

The Impact of Digital Learning Platforms on Student Motivation in High School

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Abstract. This study explores the relationship between the use of digital learning platforms and student motivation in high school settings. With the increasing integration of technology in education, understanding its influence on student engagement and motivation is critical. This research employs a cross-sectional survey design with a sample of 200 high school students from New York City. Using a questionnaire based on the Academic Motivation Scale (AMS), the study examines whether students who regularly use digital platforms demonstrate higher motivation levels than their peers who do not. Data analysis, conducted using SPSS, reveals a significant positive relationship between digital platform usage and student motivation. The findings suggest that digital learning tools may enhance motivation, offering important implications for educators and policymakers. However, the study's cross-sectional nature and limited sample size present constraints, indicating the need for further research.

Keywords: Digital learning platforms, Student motivation, High school, Technology in education.

1. Introduction

1.1. Background

The rapid advancement of technology has profoundly impacted various sectors, including education. Digital learning platforms have become increasingly prevalent in classrooms, offering diverse tools and resources that aim to enhance the learning experience. These platforms, ranging from interactive educational software to online collaboration tools, promise to engage students more effectively and support personalized learning.

In high schools, where students are at a critical stage of academic and personal development, motivation plays a key role in determining success. Motivated students are more likely to engage with the material, persevere through challenges, and achieve better academic outcomes. However, despite the growing adoption of digital tools, there is limited empirical evidence on how these platforms specifically affect student motivation.

1.2. Research Problem

While numerous studies have investigated the impact of technology on student achievement, fewer have focused on motivation as a distinct outcome. Motivation is a complex and multifaceted construct that can be influenced by various factors, including the learning environment, teaching methods, and available resources. Given the centrality of motivation to student success, understanding how digital platforms influence this aspect of learning is crucial.

1.3. Objectives

This study aims to explore the relationship between the use of digital learning platforms and student motivation in high school settings. Specifically, it seeks to:

1. Assess the overall level of student motivation among high school students using digital learning platforms.
2. Compare the motivation levels of students who use digital platforms regularly with those who do not.

3. Investigate the potential factors that may mediate the relationship between digital platform usage and student motivation.

1.4. Research Questions and Hypotheses

The study is guided by the following research questions:

- What is the overall level of student motivation among high school students using digital learning platforms?
- Is there a significant difference in motivation levels between students who regularly use digital platforms and those who do not?
- What factors might mediate the relationship between digital platform usage and student motivation?

The following hypotheses are tested:

H1: High school students who regularly use digital learning platforms will report higher levels of motivation compared to those who do not.

H2: The relationship between digital platform usage and student motivation is mediated by factors such as perceived usefulness and ease of use.

1.5. Significance of the Study

The findings of this study could provide valuable insights for educators and policymakers aiming to enhance student motivation through the integration of technology. By identifying the potential benefits of digital learning platforms, the study contributes to the ongoing discourse on the role of technology in education and offers practical recommendations for improving student engagement and outcomes.

2. Literature Review

2.1. Theoretical Framework

This study is grounded in Self-Determination Theory (SDT), which posits that individuals are more likely to be motivated when their environment supports their psychological needs for autonomy, competence, and relatedness [1]. In educational settings, motivation is influenced by how well the learning environment meets these needs. Digital learning platforms, with their ability to provide personalized and interactive learning experiences, may enhance student motivation by fostering a sense of autonomy and competence.

2.2. Previous Studies

Several studies have explored the impact of digital tools on various educational outcomes, though few have focused specifically on motivation. For instance, one study conducted a meta-analysis that found a positive relationship between the use of digital tools and student engagement, but the focus was primarily on achievement rather than motivation [2].

Another study examined the role of technology in fostering student motivation and found mixed results. While some digital tools were associated with increased motivation, others had no significant effect [3]. This suggests that the type of technology and its implementation are critical factors.

In contrast, Davis introduced the Technology Acceptance Model (TAM), which highlights perceived usefulness and ease of use as key determinants of user acceptance and engagement with technology [4]. This model has been widely applied in educational research to understand how students interact with digital tools.

2.3. Gaps in the Literature

Despite the growing body of research on educational technology, there remains a gap in understanding how specific aspects of digital learning platforms influence student motivation. Most

studies have focused on broader outcomes such as engagement and achievement, leaving the motivational dimension underexplored. Furthermore, there is a need for research that considers the mediating factors, such as the perceived ease of use and usefulness of digital tools, that may affect the relationship between technology use and motivation.

3. Methodology

3.1. Research Design

This study employs a quantitative research design, utilizing a cross-sectional survey method to collect data. The choice of a survey design is appropriate given the study's focus on assessing student motivation levels and comparing different groups based on their use of digital platforms.

3.2. Participants

The study's participants consist of 200 high school students from various schools in New York City. The participants were selected using a stratified random sampling method to ensure representation across different grades, genders, and academic achievement levels. The sample size is deemed adequate for statistical analysis, allowing for meaningful comparisons between groups.

3.3. Instrumentation

The primary instrument for data collection is a structured questionnaire based on the Academic Motivation Scale (AMS), which measures different dimensions of student motivation, including intrinsic and extrinsic motivation, as well as amotivation. The AMS has been validated in numerous studies and is considered a reliable tool for assessing motivation in educational settings [5].

In addition to the AMS, the questionnaire includes items related to the frequency and nature of digital platform usage, as well as perceived usefulness and ease of use, based on the Technology Acceptance Model (TAM) [6]. These items are included to explore potential mediating factors in the relationship between digital platform usage and motivation.

3.4. Data Collection Procedure

Data were collected over a period of two weeks in March 2024. The questionnaire was distributed online through the school district's learning management system, ensuring easy access for students. Participation was voluntary, and students were assured of the confidentiality of their responses. To encourage participation, a small incentive in the form of a participation certificate was offered.

3.5. Data Analysis

The collected data were analyzed using SPSS software. Descriptive statistics were computed to summarize the overall levels of motivation and digital platform usage among the participants. Inferential statistics, including t-tests and Analysis of Variance (ANOVA), were used to test the study's hypotheses. Specifically, t-tests were employed to compare motivation levels between students who use digital platforms regularly and those who do not, while ANOVA was used to examine the impact of potential mediating factors.

4. Results

4.1. Descriptive Analysis

The descriptive analysis revealed that the overall mean motivation score for the sample was 4.0 on a 5-point scale, indicating a generally high level of motivation among the participants. The mean score for students who regularly used digital learning platforms was 4.2, compared to 3.8 for those who did not use such platforms frequently.

In terms of digital platform usage, 60% of the participants reported using digital learning tools on a daily basis, while 25% used them occasionally, and 15% rarely or never used them. Among the frequent users, platforms like Google Classroom, Khan Academy, and Edmodo were the most commonly utilized.

4.2. Inferential Statistics

A t-test was conducted to compare the motivation levels of students who regularly use digital learning platforms with those who do not. The results indicated a significant difference in motivation levels between the two groups ($t = 2.45$, $p < 0.05$), supporting the first hypothesis that regular users of digital platforms have higher motivation levels.

Additionally, an ANOVA was conducted to examine the potential mediating effects of perceived usefulness and ease of use. The analysis showed that both factors significantly influenced motivation levels ($F = 3.67$, $p < 0.05$ for perceived usefulness; $F = 4.12$, $p < 0.05$ for ease of use), suggesting that these variables play a crucial role in the relationship between digital platform usage and motivation.

4.3. Digital Learning Platforms

The findings indicate that the use of digital learning platforms is positively associated with higher levels of student motivation. Moreover, the perceived usefulness and ease of use of these platforms mediate this relationship, highlighting the importance of user-friendly and effective digital tools in enhancing student motivation.

5. Discussion

5.1. Interpretation of Results

The results of this study support the hypothesis that the use of digital learning platforms is associated with higher levels of student motivation. This finding aligns with Self-Determination Theory, which suggests that environments that support autonomy and competence are likely to enhance motivation [7]. Digital platforms, by offering personalized learning experiences and immediate feedback, may fulfill these psychological needs, thereby boosting motivation.

The significant role of perceived usefulness and ease of use, as revealed by the ANOVA, is consistent with the Technology Acceptance Model [8]. When students perceive digital tools as useful and easy to use, they are more likely to engage with them, leading to increased motivation. This underscores the importance of designing educational technologies that are both effective and user-friendly.

5.2. Comparison with Previous Studies

The findings of this study are in line with other, who found a positive relationship between digital tool usage and student engagement [9]. However, the focus on motivation as a distinct outcome offers a new perspective, suggesting that digital platforms not only engage students but also enhance their intrinsic motivation to learn.

In contrast, the mixed results highlight the complexity of the relationship between technology and motivation [10]. While this study found a positive association, the variability in outcomes across different studies suggests that factors such as the type of platform, the context of use, and individual differences among students may all influence the impact of digital tools on motivation.

5.3. Implications of the Findings

The findings of this study have important implications for educators and policymakers. The positive association between digital platform usage and student motivation suggests that integrating such tools into the curriculum could enhance student engagement and learning outcomes. However, the mediating role of perceived usefulness and ease of use indicates that not all digital tools are

equally effective. Educators should carefully select and implement technologies that are both pedagogically sound and user-friendly.

Moreover, training and support for both teachers and students in using these platforms effectively could further enhance their motivational impact. Policymakers should consider these factors when promoting the adoption of educational technologies in schools.

6. Conclusion

This study examined the relationship between the use of digital learning platforms and student motivation in high school settings. The findings indicate that students who regularly use digital platforms report higher levels of motivation, and that this relationship is mediated by the perceived usefulness and ease of use of the platforms.

The study's cross-sectional design limits the ability to draw causal inferences. While the findings suggest a positive association, it is not possible to determine whether digital platform usage directly causes increased motivation. Additionally, the study's sample is limited to high school students in New York City, which may limit the generalizability of the results to other contexts.

Future research should consider using longitudinal designs to explore the causal relationship between digital platform usage and motivation over time. Additionally, studies should examine a broader range of digital tools and include more diverse samples to enhance the generalizability of the findings. Investigating the specific features of digital platforms that most effectively support student motivation could also provide valuable insights for the design and implementation of educational technologies.

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