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Laptop Usage and Academic Engagement: A Study of University Students at GCWUS

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Abstract
This study investigated laptop usage patterns and their academic impact among 328 university students at Government College Women University, Sialkot (GCWUS). While laptops are essential digital learning tools, understanding their specific usage at GCWUS was unclear. Data from a structured questionnaire revealed widespread academic use for research, assignments, and presentations. However, the study identified gaps in technical skills like software installation and troubleshooting. Chi-square tests showed a significant link between laptop usage duration and academic engagement. Conversely, Kruskal-Wallis tests indicated no significant variation in academic productivity or usage time across disciplines. The findings suggest that effective usage, rather than duration, shapes academic benefits. Recommendations include enhancing digital literacy and institutional support to maximize academic outcomes.

Keywords: Laptop Usage, Academic Performance, Digital Literacy, Higher Education, Student Engagement

Introduction
In the 21st century, technology has significantly transformed the landscape of education, reshaping student access, engaging with, and producing academic content. Among the various digital tools, laptops have emerged as indispensable resources in higher education because of their portability, versatility, and capacity to support a wide range of academic tasks.

At the Government College Women's University, Sialkot (GCWUS), an increasing number of students rely on laptops for both academic and personal use. The widespread adoption of digital learning tools, particularly after the COVID-19 pandemic, has further emphasized the importance of laptops in sustaining educational continuity. Laptops are no longer supplementary devices but are central to modern academic life, enabling students to attend virtual classes, conduct research, complete assignments, and collaborate in real time.

Despite their ubiquity, little is known about the specific ways in which students at GCWUS use laptops. It remains unclear whether students predominantly use them for academic engagement, communication, entertainment, or other purposes. Understanding these patterns is crucial for educators and administrators to promote effective laptop use, address potential distractions, and bridge gaps in digital skills.

Moreover, students' academic disciplines, digital infrastructure, and access to

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personal or shared devices may influence their usage behavior. For instance, science and technology students often require high-performance devices for specialized software, whereas humanities students may primarily use laptops for reading and writing. Institutional factors, such as Wi-Fi availability, technical support, and digital policies, also shape how students engage with technology.

Given this context, the present study sought to explore the patterns, purposes, and perceived academic impact of laptop usage among GCWUS students. This study aimed to address the following research questions:
To what extent do students use laptops for various academic tasks?
Does the duration of laptop use affect students perceived academic productivity?
Is there a difference in laptop usage time among students from different fields of study?

By examining these questions, this study contributes to a better understanding of how digital tools are integrated into student life and offers insights for improving digital support systems in higher education institutions. To contextualize our study, we first review existing literature on the academic use of laptops, highlighting gaps our research aims to fill

Literature Review

The use of laptops in higher education presents significant advantages and challenges. On the one hand, laptops facilitate immediate access to academic resources, enable efficient note-taking, and support collaborative learning through group projects and online communication platforms (Basit et al., 2021; Zilka, 2021). The flexibility they provide caters to diverse learning styles and has been linked to enhanced student engagement and problem-solving skills.

Empirical studies have suggested that regular laptop use is positively correlated with academic performance. For instance, Day et al. (2021) found that students who frequently engaged in educational content on laptops tended to achieve better academic outcomes. Laptops also enhance students' capacity for real-time collaboration and allow seamless transitions between research, writing, and presentation preparation.

However, there are several concerns about these benefits. A prominent issue involves the health risks associated with prolonged laptop use, particularly musculoskeletal disorders (MSDs). Students often maintain poor ergonomic postures, which contributes to chronic discomfort in areas such as the neck and shoulders (DM et al. 2023). Additionally, prolonged screen exposure is associated with digital eye strain and disrupted sleep patterns (Aberame et al. 2023).

Beyond physical concerns, academic use of laptops is frequently undermined by non-academic distractions. Research has shown that multitasking with laptops, such as browsing social media or gaming during study sessions, negatively affects students' attention, retention, and academic performance (Crumb et al., 2020). This finding highlights the need for stronger self-regulation skills to mitigate the cognitive costs of digital distractions.

Another key factor influencing laptop effectiveness is the students' digital competence. While most students possess basic technical abilities, many lack the advanced skills necessary for tasks such as software installation, troubleshooting, or managing security risks (. & Elantheraiyan, 2021). This digital skills gap can limit the academic benefits that laptops are meant to provide, as some students

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primarily use them for entertainment rather than educational purposes.

Collectively, these findings suggest that, while laptops are invaluable tools in higher education, their impact on student success is not automatic. Effective laptop use requires adequate digital literacy and institutional strategies that promote meaningful academic integration while minimizing potential drawbacks.

Research Objectives

This study aimed to answer the following research questions:

1) To what extent do students use laptops for various academic tasks?
2) How does laptop use influence students' academic performance and productivity?
3) Is there a difference in laptop usage across academic disciplines?

Methodology

Research Design

A descriptive cross-sectional survey design was employed, using a structured questionnaire administered via Google Forms.

Participants

The participants were 328 undergraduate students enrolled at the Government College Women's University, Sialkot.

Data Collection and Tools

The questionnaire included items on laptop ownership, academic usage, technical skills, and perceptions of productivity. Participation was voluntary and anonymous.

Data Analysis

Descriptive statistics were used for frequencies and percentages. Inferential analysis included chi-square tests for association and Kruskal-Wallis H tests for group differences. SPSS Version 27 was used for statistical analysis.

Results

The result of descriptive portion is as follows

Demographic Profile

A total of 328 students from the Government College Women's University, Sialkot, participated in this study. The sample consisted of 52% urban residents and 48% rural residents. Most respondents (53%) were aged between 18–20 years, followed by 42.1% aged 21–23, and 4.9% aged 23 or above. In terms of academic discipline, 67.7% belonged to Natural Sciences, 17.4% to Management Sciences, 11.9% to Social Sciences, and 3% to other fields. Students from all academic years participated, with 41.5% in their second year, 33.5% in their fourth year, and 12.5% each in their first and third years.

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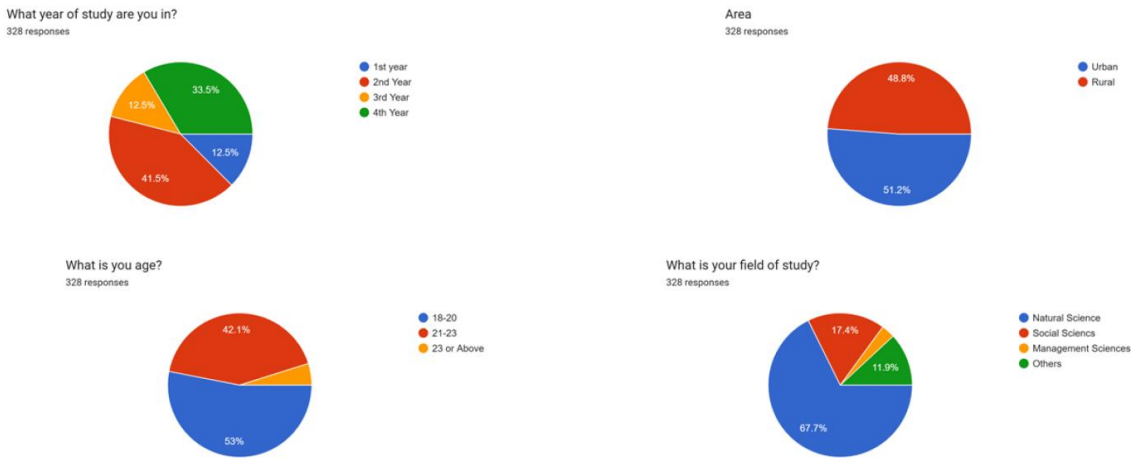

Figure 1: Demography

Laptop Ownership and Usage Patterns

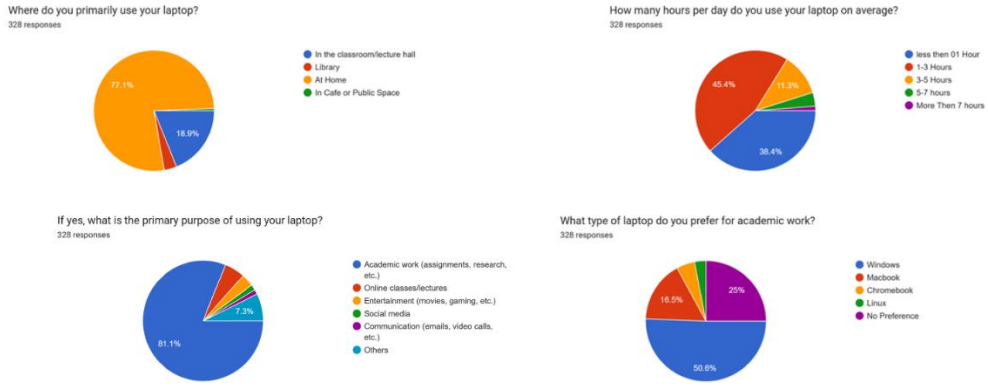

Figure 2: Laptop Ownership and Usage Patterns

A significant majority (81%) reported using laptops primarily for academic purposes, including assignments and research. Entertainment (29%) and other miscellaneous purposes (29%) were secondary reasons for usage. Regarding usage duration, 45% of students used laptops for 1–3 hours daily, 38% for less than one hour, and 11.3% for 3–5 hours. Only 4.9% reported using laptops for more than 5 hours. The majority (77%) used their laptops at home, while 18.9% used them in classrooms and 3.4% in the library. Windows laptops are the preferred choice for academic work (50.6%), due to their compatibility and affordability. 25% of respondents had no specific preference, while 16.5% favored MacBook for their performance and design. Chromebooks and Linux systems were least preferred, suggesting limited appeal for academic tasks that require broader software support. These results highlight Windows as the dominant platform among students for academic use.

Technical Knowledge

The findings revealed mixed levels of digital proficiency. While 62.5% of students did not know how to install Windows, 50.6% were able to install software. Basic troubleshooting skills were lacking in 65.5% of respondents. On the other hand, 80.2% were proficient in sending and receiving emails. Familiarity with cloud

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storage (68%) and video conferencing tools (79%) was relatively high, but only 46.6% were aware of cybersecurity measures such as password management and phishing risks. In terms of self-assessed skills, 67.7% considered themselves beginners, 26.8% intermediate, and only 5.5% advanced users.

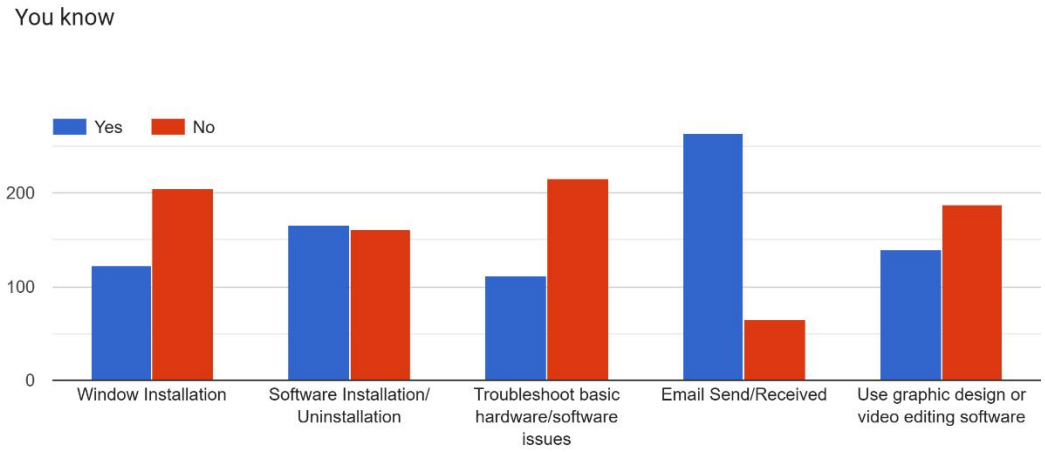

Figure 3: Technical Knwlodge

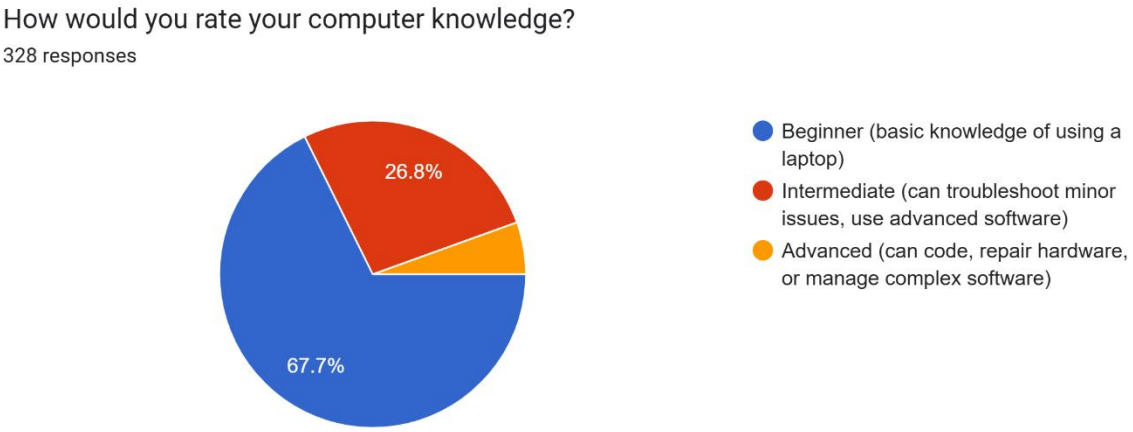

Figure 4Rate of Computer Knowledge

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Academic Laptop Use

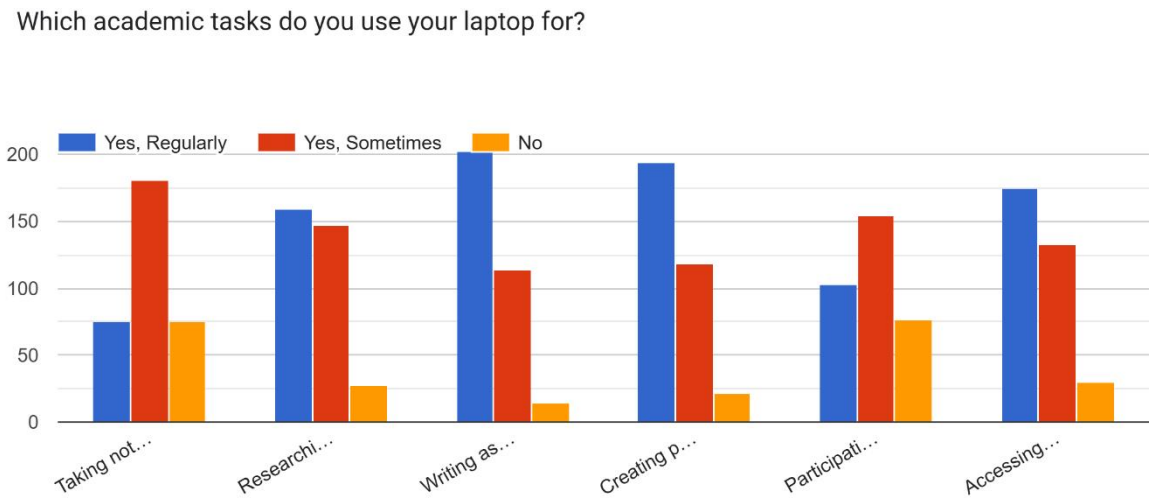

Figure 5: Academic Use of Laptop

Laptops were widely used for academic tasks. Most students used "Always" (42.4%) or "Sometimes" (44.2%) for educational purposes. Specific tasks included:

Online Research: 91.8% used laptops either regularly or sometimes.
Writing Assignments: 96.1% engage regularly or sometimes.
Creating Presentations: 94.3% reported regular or occasional use.
Accessing Course Materials: 91.1% engaged regularly or sometimes.
Taking Notes and Online Discussions: Engagement was moderate, with 77.4% and 76.5% participating, respectively.

Perceived Productivity and Challenges

A majority of students found laptops helpful for academic success—40.2% rated them as "Very Helpful" and 52.4% as "Somewhat Helpful". However, students also reported intermittent technical challenges:
Distractions (e.g., social media): 74.1% experienced them.
Limited Battery Life: 71.9% reported occasional or regular issues.
Internet Connectivity: 69.9% reported problems.
Lack of Technical Skills: 72.8% experienced this to some extent.

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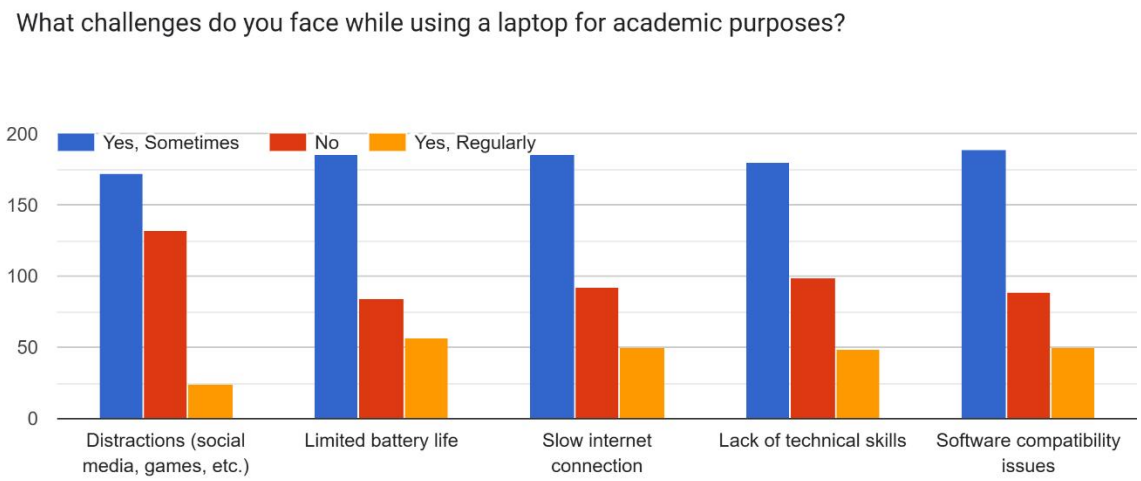
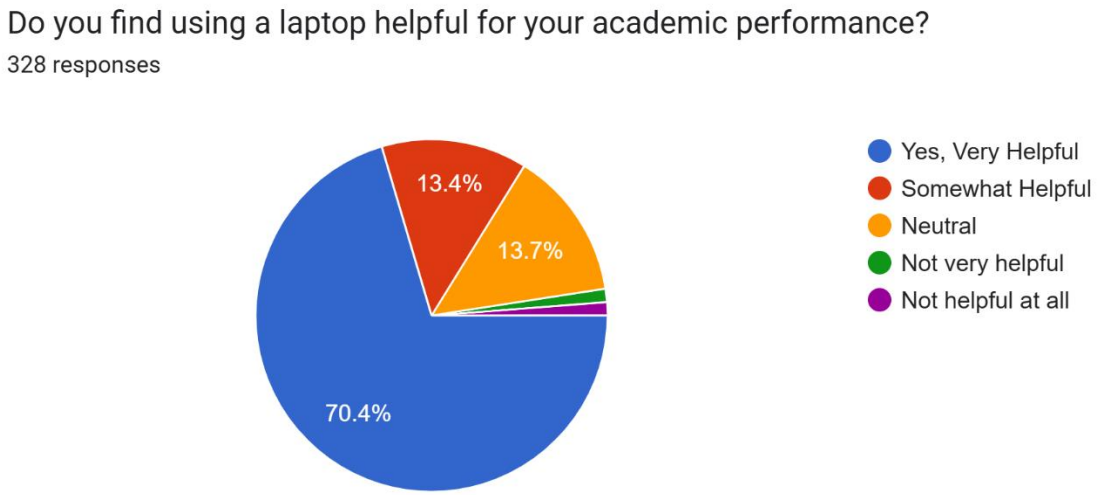


Figure 7: Challenges



Laptops play a key role in academic success. An overwhelming 70.4% of respondents said laptops are very helpful for their studies. These students use laptops for note-taking, research, assignments, and accessing online resources. Another 27% felt laptops were somewhat helpful or had no strong opinion, while only a small fraction—less than 3%—found laptops not helpful. Most students see laptops as essential tools for academic achievement, underscoring the importance of digital access in modern education. laptops boost academic productivity: 61.6% reported significant improvements, citing faster note-taking, digital resource access, and collaboration tools. Another 29.9% noted moderate gains, like better organization. However, 8.2% saw no change, and 0.3% experienced decreased productivity, often due to distractions or technical issues. While laptops enhance efficiency for many, their effectiveness hinges on mindful usage—balancing tech benefits with focus strategies to minimize distractions. Laptops are essential for university students: 88.7% said "No," 8.5% said "Yes," and the remaining 2.8% (inferred) chose "Maybe." This suggests most respondents don't view laptops as essential, possibly due to alternatives like tablets, desktops, or university-provided resources.

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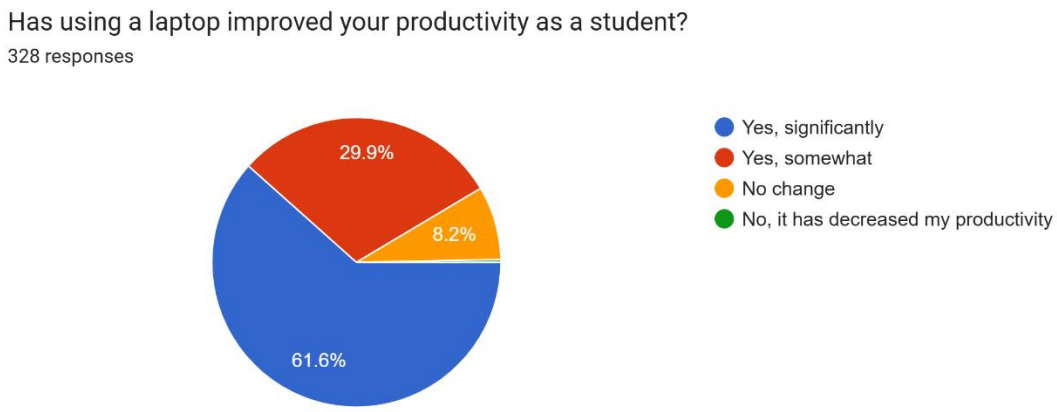

Figure 8: Helpful in Improved Productivity

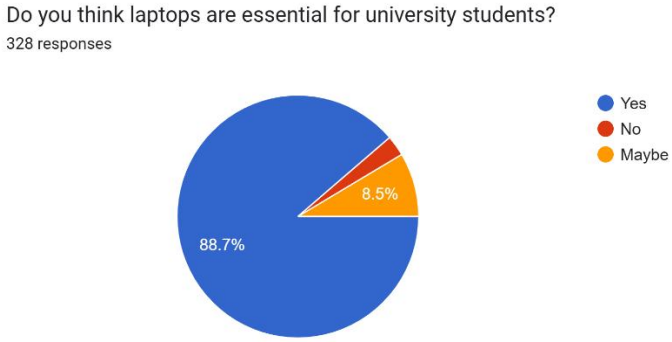

Figure 9: Essential for University Students

Inferential Statistics

This section addresses the study's three research questions using inferential statistical techniques, including Chi-square tests and Kruskal-Wallis H tests. Analyses were conducted using SPSS (Version 27).

Research Question 1: Is laptop usage related to engagement in academic tasks?

A series of Chi-square tests of independence were conducted to examine the association between daily laptop usage duration and participation in various academic tasks. Results indicated statistically significant associations for all variables.

Table 01: Result of Chi-Square Test for Association

Academic Tasks	Chi-Square	P-Value	Interpretation
laptop for academic purpose	47.853	<0.001	Significant
Taking Notice	15.528	0.050	Significant
Researching Online	61.949	<0.001	Significant
Writing assignment/reports	24.333	0.002	Significant
Creating Presentation	29.732	<0.001	Significant
Participating in online	20.875	0.007	Significant

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discussion/forums			
Accessing Course Materials	24.370	0.002	Significant

These findings indicate that students who spent more time using laptops were significantly more engaged in all major academic tasks. This suggests a positive association between laptop usage and academic involvement.

Research Question 2: Does the duration of laptop use affect students perceived academic productivity?

A Kruskal-Wallis H test was performed to determine if perceived academic productivity differed across groups based on hours of laptop usage per day. The test revealed no statistically significant difference:

- $H(4) = 3.183$, $p = 0.528$.

This suggests that the number of hours spent using a laptop does not significantly affect students perceived academic productivity.

Research Question 3: Is there a difference in laptop usage time across academic disciplines?

A Kruskal-Wallis H test was conducted to assess differences in laptop usage hours among students from different academic fields. The results were not statistically significant:

$$\chi^2(3) = 1.129, p = 0.770.$$

Laptop usage duration did not significantly vary across disciplines, suggesting that laptops are universally integrated into student academic routines regardless of field.

Conclusion

This study examined the usage patterns, purposes, and perceived academic impacts of laptops among students at Government College Women University, Sialkot. The findings demonstrate that laptops are deeply embedded in students' academic routines, with most students regularly using them for critical educational tasks such as conducting research, writing assignments, and accessing course materials. Despite widespread usage, significant gaps exist in students' technical knowledge, particularly in areas such as software installation, troubleshooting, and digital security. The results from the chi-square analysis confirmed a strong association between increased laptop usage time and engagement in academic tasks. However, the duration of use did not significantly affect students perceived academic productivity, suggesting that effective usage—not time spent—is a more important factor. Moreover, usage patterns were largely similar across academic disciplines, indicating that laptops are universally valued tools regardless of students' field of study. While most students benefit from laptop use, the presence of distractions, limited internet access, and lack of digital skills continue to hinder optimal academic outcomes.

Recommendations

To maximize the academic benefits of laptop use, the following steps are recommended: Enhance digital literacy training by incorporating technical skill workshops into the curriculum. Improve institutional support through reliable Wi-Fi access, technical helpdesks, and affordable access to devices. Promote digital well-being by guiding students on minimizing distractions and managing

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screen time effectively. By addressing these areas, universities can ensure that laptop use supports equitable, productive, and technology-enabled learning experiences for all students.

Limitations and Future Research

This study was limited to a single institution and relied on self-reported data. Future research could expand to multiple universities, use longitudinal designs, and examine the impact of specific software tools or teaching methods on laptop use effectiveness.

References

1. Allen, M., LeFebvre, Luke, LeFebvre, Leah, Bourhis, J., 2020. Is the pencil mightier than the keyboard? A meta-analysis comparing the method of notetaking outcomes. Southern Communication Journal, [e-journal] 85(3), pp. 143-154. https://doi.org/10.1080/1041794X.2020.1764613
2. Aragon-Mendizabal, E., Delgado-Casas, C., Navarro-Guzman, J.-I., Menacho-Jimenez, I., Romero-Oliva, M.-F., 2016. A comparative study of handwriting and computer typing in note-taking by university students. Comunicar, [e-journal] 24(48), pp. 101-107. https://doi.org/10.3916/C48-2016-10
3. Artz, B., Johnson, M., Robson, D., Taengnoi, S., 2020. Taking notes in the digital age: Evidence from classroom random control trials, Journal of Economic Education. [e-journal] 51(2), pp. 103-115. https://doi.org/10.1080/00220485.2020.1731386
4. Barak, M., Lipson, A. and Lerman, S., 2006. Wireless laptops as means for promoting active learning in large lecture halls. Journal of Research on Technology in Education, [e-journal] 38(3), pp. 245-263. https://doi.org/10.1080/15391523.2006.10782459
5. Booth, Andrew and Booth, A, 2006. Brimful of STARLITE: toward standards for reporting literature searches. Journal of the Medical Library Association, pp. 10. Bui, D.C., Myerson, J. and Hale, S., 2013. Note-taking with computers: Exploring alternative strategies for improved recall. Journal of Educational Psychology, [e-journal] 105, pp. 299-309. https://doi.org/10.1037/a0030367
6. Carrier, L.M., Rosen, L.D., Cheever, N.A., Lim, A.F., 2015. Causes, effects, and practicalities of everyday multitasking. Developmental Review, [e-journal] 35, pp. 64-78. https://doi.org/10.1016/j.dr.2014.12.005
7. Carter, S.P., Greenberg, K. and Walker, M.S., 2017. The impact of computer usage on academic performance: Evidence from a randomized trial at the United States Military Academy. Economics of Education Review, [e-journal] 56, pp. 118-132. https://doi.org/10.1016/j.econedurev.2016.12.005
8. Castillo-Manzano, J.I., Castro-Nuño, M., López-Valpuesta, L., Sanz-Díaz, M.T., Yñiguez, R., 2017. To take or not to take the laptop or tablet to classes, that is the question. Computers in Human Behavior, [e-journal] 68, pp. 326-333. https://doi.org/10.1016/j.chb.2016.11.017
9. Chen, L., Nath, R. and Tang, Z., 2020. Understanding the determinants of digital distraction: An automatic thinking behavior perspective. Computers in Human Behavior, [e-journal] 104, pp. 106195. https://doi.org/10.1016/j.chb.2019.106195
10. Chen, S.Y. and Tzeng, J.Y., 2010. College female and male heavy internet users' profiles of practices and their academic grades and psychosocial

ISSN Online: 3007-3154
ISSN Print: 3007-3146

adjustment. Cyberpsychology, Behavior, and Social Networking, [e-journal] 13(3), pp. 257- 262. https://doi.org/10.1089/cyber.2009.0023

11. Colliot, T., Kiewra, K.A., Luo, L., Flanigan, A.E., Lu, J., Kennedy, C., Black, S., 2022. The effects of graphic organizer completeness and note-taking medium on computer-based learning. Education and Information Technologies, [ejournal] 27(2), pp. 2435-2456. https://doi.org/10.1007/s10639-021-10693-y
12. Crumb, R.M., Hildebrandt, R. and Sutton, T.M., 2022. The value of handwritten notes: A failure to find state-dependent effects when using a laptop to take notes and complete a quiz. Teaching of Psychology, [e-journal] 49(1), pp. 7-13. https://doi.org/10.1177/0098628320979895
13. Flanigan, A.E. and Titsworth, S., 2020. The impact of digital distraction on lecture note taking and student learning. Instructional Science, [e-journal] 48(5), pp. 495-524. https://doi.org/10.1007/s11251-020-09517-2.
14. Hall, A.C.G., Lineweaver, T.T., Hogan, E.E., O'Brien, S.W., 2020. On or off task: The negative influence of laptops on neighboring students" learning depends on how they are used. Computers & Education, [e-journal] 153, pp. 103901. https://doi.org/10.1016/j.compedu.2020.103901
15. Kusumoto, Y., 2022. A cross-cultural investigation of L2 notetaking: student habits and perspectives. Journal of Multilingual and Multicultural Development, [e-journal] 0, pp.1-17. https://doi.org/10.1080/01434632.2022.2036168