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The Influence of Digital Skills and Family Financial Resources on Educational Outcomes among Senior High School Students

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Abstract. This study explored how digital skills and family financial resources impacted educational success among senior high school students. Given the increasing role of technology in education and the influence of socioeconomic factors on academic performance, this research addressed the gap in understanding how these variables correlated with students' educational outcomes. Data were collected from senior high school students using a quantitative research design. Pearson correlation analysis was applied to determine the direction and strength of relationships between digital skills, family financial resources, and educational success. With a sample size of 30, the findings revealed a moderate positive correlation between digital skills and financial resources ($r = 0.503$, $p = 0.388$), though it was not statistically significant. Further analysis indicated a weak negative correlation between digital skills and educational success ($r = -0.067$) and a weak positive correlation between financial resources and educational success ($r = 0.400$). None of these correlations reached statistical significance at the 0.05 level. These results suggested potential associations among the variables, although not robust enough to draw definitive conclusions in this study. The lack of statistical significance highlighted the need for further research to clarify these dynamics, incorporating additional factors such as school environment, teacher quality, and student motivation. This study contributed to discussing technology and socioeconomic influences in education, emphasizing the complex interplay affecting students' academic performance.

Keywords: Digital skills; Family financial resources; Educational outcomes; Socioeconomic factors; Technology in education.

1.0 Introduction

Information and communication technology (ICT) has transformed the educational landscape, making digital skills crucial for students to thrive in the modern world. Historically, educational systems focused on traditional literacy, numeracy, and foundational knowledge. However, as digital technology became integral to daily life and work, schools increasingly recognized the importance of digital skills in equipping students for future academic and career demands. For senior high school students, digital skills represented a cornerstone of their ability to access information, complete assignments, and engage in collaborative learning, often with direct implications for academic success.

In addition to digital skills, a student's family's financial resources influence their access to educational tools and learning opportunities. Socioeconomic status (SES) often shapes students' experiences and achievements by

determining access to digital devices, internet connectivity, quality learning materials, and extracurricular support. While digital and financial resources have individually been studied for their role in educational success, fewer studies have examined the interplay of these factors in shaping academic outcomes, creating a gap in understanding their combined effects.

The existing literature underscored the importance of both digital skills and financial resources. Research by Sidupa et al. (2018) showed that students with stronger digital skills tended to perform better academically, benefiting from access to information, timely assignment completion, and improved collaboration. Conversely, Schneider and Droege (2014) highlighted how low-income students often faced limited access to technology, leading to challenges in building digital competencies. Family economic status, meanwhile, emerged as a critical determinant in students' educational experiences, influencing access to learning resources, supportive environments, and technology-based opportunities (Pearce, 2020).

More recent studies provided further insights. Jiang et al. (2019) and Harrison, Skryabin, and Chiu (2020) demonstrated a positive correlation between SES and digital proficiency, indicating that students from higher-income families often had stronger digital skills. However, these studies primarily focused on high-income contexts, leaving questions about the applicability of their findings to more diverse socioeconomic settings. Harrison and Skryabin's research also suggested that digital skills could mediate the relationship between family financial resources and academic performance, further supporting the need for a comprehensive analysis of these interacting factors.

This study aimed to fill these gaps by examining the correlations among digital skills, family financial resources, and educational outcomes in a sample of senior high school students. Through this correlational analysis, the research provided insights into how these variables independently and collectively impacted academic success, helping to illuminate the complex ways technology and economic resources influence students' learning experiences. The significance of this study lies in its potential to inform educational strategies and policies, contributing to equitable access to digital literacy and academic resources across diverse student populations.

2.0 Methodology

2.1 Research Design

This study employed a correlational research design to examine the relationships between digital skills, family financial resources, and educational outcomes among senior high school students. A correlational design was selected as it allows for analyzing the strength and direction of associations between these variables without manipulating them, making it well-suited for exploring naturally occurring relationships in educational settings. This design aligned with the study's objectives, as it aimed to determine whether variations in students' digital skills and family financial resources could predict differences in academic performance. By focusing on correlations, the study provided insights into potential associations and patterns among these factors, contributing to a better understanding of their combined impact on students' educational success.

2.2 Research Locale

The study was conducted in San Jose Community High School, Gen. Mariano Alvarez, Cavite. San Jose is a public high school with students from various backgrounds. Therefore, it is a good setting to test the relationship between digital skills and educational outcomes for students with different socioeconomic profiles. The school's availability of digital tools and the demographics of its students offered a representative context to examine the influence of digital skills and other financial resources on academic success.

2.3 Research Participants

The study participants comprised 30 senior high school students from San Jose Community High School in Gen. Mariano Alvarez, Cavite. Participants were selected through simple random sampling from a pool of enrolled students with ICT integration experience in their academic work. The selection criteria focused on students currently enrolled in the senior high school program, aged between 17 and 19, to ensure they represented the age group targeted in this study. Moreover, the school serves a diverse community, which provides a range of family financial backgrounds likely reflective of varied access to digital resources. This variability in background was anticipated to influence outcomes related to digital skills and educational success. Before data collection, ethical

standards were observed by obtaining parental consent and student assent to ensure voluntary and informed participation.

2.4 Research Instrument

The study employed a structured questionnaire divided into three main sections. Part 1 measured digital skills using an adapted version of the digital skills assessment tool from Indiwara et al. (2022). This tool was modified to include items relevant to senior high school students' use of digital resources in academic contexts. Part 2 collected information on family financial resources, including household income, parents' employment status, and the availability of educational support resources at home, providing a snapshot of financial factors that may affect students' educational experiences. Part 3 gathered data on students' educational outcomes, including final grades from the last school term, attendance, and participation in extracurricular activities.

To ensure reliability and clarity, the questionnaire was pilot-tested with a small group of students, similar to the study sample. Feedback from the pilot test led to minor adjustments in wording and format to enhance the instrument's clarity. This validation process confirmed the tool's suitability for the target demographic and improved its effectiveness in capturing accurate data.

2.5 Data Gathering Procedure

Data collection was conducted over three weeks, during which the researcher administered the questionnaires directly to senior high school students of San Jose Community High School. Participants were approached through scheduled meetings arranged with school administration, where they received a brief overview of the study's purpose and were reminded that participation was voluntary. The researcher ensured that each participant fully understood how to complete the questionnaire and emphasized that all responses would remain confidential.

To support participant comfort, students were given ample time in a neutral and relaxed environment to complete the questionnaire, ensuring they felt no pressure. Upon completion, the questionnaires were collected directly by the researcher and securely stored to maintain confidentiality. Data were analyzed using statistical software, SPSS. The analysis involved descriptive statistics to summarize participants' digital skills, family financial resources, and educational outcomes. Pearson correlation analysis was then applied to determine the strength and direction of relationships between the variables: digital skills, family financial resources, and educational outcomes. This method allowed for examining potential associations without implying causation, consistent with the study's correlational design. Additionally, reliability testing was conducted on the questionnaire items to confirm consistency in measuring each construct. These statistical methods ensured a rigorous approach to analyzing the data and supported the study's objectives.

2.6 Ethical Considerations

Ethical standards were rigorously maintained throughout the study. Before participation, informed consent was obtained from the student participants and their parents or guardians. Each participant received a clear explanation of the study's purpose and procedures, with assurances of confidentiality and anonymity. Participation was entirely voluntary, and students were informed of their right to withdraw from the study at any time without any consequences.

Data were securely stored, with access limited solely to the researcher, ensuring confidentiality. Findings were reported in aggregate form to further protect participant identity, with no identifiable information presented. The study received ethical approval from the San Jose Community High School research ethics team, and necessary administrative permissions were secured before data collection began.

3.0 Results and Discussion

3.1 Level of Digital Skills among Senior High School Students

The study assessed students' digital skills through self-reported confidence across several ICT-related tasks. Table 1 presents descriptive statistics for each skill indicator. The overall mean score of 3.45 (SD = 0.17) indicates a "neutral" level, suggesting that students generally felt moderate confidence in their digital skills.

Table 1. Descriptive statistics on the level of digital skills among senior high school students

Indicators	Mean	SD	Interpretation
1. I am confident in using computer hardware and software.	3.40	1.248	Neutral
2. I can effectively use the internet to search for information.	3.67	1.093	Agree
3. I am familiar with common office applications (e.g., Word, Excel, PowerPoint).	3.40	1.248	Neutral
4. I can troubleshoot basic computer problems on my own.	3.20	1.215	Neutral
5. I can safely and responsibly use social media platforms.	3.43	1.135	Neutral
6. I can create and share digital content (e.g., videos and presentations).	3.67	1.093	Agree
7. I regularly update my knowledge of ICT tools and trends.	3.37	1.273	Neutral
Overall Mean	**3.44**	**0.168**	**Neutral**

Among the specific skills measured, students showed moderate confidence in using hardware and software (M = 3.40, SD = 1.248) and were neutral regarding their ability to troubleshoot basic computer issues (M = 3.20, SD = 1.215). Interestingly, the students expressed higher confidence in effectively using the internet for information retrieval and creating digital content, with mean scores of 3.67 (SD = 1.093), indicating a more positive response.

These findings highlight areas of strength, such as internet use and digital content creation, while revealing gaps in technical skills, like troubleshooting and regularly updating ICT knowledge. This aligns with Delizo's (2019) findings, which indicated that Filipino students demonstrated average self-assessed digital skills but struggled with more technical tasks. This pattern suggests that while students may feel competent in general digital tasks, they require targeted support for more complex digital skills, indicating a need for comprehensive digital literacy programs.

3.2 Family Financial Resources Concerning Access to ICT Tools and Learning Opportunities

The study also analyzed how family financial resources impacted students' access to educational and digital tools. Table 2 summarizes the relevant indicators. The overall mean of 3.22 (SD = 0.05) suggests that family financial support for ICT tools and educational resources was generally "manageable." Most students reported having access to personal devices (M = 3.30, SD = 1.317) and internet services (M = 3.23, SD = 1.331), although affordability varied.

Table 2. Descriptive statistics on family financial resources concerning ICT tools and learning opportunities

Indicators	Mean	SD	Interpretation
1. Family's ability to afford school-related expenses	3.17	1.341	Manageable
2. Access to personal computers or laptops at home	3.30	1.317	Devices for Personal Use
3. Affordability of Internet services at home	3.23	1.331	Occasionally
4. Affordability of new school-related equipment	3.23	1.331	Occasionally
5. Financial support for education	3.17	1.341	Adequate Support
Overall Mean	**3.22**	**0.053**	**Financially Manageable**

These results imply that while basic ICT access was available to most students, there were limitations. Agaton and Cueto (2021) similarly noted that, despite efforts to improve ICT accessibility, rural students faced challenges accessing reliable internet and modern digital tools. This underscores the need for policies addressing financial and technological support, particularly for under-resourced communities.

3.3 Educational Outcomes of the Senior High School Students

Educational outcomes were measured through GPA, engagement, and ICT usage. Table 3 shows that students had an average GPA score of 3.00 (SD = 1.531), corresponding to a satisfactory performance range of 80%-84%. Their engagement with school activities scored higher, with a mean of 3.53 (SD = 1.252), suggesting moderate involvement.

Table 3. Descriptive statistics on educational outcomes of senior high school students

Indicators	Mean	SD	Interpretation
1. GPA or average grade in the last semester	3.00	1.531	Satisfactory
2. Level of engagement in schoolwork and extracurricular activities	3.53	1.252	Engaged
3. Frequency of ICT tool usage in academic projects and assignments	4.20	1.031	Frequently
Overall Mean	**3.57**	**0.601**	**Above Average**

Notably, ICT usage in academic tasks scored an average of 4.20 (SD = 1.031), indicating frequent use of digital tools. This result aligns with Hori and Fujii's (2021) study, which found that students who frequently engaged with ICT tools achieved better cognitive engagement and academic performance. However, given the variability in GPA scores, additional factors beyond ICT use may influence academic outcomes, suggesting areas for further research on the impact of engagement and extracurricular activities.

3.4 Correlation Analysis Between Digital Skills, Family Financial Resources, and the Educational Outcomes among Senior High School Students

Pearson correlation analysis was conducted to determine relationships between digital skills, family financial resources, and educational outcomes (see Table 4). The correlation between digital skills and family financial resources showed a moderate positive relationship ($r = 0.503$), though it was not statistically significant ($p = 0.388$). This suggests that while a higher level of family financial resources might support digital skill development, this association was not strong enough to be conclusive.

Table 4. Analysis of the relationship between digital skills, family financial resources, and educational outcome

Variables		Pearson R	Sig Value	Interpretation	Decision to Ho
1.	Level of Digital skills * Family Financial Resources	0.503	0.388	Not Significant	Accept
2.	Level of Digital skills * Educational Outcome	-0.067	0.957	Not Significant	Accept
3.	Family Financial Resources * Educational Outcome	0.400	0.738	Not Significant	Accept

$\alpha = 0.05$ Level of Significance

The correlation between digital skills and educational outcomes was weakly negative ($r = -0.067$) and not statistically significant ($p = 0.957$), indicating little to no meaningful association. Similarly, the relationship between family financial resources and educational outcomes was weakly positive ($r = 0.400$) but insignificant ($p = 0.738$). These findings are consistent with Teves et al. (2024), who found limited evidence linking digital skills directly to higher academic outcomes in high school students.

These results suggest that while digital skills and family resources may contribute to students' education, other factors—such as instructional quality, motivation, and engagement—likely play crucial roles. Badol et al. (2019) observed that financial stability alone does not guarantee academic success, emphasizing the need for a supportive learning environment and motivational factors. This highlights potential limitations in the study, such as sample size and external influences, which may have affected the strength of observed relationships.

The study suggests that while students are confident in basic digital skills, gaps exist in technical competencies that could impact their readiness for advanced ICT use. Addressing these gaps through targeted training programs could enhance overall digital skills. Additionally, since family financial resources moderately support educational needs, expanding government and school initiatives could improve access to digital resources for all students, particularly those in underserved areas.

Future research might explore larger and more diverse samples, examine longitudinal effects of ICT skill development on academic performance, and investigate additional factors, such as teacher support and learning environments, that could mediate these relationships. The current findings provide a foundation for understanding digital and financial influences on education but underscore the complexity of factors contributing to academic success.

4.0 Conclusion

The findings of this study revealed no statistically significant relationships between digital skills, family financial resources, and educational outcomes among senior high school students. Although a moderate positive correlation was observed between digital skills and family financial resources, this association was not strong enough to suggest a meaningful impact. Similarly, weak correlations between digital skills and educational outcomes and between family financial resources and educational outcomes indicate that these factors alone may not directly influence students' academic performance in this sample.

These results contribute to the broader understanding of educational success, underscoring that combining factors beyond digital skills and financial resources likely influences student outcomes. The findings suggest that while

digital competencies and family support are important, their effects on academic success may depend on additional elements, such as the school environment, access to quality education, and students' intrinsic motivation. These insights reinforce the complexity of educational outcomes and imply that comprehensive strategies addressing multiple dimensions are necessary to support student achievement effectively.

This study addressed the research questions by assessing digital skills, family financial resources, and their potential associations with educational outcomes. However, limitations such as sample size and the focus on self-reported data may have impacted the results. Future research should consider larger and more diverse samples. It could explore additional factors, such as teacher support and school resources, to better understand the interplay of influences on academic success. Additionally, longitudinal studies might provide insights into how digital skill development and financial stability contribute to educational outcomes over time.

In conclusion, this study highlights the importance of looking beyond individual factors when assessing contributors to academic success. By recognizing the multifaceted nature of educational outcomes, researchers and educators can develop more targeted interventions that integrate various elements, ultimately fostering a more supportive and effective learning environment for students.

5.0 Contributions of Authors

Mr. Jan Angelo G. Morata edited, wrote, supervised, encoded, and analyzed the data. Mr. Jeric M. Rima designed the study and collected the data. Both authors revised, reviewed, and approved the final work.

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7.0 Conflict of Interests

There is no conflict or no conflict of interest.

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