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Student's Technological Skills and Academic Performance: Basis for Instructional Enhancement

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Abstract: This study aimed to assess the technological skills and academic performance of high school students at Buenavista Integrated School in the Zamboanga City Division. Employing a descriptive-quantitative research design, the findings revealed a strong positive correlation between students' technological skills and academic performance. No significant differences in technological proficiency were observed based on gender or socioeconomic status; however, older students exhibited higher proficiency. These results indicate that higher technological proficiency can significantly boost academic performance, underscoring the need for effective technology integration in schools. The study recommends targeted interventions, student training programs, and strategic resource allocation by school administrators to enhance the use of technology in teaching and learning processes.

***Keywords*: Technological Skills, Video editing, Creating Presentation, Word Processing, Internet Navigation.**

I. INTRODUCTION

In the dynamic landscape of twenty-first-century education, refining technological proficiency is essential for efficiently conducting work and adapting to emerging technologies. According to Phuapan et al. (2016), these skills are crucial for utilizing technology as a communication tool and managing information. Tejedor et al. (2020) emphasize enhancing digital abilities in communication, instruction, and methodology due to their potential impact on academic achievement (Yustika and Iswati, 2020). Hague and Payton (2010) define digital literacy as access to diverse practices and cultural materials usable with digital tools, involving effective creation and communication across various modes and formats.

In many countries, children face academic challenges due to limited access to technology. For instance, students in rural areas of developing countries like India and Nigeria often lack adequate digital resources, resulting in academic disparities (Gupta & Jain, 2018; Olatunji, 2017). Similarly, indigenous communities in remote regions of Australia and Canada struggle with technological disparities, hindering engagement with digital learning (McRae-Williams et al., 2018; OECD, 2019). These disparities highlight the urgency of understanding the relationship between technological skills and academic performance, especially where access is limited.

Academics and policymakers advocate integrating technological skills into the curriculum (Purnama et al., 2021). Governments and organizations support digital technology in education for promoting global competitiveness and job market resilience (Covello and Lei, 2010). Despite early initiatives by the Department of Education (DepEd) in the Philippines, there is no national standard for EdTech, though ICT in education is seen as a means to enhance services (Republic Act No. 10844, 2015).

This study aims to determine the technological skills and challenges faced by secondary school students at Buenavista Integrated School, Zamboanga City Division, and how these factors affect their academic performance during the 2023-2024 school year.

1.1 Statement of the Problem

This study aims to assess the technology skills and academic performance of high school students, determining whether they are proficient in technology or face challenges for the school year 2023-2024

Specifically, the study aims to address the questions;

1. What is the level of student's proficiency in technology in terms of:
   1.1 Video Editing
   1.2 Creating Presentation
   1.3 Word Processing
   1.4 Internet Navigation
2. What are the challenges encountered by the students in using technology in terms of:
   1.1 Video Editing
   1.2 Creating Presentation
   1.3 Word Processing

1.4 Internet Navigation

3. What is the academic performance of the students?
4. Is there a significant difference in the student's level of proficiency in technology when grouped according to:
   4.1 Sex
   4.2 Age
   4.3 Socioeconomic
5. Based on the findings of the study, what intervention can be proposed?

1.2 Scope and Delimitation of the Study

This study assessed the technological skills and academic performance of high school students at Buenavista Integrated School, Zamboanga City Division, during the school year 2023-2024. It focused on video editing, creating presentations, word processing, and internet navigation, and examined the influence of sex, age, and socioeconomic status. The study covered Grade 7 to Grade 10, coded as A, B, C, and D for anonymity.

II. RESEARCH METHODOLOGY

2.1 Research Design

This study employed a descriptive-quantitative research design to assess students' technological skills in video editing, creating presentations, word processing, and internet navigation. According to Creswell (2014), "descriptive research seeks to describe phenomena in their natural setting, with the goal of enhancing understanding of them" (p. 58). This approach involves systematic data collection and analysis to identify patterns and themes.

The descriptive-quantitative design is beneficial for providing a deep understanding of the research problem, particularly when the phenomenon is not well understood. It uses data collection methods such as surveys and document analysis to develop a nuanced comprehension of the subject.

This design is appropriate for this study as it examines the relationship between students' technological skills (independent variable) and their academic performance (dependent variable). The goal is to enhance instruction at Buenavista Integrated School, Zamboanga City Division, in preparation for the DepEd MATATAG curriculum, which emphasizes digitalization.

2.2 Population and Respondents of the Study

This study included all students in the Junior High School Department of Buenavista Integrated School. The total population of student-respondents was 566 across four selected grade levels. The largest number of students (158) was in Grade Level D, while the smallest number (122) was in Grade Level B.

2.3 Sampling Design

The study employed a probability sampling method, specifically purposive and stratified sampling. Purposive sampling facilitated the selection of respondents from specific categories, particularly students from schools under Buenavista Integrated School, Zamboanga City Division. Stratified sampling ensured proper representation of subpopulations that might differ significantly (McCombes, S. 2023, June 22). The number of respondents was limited to 113, meeting the researcher's criteria. Notably, a sample size ranging from 30 to 500 at a 5% confidence level was generally deemed adequate (Altunışık et al., 2004). This sample represented 20% of the total population, aligning with Gay's (1976) recommendation for sample populations.

2.4 Research Instrument

The researcher employed a researcher-made survey questionnaire for students, comprising four parts. Part I inquired about the respondent's profile, including their sex, age, and socioeconomic status. Parts II and III utilized a four-point Likert scale to assess the level of proficiency and the challenges encountered in using technology, specifically in video editing, creating presentations, word processing, and internet navigation, where 4= SA (Strongly Agree), 3= A (Agree), 2=DA (Disagree), and 1= SDA (Strongly Disagree). Part IV of the survey collected data on academic performance by measuring grades, specifically the general weighted average of their grades for the third quarter of the school year 2023-2024. This was conducted with the permission of the Principal/Officer-in-Charge and with the knowledge of the advisers, in accordance with the Data Privacy Act of 2012, Republic of the Philippines.

2.5 Validity and Reliability of the Research Instrument

The researcher-made instrument was validated by research experts and underwent pilot testing on 30 students from Buenavista Integrated School General Academic Strand (GAS), who shared the same characteristics as the target respondents for the study. Consequently, the instrument exhibited a reliability coefficient of 0.956 at Cronbach Alpha.

III. RESULTS AND DISCUSSIONS

Problem 1: What is the level of student's proficiency in technology in terms of video editing, creating presentation, word processing and internet navigation.

Table 1: Level of Student's Proficiency in Technology among Student- Respondents in terms of Video Editing

Statements *The student…*	**Mean**	**Verbal Description**	**Interpretation**
1. utilizes video editing software proficiently to enhance footage.	3.04	Agree	Moderately Proficient
2. combines different media elements skillfully to create engaging videos.	3.07	Agree	Moderately Proficient
3. adapts to new features in editing software quickly.	2.83	Agree	Moderately Proficient
4. troubleshoots technical issues encountered during the editing process adeptly.	2.86	Agree	Moderately Proficient
5. navigates through various editing tools with ease.	2.85	Agree	Moderately Proficient
Over-all Mean	**2.93**	**Agree**	**Moderately Proficient**

Legend: 3.25-4.00 Strongly Agree (SA) – Highly Proficient; 2.50-3.24 Agree (A) -Moderately Proficient; 1.75-2.49 Disagree (D) – Fairly Proficient; 1.00-1.74 Strongly Disagree (SD)- Not Proficient

Table 1 shows that the highest mean, 3.07, was achieved for the statement on skillfully combining different media elements to create engaging videos, followed closely by the statement on utilizing video editing software proficiently to enhance footage, with a mean of 3.04. Both statements received an "agree" rating, interpreted as moderately proficient. This implies that respondents have a moderate level of proficiency in both integrating various media elements for engaging videos and using video editing software effectively. While they demonstrate a good understanding and practical ability in multimedia video creation and editing, there is room for improvement to reach higher proficiency levels. Students are competent in using tools for video production but may not fully utilize advanced features to maximize video quality. They excel in producing engaging videos but may struggle with complex editing tasks, indicating a need for additional training and practice in media integration and advanced editing techniques.

Conversely, the lowest mean of 2.83 was achieved for the statement on adapting quickly to new features in editing software, which was also rated as agree and interpreted as moderately proficient. This implies that while respondents demonstrate moderate proficiency in adapting to new software features, they may face challenges or require more time to acclimate to new updates. Additional training and practice could enhance their ability to swiftly learn and utilize new tools and features in editing software, indicating room for improvement despite their satisfactory current skill level.

Table 2: Level of Student's Proficiency in Technology among Student-Respondents in terms of Creating Presentation

Statements *The student…*	**Mean**	**Verbal Description**	**Interpretation**
1. demonstrates proficiency in creating visually appealing presentations.	3.15	Agree	Moderately Proficient
2. utilizes presentation software proficiently (e.g., PowerPoint, Google Slides).	3.02	Agree	Moderately Proficient
3. incorporates multimedia elements (e.g., images, videos, and audio)	3.28	Strongly Agree	Highly Proficient
4. chooses appropriate fonts and colors to improve readability.	3.28	Strongly Agree	Highly Proficient
5. creates cohesive transitions between different topics.	3.04	Agree	Moderately Proficient
Over-all Mean	**3.15**	**Agree**	**Moderately Proficient**

Table 2 shows that respondents achieved the highest mean score of 3.28 for integrating multimedia elements and selecting fonts and colors to enhance readability, which is interpreted as highly proficient. This indicates that students skillfully blend multimedia components to improve presentation clarity. The second-highest mean score, 3.04, was for demonstrating proficiency in creating visually appealing presentations, interpreted as moderately proficient. While students exhibit competency, there is room for improvement in maintaining consistency and refining transitions between slides. Additional guidance and practice could enhance their skills.

Conversely, in the use of presentation software (e.g., PowerPoint, Google Slides), respondents scored the lowest mean of 3.02, also interpreted as moderately proficient. This implies there is room for improvement in leveraging advanced features. Despite having a basic understanding, students may not fully maximize the software's potential. Further training and guidance are recommended to enhance proficiency. Garner and Alley (2012) explore students' proficiency levels in utilizing presentation software, suggesting room for improvement despite general competence.

Table 3: Level of Student's Proficiency in Technology among Student- Respondents in terms of Word Processing

Statements *The student…*	**Mean**	**Verbal Description**	**Interpretation**
1. customizes document templates to suit specific project requirements.	3.09	Agree	Moderately Proficient
2. collaborates effectively on shared documents with peers	2.73	Agree	Moderately Proficient
3. troubleshoots formatting issues efficiently when encountered.	2.71	Agree	Moderately Proficient
4. integrates multimedia elements seamlessly into documents as needed	3.03	Agree	Moderately Proficient
5. automates repetitive tasks using shortcuts for efficiency.	2.76	Agree	Moderately Proficient
Over-all Mean	**2.85**	**Agree**	**Moderately Proficient**

Table 3 shows that respondents achieved the highest mean score of 3.09 for customizing document templates to meet specific project requirements, showcasing adaptability and competence. Following closely, a mean of 3.03 was observed for seamlessly integrating multimedia elements into documents as needed. This implies notable proficiency in utilizing word processing tools effectively, with room for improvement in multimedia integration. While students demonstrate competency in customizing document templates and integrating multimedia elements, there is potential for further refinement and development. Additional training or guidance may enhance proficiency levels. Students often excel in tailoring documents but may benefit from more coherent multimedia integration. Providing support and practice opportunities could improve overall document creation skills.

Conversely, the lowest mean score of 2.71 was for efficiently troubleshooting formatting issues. While students show reasonable skill in resolving issues, there's room for improvement in efficiency. They may require more time and effort to address formatting challenges effectively. Additional support and focused training could enhance troubleshooting proficiency. Hemmati and Issa (2017) discuss common obstacles students face in using technology for writing, suggesting formatting issues as a significant challenge. Sitzmann and Ely (2011) explore metacognitive skills in technical environments, indicating students may benefit from instruction to improve troubleshooting efficiency.

Table 4: Level of Student's Proficiency in Technology among Student-Respondents in terms of Internet Navigation

Statements *The student…*	**Mean**	**Verbal Description**	**Interpretation**
1. utilizes search engines effectively to conduct online research	3.31	Strongly Agree	Highly Proficient
2. navigates through various websites to find relevant content.	3.02	Agree	Moderately Proficient
3. gets access on educational resources from different online platforms.	3.25	Strongly Agree	Highly Proficient
4. evaluates the credibility of online sources before using them	3.22	Agree	Moderately Proficient
5. protects personal information while browsing the internet.	3.34	Strongly Agree	Highly Proficient
Over-all Mean	**3.23**	**Agree**	**Moderately Proficient**

Table 4 shows that respondents attained the highest mean score of 3.34 for protecting personal information while browsing the internet, indicating strong proficiency in online privacy. Following closely, a mean of 3.31 was observed for utilizing search engines effectively for online research, reflecting advanced information retrieval skills. Students demonstrate a proactive approach to online privacy and security, along with adeptness in utilizing search engines.

Conversely, there is room for improvement in navigating various websites to find relevant content, as indicated by the lowest mean score of 3.02. Livingstone and Helsper (2007) highlight the risks young people face online, suggesting the need for proficient data safeguarding. Valverde-Aliseda and Ruiz-Castillo (2014) propose a model for fostering digital citizenship, underscoring the role of schools in equipping students with online safety skills. Marcoulides and Heck (1999) discuss electronic literacy, suggesting varying degrees of proficiency in website navigation. Walsh (2016) explores information literacy skills, emphasizing the need for instruction to improve online research efficiency.

Table 5: Summary of the Level of Student's Proficiency in Technology

Indicators	**Mean**	**Interpretation**
Video Editing	2.93	Moderately Proficient
Creating Presentation	3.15	Moderately Proficient
Word Processing	2.86	Moderately Proficient
Internet Navigation	3.23	Moderately Proficient
Over-All Mean	**3.04**	**Moderately Proficient**

Legend: 3.25-4.00 Highly Proficient; 2.50-3.24 Moderately Proficient; 1.75-2.49 Fairly Proficient; 1.00-1.74 Not Proficient

Table 5 shows the level of students' proficiency in technology among the student-respondents. It shows that respondents were moderately proficient in technology in terms of video editing, creating presentations, word processing, and internet navigation. This means that respondents exhibited a moderate level of proficiency in these areas. This implies that students possess a foundational understanding and skill set in these technological domains, but there is room for further development and refinement in their abilities. This moderate proficiency suggests that students have the capability to perform basic tasks and utilize common features and tools within each technology category. However, they may not yet have achieved mastery or advanced proficiency levels in these areas.

Furthermore, it implies that students have the potential to enhance their technological skills through continued practice, exposure to new tools and techniques, and targeted learning opportunities. With further support and resources, students can progress towards higher levels of proficiency, enabling them to leverage technology more effectively for academic, professional, and personal pursuits. Marcoulides and Heck (1999) suggest that students can perform basic tasks and utilize common tools within each technology category.

However, Bernard and Moeller (2018) note that achieving mastery or advanced proficiency appears to require additional practice, exposure to new functionalities, and targeted learning opportunities. Johnson (2019) emphasizes that by providing continued support and resources, educators can help students progress towards higher levels of technological expertise. Valverde-Aliseda and Ruiz-Castillo (2014) also highlight the importance of empowering students to leverage technology more effectively across academic, professional, and personal endeavors.

Problem 2: What are the challenges encountered by the students in using technology in terms of video editing, creating presentation, word processing and internet navigation.

Table 6: Challenges Encountered in Using Technology among Student-Respondents in terms of Video Editing

Statements *The student…*	**Mean**	**Verbal Description**	**Interpretation**
1. struggles with limited access to necessary editing equipment.	3.00	Agree	Moderately Challenged
2. navigates video editing software with difficulty.	2.82	Agree	Moderately Challenged
3. performs poorly in editing techniques.	2.66	Agree	Moderately Challenged
4. encounters difficulty in exporting edited videos.	2.75	Agree	Moderately Challenged
5. faces challenges in coordinating on group editing projects.	3.06	Agree	Moderately Challenged
Over-all Mean	**2.86**	**Agree**	**Moderately Challenged**

Legend: 3.25-4.00 Strongly Agree (SA) – Highly Challenged; 2.50-3.24 Agree (A) -Moderately Challenged; 1.75-2.49 Disagree (D) – Fairly Challenged; 1.00-1.74 Strongly Disagree (SD)- Not Challenged

Table 6 shows that respondents faced challenges in coordinating group editing projects, with the highest mean score of 3.06. They also struggled with limited access to necessary editing equipment, scoring 3.00. These challenges suggest difficulties in communication, collaboration, and accessing editing tools, which impact their ability to produce high-quality work. Students often encounter issues in managing workflow and accessing equipment for editing tasks. Additional support and resources, coupled with effective communication strategies, can help overcome these challenges. Achugar and Ensign (2009) discuss potential challenges in collaboration, while Kollöffel et al. (2007) explore difficulties in coordinating writing projects, which can also apply to editing tasks.

Conversely, respondents faced moderate challenges in performing editing techniques, scoring 2.66. They struggle with grammar, punctuation, and advanced editing skills, indicating the need for targeted instruction and practice to improve proficiency. Fitzgerald (2010) suggests students find editing challenging, while Yancey (2004) proposes alternative learning strategies to enhance editing skills.

Table 7: Challenges Encountered in Using Technology among Student-Respondents in terms of Creating Presentation

Statements *The student…*	**Mean**	**Verbal Description**	**Interpretation**
1. lacks proficiency in using presentation software such as PowerPoint.	2.77	Agree	Moderately Challenged
2. encounters difficulties when designing visually appealing slides.	2.92	Agree	Moderately Challenged
3. struggles with integrating multimedia elements such as images, videos, and audio.	2.97	Agree	Moderately Challenged
4. faces challenges when organizing content effectively.	3.04	Agree	Moderately Challenged
5. finds it challenging to transition between different topics.	2.84	Agree	Moderately Challenged
Over-all Mean	**2.91**	**Agree**	**Moderately Challenged**

Table 7 shows that respondents struggled most with effectively organizing content, scoring the highest mean of 3.04. They also faced challenges in integrating multimedia elements, scoring 2.97. These difficulties implies issues in structuring information and seamlessly incorporating diverse media components into their work. Students often find it hard to organize content logically and integrate multimedia elements seamlessly into their projects, impacting clarity and engagement. Additional support and resources can assist in overcoming these challenges. Bang and Dufresne (2013) emphasize the importance of organization in effective

presentations, while Mayer (2014) discusses principles of multimedia learning that support the need for effective content organization.

Conversely, students faced moderate challenges in using presentation software like PowerPoint, scoring 2.77. They struggle with navigating features efficiently, formatting slides, and integrating multimedia elements, which hinders their ability to create impactful presentations. Ahn and Sitzmann (2011) suggest that students need support in utilizing technology effectively, including presentation software proficiency. Shapiro (2004) highlights the role of technology in writing instruction, indirectly suggesting the need for guidance in leveraging presentation software for creating presentations.

Table 8: Challenges Encountered in Using Technology among Student-Respondents in terms of Word Processing

Statements ***The student…***	**Mean**	**Verbal Description**	**Interpretation**
1. faces difficulty using word processing software to format documents. (e.g., Microsoft Word, Google Docs)	2.85	Agree	Moderately Challenged
2. encounters challenges in grammar-checking.	3.12	Agree	Moderately Challenged
3. finds it difficult to manage documents.	2.82	Agree	Moderately Challenged
4. collaborates poorly with peers in word processing.	2.80	Agree	Moderately Challenged
5. struggles to adapt document formatting for different purposes.	2.92	Agree	Moderately Challenged
Over-all Mean	**2.90**	**Agree**	**Moderately Challenged**

Table 8 shows that respondents achieved the highest mean score of 3.12 on challenges in grammar-checking, and the second-highest mean of 2.92 on adapting document formatting. These scores indicate difficulties in identifying and correcting grammatical errors and in tailoring document layouts to specific requirements. Sentner's (2009) study highlights the persistent struggle students face in detecting their own grammatical errors, even with training, underscoring the need for additional guidance in grammar-checking. Wolfe and Butler (2005) further support this, showing the widespread prevalence of grammatical errors in student writing and the importance of addressing this issue comprehensively.

Conversely, the lowest mean score of 2.80 relates to poor collaboration with peers in word processing. This indicates significant challenges in working together to edit and refine documents. Students struggle with task coordination, effective communication, and integrating contributions. Despite basic word processing skills, they need more support for collaboration. Achugar and Ensign (2009) and Kollöffel et al. (2007) support these findings, noting common issues in coordinating tasks and communication barriers. Ahn and Sitzmann (2011) suggest that students could benefit from structured teamwork opportunities and guidance on collaborative editing techniques, as also recommended by Shapiro (2004).

Table 9: Challenges Encountered in Using Technology among Student-Respondents in terms of Internet Navigation

Statements ***The student…***	**Mean**	**Verbal Description**	**Interpretation**
1. finds challenges when conducting online research.	3.02	Agree	Moderately Challenged
2. faces difficulties in evaluating online source credibility.	3.02	Agree	Moderately Challenged
3. encounters issues with navigating online platforms for educational resources.	2.94	Agree	Moderately Challenged
4. struggles to use online communication tools for academic purposes.	2.77	Agree	Moderately Challenged
5. experiences difficulty in maintaining online privacy.	2.66	Agree	Moderately Challenged
Over-all Mean	**2.88**	**Agree**	**Moderately Challenged**

Table 9 shows that the respondents achieved the highest mean score of 3.02 on challenges related to conducting online research and evaluating source credibility, with the second-highest mean of 2.94 on navigating online educational platforms. These scores reflect difficulties in finding reliable information, assessing source credibility, and efficiently accessing online learning materials. Pasiczny and Winograd's (2017) study on middle school students' ability to evaluate online information supports these findings, highlighting struggles in assessing source credibility and identifying bias. Despite having access to vast online resources, students often rely on the first source encountered and have difficulty discerning bias or source authority.

Conversely, the lowest mean score of 2.66 relates to maintaining online privacy, indicating notable challenges in safeguarding personal information. Despite awareness of the importance of online privacy, students struggle to implement effective strategies, such as creating strong passwords or understanding privacy settings. Czerniawski and McLaughlin's (2017) research on student digital citizenship corroborates these findings, revealing a gap between students' awareness of online privacy and their ability to protect their information effectively. Despite acknowledging the importance of privacy, students lack practical skills in implementing privacy measures.

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Table 10: Summary of the Challenges Encountered in Using Technology

Indicators	Mean	Interpretation
Video Editing	2.86	Moderately Challenged
Creating Presentation	2.91	Moderately Challenged
Word Processing	2.90	Moderately Challenged
Internet Navigation	2.88	Moderately Challenged
Over-All Mean	**2.89**	**Moderately Challenged**

Legend: 3.25-4.00 Highly Challenged; 2.50-3.24 Moderately Challenged;
1.75-2.49 Fairly Challenged; 1.00-1.74 Not Challenged

Table 10 shows that the challenges faced by student-respondents in using technology, indicating a moderate level of difficulty across various tasks such as video editing, creating presentations, word processing, and internet navigation. This consistency suggests common obstacles encountered by students in different technological domains, highlighting the complexity of integrating technology into educational and professional contexts.

The moderate level of challenge implies that while students have foundational skills in these areas, there is still room for improvement and refinement to overcome specific limitations. This underscores the importance of providing support and resources to help students enhance their digital literacy skills and effectively utilize technology.

Voogt, Weller, and Knezek's (2013) exploration of digital literacy aligns with this interpretation, emphasizing the complexities involved in mastering technological skills beyond the basics. Their work underscores the need for educational approaches that go beyond technical skills, recognizing the broader context of technology use across various settings.

Problem 3: What is the academic performance of the students?

Table 10: Academic Performance of the Students for 3rd Quarter, School Year 2023-2024

Indicator	Mean	Verbal Description
General Weighted Average Grade	86.50	Very Satisfactory

Legend: 90-100 (Outstanding); 85-89 (Very Satisfactory); 80-84 (Satisfactory); 75-79 (Fairly Satisfactory); Below 75 (Did Not Meet Expectations)

Table 11 displays the academic performance of students in the 3rd quarter of the School Year 2023-2024. They received a mean score of 86.50, categorized as "Very Satisfactory." This indicates that students performed very well across their academic subjects during this period, demonstrating a strong level of understanding and achievement. The rating suggests that students consistently met or exceeded academic expectations, showing diligence and engagement in their studies. Astin (1993) and Hattie (2008) highlight factors like effective teaching and student engagement that contribute to academic success, supporting the positive performance observed in this study.

Problem 4: Is there a significant difference in the student's level of proficiency in technology when grouped according to sex, age and socioeconomic.

Table 12: Student's Level of Proficiency in Technology when Grouped According to Sex

Variable	Sex	Mean	t	p-value	Interpretation
Student's Proficiency and Sex	Male	3.0571	.375	.708	Not Significant
	Female	3.0223			

Table 12 compares students' technology proficiency based on gender. The mean scores for male (3.0571) and female (3.0223) students show no significant difference, with a t-value of .375 and a p-value of .708. Therefore, the null hypothesis, stating that gender doesn't affect students' technology proficiency, is accepted. These results suggest that factors other than gender, such as interest and access to resources, may influence technological skills. This underscores the importance of providing equal opportunities for all students to develop their tech abilities. Warschauer and Matuchniak (2010) found similar results in their study on digital literacy skills among multilingual learners.

Table 13: Student's Level of Proficiency in Technology when Grouped According to Age

Variable	Age	Mean	t	p-value	Interpretation
Student's Proficiency and Age	10 to 15 years old	2.9804	-2.023	.046	Significant
	16 to 20 years old	3.1733			

Table 13 compares students' technology proficiency based on their age. The mean scores for younger students (2.9804) and older students (3.1733) show a significant difference, with a t-value of -2.023 and p-value of .046. This indicates that age does not significantly influence technology proficiency. Factors like interest, experience, and access to resources may affect technological skills more than age. Providing equal opportunities for all students to develop their tech abilities is essential. Prensky's (2001) concept of "digital natives" and "digital immigrants" suggests younger students might have an advantage due to their familiarity with technology. Vandenbosch, Van der Heijden, & Passenier's (2015) research on older adults' digital competence indirectly

supports this idea. Additionally, Feng et al.'s (2018) meta-analysis confirms that younger people tend to be more proficient in using technology than older adults.

Table 14: Student's Level of Proficiency in Technology when Grouped According to Socioeconomic Status

Variable	Socioeconomic Status	Mean	t	p-value	Interpretation
Student's Proficiency and Socioeconomic	Middle-Income	2.9906	-.410	.683	Not Significant
	Low-Income	3.0409			

Table 14 compares students' technology proficiency based on their socioeconomic status. The mean scores for male (2.9906) and female (3.0409) respondents indicate no significant difference, with a t-value of -.410 and p-value of .683. This implies that socioeconomic status does not significantly affect technology proficiency. Factors like interest, experience, and access to resources may impact tech skills more than socioeconomic status. Warschauer (2003) discusses the digital divide, highlighting how students from lower socioeconomic backgrounds may have less access to technology at home. Moeller & Pelletier (2002) suggest that this limited access can contribute to an achievement gap in education. Therefore, providing equal opportunities for all students to develop tech skills is crucial.

IV. CONCLUSIONS

The study concluded that students' technological skills are crucial for their academic success in today's digitally driven educational environment. The direct correlation between tech proficiency and academic performance underscores the necessity for educational systems to adapt and integrate technology more effectively. The findings suggest that addressing disparities in technological skills among students is essential for fostering an inclusive educational setting where all students can thrive. By recognizing and enhancing students' technological capabilities, educational stakeholders can ensure that technology serves as a lever for academic equity and excellence.

V. RECOMMENDATIONS

Based on the findings, the study recommended that Department of Education officials develop policies prioritizing technology integration and allocate sufficient resources to enhance technological infrastructure and training in schools. School heads were advised to utilize insights from the study to assess their schools' technological readiness and implement plans to improve tech resources and support. Teachers were encouraged to adapt their instructional methods to include more technology-based learning and to pursue professional development in technological education to better support their students. Additionally, students were urged to engage in activities and programs that enhance their technological skills. These recommendations aim to create an educational environment where technology is seamlessly integrated, enhancing learning outcomes and preparing students for future challenges in a technology-centric world.

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