONCLUSION

The use of digital technology has been proven to have a positive impact on student learning motivation, contributing 52%. Digital technology can increase student engagement, independence, and interest in learning during the learning process. However, uncontrolled use has the potential to disrupt learning focus. Therefore, the use of digital technology needs to be managed appropriately to maximize its benefits in improving the quality of learning.

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