INTERNET USAGE IN RELATION TO STUDENTS ACADEMIC ENDEAVOR WITH COGNITIVE ENGAGEMENT AS MEDIATOR

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ABSTRACT

This study evaluated whether cognitive engagement mediate the relationship between intermet usage and students' academic endeavour. In this study, the researcher selected the 205 Grade 7-10 students taken from the Cluster 3 public secondary schools in Division of Davao City as the respondents of the study. Stratified random sampling technique was utilized in the selection of the respondents. Non-experimental quantitative research design using descriptive-correlational method was employed. The data collected were subjected on the following statistical tools Mean, Pearson Moment Product Correlation, multiple linear regression analysis, and Structural Equation Model through Mediation Analysis Findings revealed that students' internet usage. academic endeavour, and cognitive engagement in Cluster 3 Public Secondary Schools were described as extensive Further correlation analysis demonstrated that there is significant relationship among students' intemet usage, academic endeavour, and cognitive engagement in Cluster 3 Public Secondary Schools. Evidently, Structural Equation Model through Mediation Analysis proved that cognitive engagement have partial significant mediating effect on the relationship between internet usage and students' academic endeavour in Cluster 3 Public Secondary Schools. The study, therefore, conducted for further utilization of findings through publication in reputable research journal.

Keywords: Internet usage, academic endeavour, cognitive egagement educational management, education, Philippines

1. INTRODUCTION

Rationale

In the digital age, internet usage has become an integral part of daily life, influencing various aspects of society, including education. Globally, the internet provides a wealth of resources and tools that can enhance learning and academic performance. The integration of technology in education has been shown to foster student engagement, collaboration, and personalized learning (UNESCO, 2019). However, the relationship between internet usage and academic outcomes is complex and multifaceted. While some studies suggest that internet use can improve academic performance by providing access to educational materials and facilitating communication (Anderson & Jiang, 2018), others highlight the potential for distraction and negative impacts on academic engagement (Junco, 2012).

Nationally, the Philippines has embraced digital technology in education, with initiatives aimed at integrating ICT into the classroom to improve educational outcomes (DepEd, 2020). The Department of Education (DepEd) has implemented programs to enhance digital literacy and provide students and teachers with access to online Jresources. Despite these efforts, challenges such as digital divide, inconsistent internet access, and varying levels of digital competence among students and educators persist. Addressing these issues is crucial for ensuring that the benefits of internet usage are maximized while mitigating potential drawbacks.

Locally, in the Division of Davao City, students in public secondary schools face similar challenges and opportunities related to internet usage. The Cluster 3 public secondary schools, in particular, experience disparities in access to technology and internet resources, which can affect students' academic endeavors and cognitive engagement. The local educational authorities have recognized the need to understand how internet usage impacts academic performance and have called for studies that can inform policy and practice to support effective integration of technology in education (Cortez, 2019).

The urgency of this study is underscored by the increasing reliance on digital technology in education, especially in the context of the COVID-19 pandemic, which has accelerated the shift towards online learning. Understanding the mediating role of cognitive engagement in the relationship between internet usage and academic endeavor is critical for developing strategies that enhance the positive impacts of internet use while addressing its potential negative effects. This study aims to provide empirical evidence that can guide educators, policymakers, and stakeholders in creating supportive environments that promote effective and responsible internet usage among students.

By exploring the dynamics between internet usage, cognitive engagement, and academic endeavor, this research seeks to contribute to the broader discourse on digital education. The findings will offer insights into how cognitive engagement can mediate the effects of internet usage on academic performance, providing a basis for targeted

interventions and professional development programs. Ultimately, the goal is to enhance students' academic outcomes and support their overall educational journey in an increasingly digital world.

Purpose of the Study

The primary aim of this study is to assess the relationship between internet usage and students' academic endeavor, with a specific focus on the mediating role of cognitive engagement. By investigating these relationships, the study seeks to offer valuable insights into how internet usage influences academic performance and how cognitive engagement can enhance or mitigate these effects. This understanding is crucial for developing targeted interventions that promote effective and responsible internet usage among students. The study's findings are intended to inform educational policy and practice, contributing to the broader goal of improving educational outcomes through the effective integration of digital technology in education.

Review of Significant Literature

Internet Usage and Academic Performance

Internet usage has become an essential tool for education, providing students with access to vast amounts of information and educational resources. Studies have shown that internet usage can positively impact academic performance by enhancing students' research skills, facilitating access to educational materials, and supporting communication with peers and teachers (Livingstone & Helsper, 2007). However, excessive internet usage, particularly for non-educational purposes, can lead to distractions and negatively affect academic performance (Kubey, Lavin, & Barrows, 2001).

Cognitive Engagement

Cognitive engagement refers to the mental effort and strategies that students employ in their learning processes. It involves deep processing of information, critical thinking, and the application of knowledge to new situations (Fredricks, Blumenfeld, & Paris, 2004). Cognitive engagement is a crucial factor in academic success, as it enhances students' understanding and retention of material. Research has shown that students who are cognitively engaged are more likely to achieve higher academic outcomes (Greene, Miller, Crowson, Duke, & Akey, 2004).

Academic Endeavor

Academic endeavor encompasses students' commitment, effort, and persistence in their academic activities. It includes behaviors such as completing assignments, participating in class, and striving for academic excellence (Finn & Rock, 1997). Academic endeavor is influenced by various factors, including motivation, self-regulation, and the learning environment. High levels of academic endeavor are associated with improved academic performance and overall educational success (Pintrich & De Groot, 1990).

Relationship Between Internet Usage, Cognitive Engagement, and Academic Endeavor

There is substantial evidence to suggest that internet usage, cognitive engagement, and academic endeavor are interrelated. Internet usage can enhance cognitive engagement by providing access to interactive and engaging educational content (Kim & Chang, 2010). In turn, cognitive engagement can mediate the effects of internet usage on academic endeavor by promoting deep learning and sustained effort in academic activities (Lee, Cheung, & Chen, 2005). Understanding these relationships is critical for developing strategies that maximize the positive impacts of internet usage on academic performance while mitigating potential negative effects.

Theoretical / Conceptual Framework

The study is grounded in the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT). The TAM posits that perceived ease of use and perceived usefulness are primary factors influencing individuals' acceptance and use of technology (Davis, 1989). This model is extended to include cognitive engagement as a mediating variable. SDT emphasizes the role of intrinsic motivation in fostering cognitive engagement and academic endeavor (Deci & Ryan, 2000). The conceptual framework of this study illustrates the hypothesized relationships among internet usage, cognitive engagement, and academic endeavor, providing a comprehensive understanding of how these variables interact to influence student outcomes.

Statement of the Problem

This study seeks to answer the following questions:

1. What is the level of internet usage among Grade 7-10 students in Cluster 3 public secondary schools in the Division of Davao City?

2. How is the academic endeavor of these students characterized?

3. What is the level of cognitive engagement among these students?

4. Is there a significant relationship between internet usage and academic endeavor?

5. Does cognitive engagement mediate the relationship between internet usage and academic endeavor?

Hypotheses

1. There is a significant relationship between internet usage and academic endeavor.

2. Cognitive engagement significantly mediates the relationship between internet usage and academic endeavor.

Scope and Limitation of the Study

This study focuses on Grade 7-10 students in Cluster 3 public secondary schools in the Division of Davao City. The findings may not be generalizable to other grade levels, districts, or private schools. The study is limited to quantitative data and does not explore qualitative aspects of internet usage, cognitive engagement, and academic endeavor. Additionally, the study's reliance on self-reported data from students may introduce bias, and the cross-sectional design does not allow for causal inferences. Future research could address these limitations by incorporating qualitative methods and longitudinal designs to gain deeper insights into the dynamics of these variables. Despite these limitations, the study provides valuable insights into the relationship between internet usage, cognitive engagement, and academic endeavor.

Definition of Terms

Internet Usage: The extent to which students use the internet for educational and non-educational purposes.

Cognitive Engagement: The mental effort and strategies that students employ in their learning processes, including deep processing of information and critical thinking.

Academic Endeavor: The commitment, effort, and persistence that students exhibit in their academic activities, including completing assignments and participating in class.

2. METHODS

Research Design

This study employs a non-experimental quantitative research design using a descriptive-correlational survey method. This approach is suitable for examining existing relationships between variables without manipulating them (Creswell, 2014). The descriptive aspect provides a detailed account of the levels of internet usage, cognitive engagement, and academic endeavor, while the correlational aspect explores the relationships among these variables. By utilizing this design, the study aims to provide a comprehensive understanding of how internet usage influences academic endeavor and how cognitive engagement mediates this relationship. The quantitative approach ensures that the findings are based on statistical analysis, providing empirical evidence to support the study's conclusions.

Respondents of the Study

The study involved 205 Grade 7-10 students from Cluster 3 public secondary schools in the Division of Davao City. A stratified random sampling technique was used to ensure a representative sample based on various criteria such as grade level, gender, and academic performance. This method helps in minimizing selection bias and ensuring that different subgroups within the population are adequately represented. The diverse backgrounds and experiences of the respondents contribute to a more comprehensive analysis of the research questions. The sample size was determined to provide sufficient statistical power for detecting significant relationships among the variables.

Research Instruments

Standardized questionnaires were used to measure internet usage, cognitive engagement, and academic endeavor. The questionnaires were validated and tested for reliability using Cronbach's alpha. Ensuring the validity and reliability of the instruments is crucial for obtaining accurate and consistent data. The internet usage questionnaire included items designed to assess the frequency and purpose of internet use. The cognitive engagement questionnaire included items that measured students' mental effort and learning strategies. The academic endeavor questionnaire included items that assessed students' commitment, effort, and persistence in their academic activities. The structured format of the questionnaires facilitated the collection of relevant data for analysis.

Research Environment

The study was conducted in Cluster 3 public secondary schools in the Division of Davao City. This setting provided a relevant context for understanding the dynamics of internet usage, cognitive engagement, and academic endeavor within the local educational environment. The chosen environment allowed for the examination of how these variables are influenced by the specific challenges and opportunities present in the public school system in Cluster 3. The findings can offer targeted insights that are directly applicable to the context of these schools. By situating the study in this specific context, the research aims to provide actionable recommendations for local educational stakeholders.

Ethical Consideration

Informed consent was obtained from all participants and their guardians. Confidentiality and anonymity of the respondents were maintained throughout the study. Ethical considerations were prioritized to ensure that the rights and well-being of the participants were protected. The study adhered to ethical guidelines to maintain the integrity of the research process and safeguard the interests of the respondents. Participants were informed about the purpose of the study, their right to withdraw at any time, and the measures taken to ensure data confidentiality.

Data Gathering Procedure

Data were collected using a self-administered questionnaire distributed to the respondents during school hours. Follow-up reminders were sent to ensure a high response rate. The data collection process was meticulously planned and executed to gather accurate and comprehensive information. The collected data were then carefully reviewed and organized for analysis. The structured approach to data collection ensured that the information gathered was relevant and reliable for addressing the research questions. The data gathering procedure was designed to minimize respondent burden while maximizing data quality.

Data Analysis

Data were analyzed using descriptive statistics, Pearson Moment Product Correlation, multiple linear regression analysis, and Structural Equation Modeling (SEM) through Mediation Analysis. Descriptive statistics were used to summarize the levels of internet usage, cognitive engagement, and academic endeavor. Pearson Moment Product Correlation was employed to examine the relationships between the variables. Multiple linear regression analysis was used to identify the direct effects of internet usage on academic endeavor. SEM through Mediation Analysis was utilized to explore the mediating effect of cognitive engagement on the relationship between internet usage and academic endeavor. These statistical tools were chosen to provide a comprehensive understanding of the relationships and influences among the variables. The results of the analyses were interpreted to draw meaningful conclusions and provide actionable recommendations. The data analysis process involved multiple steps to ensure the accuracy and validity of the findings.

3. RESULTS

Descriptive Statistics

The descriptive analysis revealed that students' internet usage, cognitive engagement, and academic endeavor in Cluster 3 public secondary schools were all rated as extensive. This indicates that students in these schools frequently use the internet for both educational and non-educational purposes. They also exhibit high levels of cognitive engagement, employing various mental strategies and efforts in their learning processes. Additionally, students demonstrate a strong commitment to their academic activities, participating actively in class and striving for academic excellence. The high mean scores for all three variables suggest that internet usage, cognitive engagement, and academic endeavor are prevalent among students in Cluster 3 public secondary schools. These findings provide a comprehensive overview of the current state of these variables among the students studied, highlighting the importance of understanding their interrelationships.

Correlation Analysis

The correlation analysis demonstrated significant positive relationships among students' internet usage, cognitive engagement, and academic endeavor. Specifically, higher levels of internet usage were associated with greater cognitive engagement and higher academic endeavor. Similarly, greater cognitive engagement was associated with higher academic endeavor. These findings align with previous research indicating that internet usage can enhance cognitive engagement by providing access to interactive and engaging educational content (Kim & Chang, 2010). The significant correlations underscore the importance of understanding how these variables interact to influence academic performance. By enhancing students' cognitive engagement through responsible and effective internet usage, schools can potentially improve overall academic endeavor.

Regression Analysis

The multiple linear regression analysis identified that internet usage has a significant positive effect on academic endeavor. This suggests that students who use the internet more frequently for educational purposes tend to exhibit higher levels of commitment, effort, and persistence in their academic activities. Additionally, cognitive engagement was found to have a significant positive effect on academic endeavor, indicating that students who employ effective learning strategies and mental efforts are more likely to succeed academically. These findings highlight the direct impacts of internet usage and cognitive engagement on students' academic performance. The regression analysis provides detailed insights into the specific contributions of these variables, emphasizing the importance of promoting responsible internet usage and cognitive engagement to enhance academic endeavor.

Mediation Analysis

The Structural Equation Modeling (SEM) through Mediation Analysis revealed that cognitive engagement partially mediates the relationship between internet usage and academic endeavor. This indicates that while internet usage directly influences academic endeavor, part of this effect is mediated through cognitive engagement. In other words, internet usage enhances cognitive engagement, which in turn positively affects academic endeavor. The partial mediation suggests that cognitive engagement plays a crucial role in how internet usage impacts academic performance. These findings emphasize the need for interventions that promote cognitive engagement as a means of maximizing the positive effects of internet usage on academic endeavor. By fostering cognitive engagement, educators can help students make the most of their internet use for educational purposes, ultimately supporting their academic success.

4. DISCUSSION

Internet Usage and Academic Endeavor

The study found a significant positive relationship between internet usage and academic endeavor among students in Cluster 3 public secondary schools. This finding aligns with the existing body of research that highlights the benefits of internet usage for educational purposes. The internet provides students with access to a vast array of resources, including educational materials, online courses, and interactive learning platforms, which can enhance their academic performance (Livingstone & Helsper, 2007). However, it is crucial to ensure that internet usage is directed towards educational activities rather than distractions. The positive relationship between internet usage and academic endeavor underscores the importance of promoting responsible and effective internet use among students. Schools should provide guidance and support to help students leverage the internet for their academic benefit.

Cognitive Engagement as a Mediator

The study revealed that cognitive engagement partially mediates the relationship between internet usage and academic endeavor. This finding suggests that internet usage can enhance cognitive engagement by providing students with engaging and interactive educational content. In turn, cognitive engagement positively influences academic endeavor by promoting deep learning and sustained effort in academic activities (Fredricks, Blumenfeld, & Paris, 2004). The mediating role of cognitive engagement highlights the importance of fostering cognitive engagement to maximize the positive effects of internet usage on academic performance. Schools should implement strategies to enhance cognitive engagement, such as incorporating interactive learning activities, promoting critical thinking, and providing opportunities for collaborative learning.

Implications for Educational Management

The results of this study have significant implications for educational management practices. Firstly, they highlight the need for educational leaders to support the effective integration of internet usage in the classroom. This can be achieved through targeted professional development programs that focus on best practices in digital education and provide teachers with the skills and knowledge to guide students in using the internet responsibly. Additionally, the findings underscore the importance of creating a supportive school culture that values cognitive engagement and academic endeavor. Educational leaders should promote strategies that enhance cognitive engagement, such as incorporating interactive and collaborative learning activities, fostering critical thinking, and providing timely feedback to students. By prioritizing these elements, educational leaders can create an environment that supports student success in the digital age.

Recommendations for Future Research

Future research should explore other potential mediators and moderators of the relationship between internet usage and academic endeavor. For instance, studies could investigate the role of social factors, such as peer influence and parental support, in shaping students' internet usage and academic performance. Additionally, qualitative research could provide deeper insights into students' experiences and perspectives regarding internet usage, cognitive engagement, and academic endeavor. Longitudinal studies could also offer valuable insights into the long-term effects of internet usage on academic performance. By expanding the scope of research on this topic, scholars and practitioners can continue to improve educational practices and outcomes.

5. CONCLUSIONS

Summary of Findings

The study concluded that students' internet usage, cognitive engagement, and academic endeavor are extensively practiced in Cluster 3 public secondary schools in the Division of Davao City. The significant positive relationships among these variables highlight the critical role of internet usage and cognitive engagement in enhancing students'

academic performance. The analysis also revealed that cognitive engagement partially mediates the relationship between internet usage and academic endeavor. These findings suggest that promoting responsible internet usage and fostering cognitive engagement can significantly improve students' academic outcomes. The study's results provide empirical evidence supporting the positive impact of internet usage and cognitive engagement on academic endeavor, emphasizing the need for ongoing support and interventions in these areas.

6. RECOMMENDATIONS

Based on the findings, the study recommends that educational leaders invest in professional development programs focused on digital education and cognitive engagement strategies. Schools should create a supportive environment that encourages responsible internet usage and promotes cognitive engagement through interactive and collaborative learning activities. Regular evaluations of internet usage, cognitive engagement, and academic endeavor are essential to ensure the effectiveness of these strategies and address areas for improvement. Future research should continue to explore the complex relationships among these variables, incorporating qualitative methods and longitudinal designs to gain deeper insights into their dynamics. By addressing these recommendations, educational stakeholders can enhance the quality of education and promote student success in an increasingly digital world.

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