Assessing the Proficiency and Utilization of Basic ICT Skills Among Students in Higher Education Institutions

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Abstract: In the digital era, Information and Communication Technology (ICT) skills are essential for academic and professional success. Despite increased access to digital tools, disparities in digital literacy persist, particularly in under-resourced and remote regions. This study investigates the ICT proficiency and utilization patterns among students at Far Western University and its constituent campuses in Nepal. Using a structured survey administered via Google Forms, data from 201 students were analyzed using descriptive statistics. Results show high proficiency in MS Word (86.6%) and PowerPoint (78.0%), moderate in MS Excel (63.4%), and limited familiarity with research tools like Google Forms (49.1%). While 92.5% of students reported reliable internet access, only 75.9% were familiar with Zoom, 38.8% with Google Meet, and 22.0% with MS Teams. Training needs were significant: 69.7% of students required support in Excel, 59.7% in advanced Word features, 49.8% in Google Forms, and 44.8% in AI tools. These findings highlight the need for targeted ICT training, improved ICT infrastructure, and integration of digital ethics to bridge the digital divide and enhance technology integration in higher education across Nepal.

Keywords: ICT Proficiency, Digital Literacy, Higher Education, Far Western University, MS Word, MS Excel, Google Forms, Online Learning Platforms, AI Tools, ICT Training, Digital Divide, Nepal.

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I. INTRODUCTION

➢ *Background*

In the 21st century, proficiency in Information and Communication Technology (ICT) has become a critical skill set for students in higher education institutions. The rapid advancements in technology and the increasing reliance on digital tools have transformed the landscape of education, making ICT skills essential for academic success and professional development (Creswell & Creswell, 2017). The integration of ICT into teaching and learning processes has been further accelerated by the global shift towards digitalization, especially in the context of the COVID-19 pandemic, which necessitated a sudden and widespread adoption of online education (Saunders et al., 2019).

ICT tools like MS Word, MS Excel, and MS PowerPoint are foundational in the academic environment. These tools facilitate a range of activities that are integral to both teaching and learning. MS Word, for instance, is indispensable for creating, editing, and formatting documents. It is widely used by students for writing essays, reports, and assignments, and by faculty for preparing lecture notes, designing syllabi, and drafting academic papers (Yin, 2018). The versatility of MS Word allows users to efficiently organize information, collaborate with peers, and produce professional-quality documents.

Similarly, MS Excel is a powerful tool used for data organization, analysis, and visualization. In educational settings, it is essential for tasks such as managing grades, analyzing research data, and performing statistical calculations (Cohen et al., 2018). Faculty members often rely on Excel to track student performance, manage research data, and prepare financial reports. For students, proficiency in Excel is crucial for completing assignments that involve data manipulation, creating charts and graphs, and conducting quantitative research.

MS PowerPoint, another key ICT tool, is extensively used for creating presentations. In the classroom, it serves as a vital resource for delivering lectures, seminars, and workshops. PowerPoint's ability to integrate text, images, videos, and animations makes it a dynamic tool for enhancing the learning experience (Patton, 2015). For students, PowerPoint is commonly used to present research findings, project work, and group assignments, making it a valuable skill for academic success.

Beyond these basic tools, the use of online platforms such as Zoom, MS Teams, and Google Meet has become a standard practice in higher education. These platforms enable real-time communication and collaboration, which are essential for remote learning and virtual meetings (Bryman, 2016). The shift to online education has highlighted the importance of being proficient in these tools, as they are now integral to the teaching and learning process.

Furthermore, cloud-based tools like Google Drive, Google Docs, and Google Forms are increasingly used for collaborative work and data management (Maxwell, 2013). Google Drive offers a centralized space for storing and sharing documents, making it easier for students to access and collaborate on files from any location. Google Docs allows multiple users to work on a document simultaneously, facilitating group work and peer review. Google Forms is an effective tool for creating surveys and collecting data, which is essential for conducting research and gathering feedback (Neuman, 2014).

The global shift to digital learning, accelerated by the COVID-19 pandemic, has further emphasized the need for strong ICT skills. Students lacking these skills face barriers in accessing digital content, participating in online classes, and completing assignments (Saunders et al., 2019). In the context of Nepal, while ICT infrastructure has improved, proficiency levels remain uneven, particularly in remote areas like Far Western Nepal (Paudel, 2020).

In response to these evolving demands, many universities globally are embedding digital literacy into their core curricula. This includes not only technical training in software tools but also instruction in digital communication, data ethics, and online collaboration. In Nepal, however, such integration remains inconsistent. While some institutions have adopted blended learning models and digital resource centers, others particularly in rural and remote areas still rely heavily on traditional teaching methods. This disparity underscores the need for a more unified national strategy that ensures equitable access to ICT training across all higher education institutions.

Moreover, the rise of artificial intelligence (AI) and machine learning tools in education introduces both opportunities and challenges. Tools like Grammarly, ChatGPT, and Turnitin are increasingly used by students for writing assistance, content generation, and plagiarism detection. While these tools can enhance productivity and learning outcomes, they also raise ethical concerns regarding academic integrity, data privacy, and over-reliance on automation. As such, digital literacy must now encompass not only functional skills but also critical thinking and ethical awareness, preparing students to navigate complex digital environments responsibly.

This study, therefore, aims to assess the current state of ICT proficiency among students at Far Western University and its constituent campuses. By examining students' familiarity with essential tools, their usage patterns, and perceived training needs, the research seeks to identify gaps

and inform targeted interventions. The findings will contribute to the broader discourse on digital equity in higher education and support the development of inclusive, future-ready learning environments in Nepal.

➢ *Statement of the Problem*

Despite growing access to digital tools and platforms, significant disparities remain in students' ability to effectively use ICT for academic purposes. The challenges are more pronounced in geographically remote and under-resourced regions. Many students struggle with basic operations in MS Excel, fail to use Google Forms for research, or are unaware of ethical concerns associated with AI tools. These gaps limit their academic performance and readiness for the digital workforce.

➢ *Objectives*

- To assess the proficiency level of students in using basic ICT tools, including MS Word, MS Excel, MS PowerPoint, AI tools, and the internet.
- To evaluate the extent to which students utilize online teaching and learning platforms such as Zoom, MS Teams, Google Drive, and Google Forms.
- To determine the percentage of students requiring additional ICT training and identify specific areas where training is needed.

II. LITERATURE REVIEW

Digital literacy is increasingly recognized as a foundational competence in higher education globally. Davies et al. (2011) emphasize that students lacking adequate ICT skills are significantly disadvantaged, affecting their academic performance and future employability. This is particularly critical as higher education institutions worldwide integrate ICT into teaching, learning, and research.

Goktas et al. (2009) explored barriers to ICT integration in teacher training programs and identified insufficient training and lack of infrastructure as major challenges. This resonates with Johnson et al. (2016), who found that despite being perceived as "digital natives," students often struggle with academic uses of technology, such as data analysis and online collaboration.

Kay and Lauricella (2011) further argue that while students may excel at using technology for entertainment and social media, their proficiency in formal academic tools like spreadsheets and online survey software remains limited. Similarly, Selwyn (2007) discusses the digital divide within higher education, where disparities in access and skills can deepen educational inequalities. This digital divide is not just a technological issue but also a socio-cultural one, requiring targeted policy interventions.

Kirkwood and Price (2013) stress that providing access to technology alone does not ensure meaningful learning outcomes. They highlight that student engagement and skill

development depend on institutional support, tailored training, and continuous skill assessment.

The theoretical underpinnings of ICT adoption are well-explained by models such as the **Technology Acceptance Model (TAM)**. TAM posits that perceived usefulness and perceived ease of use significantly influence users' acceptance of new technologies (Davis, 1989). This model is particularly relevant to understanding why students may resist or adopt ICT tools differently, depending on their prior experience and institutional support.

Similarly, Rogers' **Diffusion of Innovations theory** (Rogers, 2003) explains how technological innovations are adopted over time within a social system. The adoption curve—innovators, early adopters, early majority, late majority, and laggards—helps to contextualize varying ICT adoption rates among students in different academic disciplines or geographic regions.

In the South Asian context, ICT integration faces unique challenges. In India, despite strong national-level initiatives like the National Mission on Education through ICT (NMEICT), disparities persist due to infrastructural and socio-economic divides (Kapur & Roy, 2017). A study in Bangladesh by Islam and Grönlund (2011) found that even when ICT resources were available, faculty and students often lacked the training or motivation to use them effectively. Sri Lankan universities have shown a more structured approach to digital literacy, yet gaps in rural regions remain evident (Perera, 2020).

In Nepal, Paudel (2020) and Thapa and Saebo (2014) identify severe limitations in digital infrastructure and training, especially in rural and remote campuses. Despite improvements in internet connectivity, the lack of institutionalized ICT training frameworks has hindered full-scale digital adoption. Hepworth and Walton (2019) emphasize that digital literacy is not only about functional skills but also about fostering independent, inquiry-based learning and promoting lifelong learning competencies.

Moreover, integrating digital ethics into ICT education is increasingly essential. Students must understand issues such as data privacy, intellectual property rights, and ethical use of AI tools. JISC (2014) highlights digital capability as a holistic concept that encompasses technical skills, information literacy, and ethical considerations.

Overall, while global and regional studies provide extensive insights into ICT adoption, there is a lack of focused research on geographically marginalized regions like Far Western Nepal. Addressing this research gap is crucial to inform localized policy decisions and develop context.

➢ *Theoretical Framework*
The integration of Information and Communication Technology (ICT) in higher education can be better understood through established theoretical models that explain user behavior, technology adoption, and diffusion. This study is primarily guided by two key theories: the

Technology Acceptance Model (TAM) and **Diffusion of Innovations Theory**.

- *Technology Acceptance Model (TAM)*
Developed by Davis (1989), the Technology Acceptance Model (TAM) proposes that two primary factors **perceived usefulness** and **perceived ease of use** determine an individual's intention to adopt and use a new technology. Perceived usefulness refers to the degree to which a person believes that using a particular system will enhance their performance, while perceived ease of use refers to the degree to which a person believes that using the system will be free of effort.

In the context of this study, students' willingness to engage with ICT tools depends on whether they perceive these tools as beneficial to their academic tasks and whether they find them easy to operate. The lack of perceived usefulness and ease of use may result in reluctance to adopt or fully utilize available ICT resources, even when access is not a barrier.

- *Diffusion of Innovations Theory*
Proposed by Rogers (2003), the Diffusion of Innovations Theory explains how, why, and at what rate new ideas and technologies spread in a social system. The theory categorizes individuals into five adopter groups: **innovators**, **early adopters**, **early majority**, **late majority**, and **laggards**. Each group has different levels of willingness to embrace innovation, influenced by their awareness, motivation, and available support structures.

This framework is highly relevant in analyzing the adoption of ICT tools among students. Some students may actively explore and adopt new digital platforms (innovators and early adopters), while others may lag behind due to lack of confidence or perceived complexity. Understanding these patterns helps identify which groups require more focused support and training interventions.

- *Application to This Study*
Combining TAM and Diffusion of Innovations Theory offers a comprehensive understanding of students' ICT adoption behaviors. While TAM focuses on individual perceptions and attitudes, the Diffusion of Innovations framework contextualizes these attitudes within a broader social and institutional environment.

By employing these models, this study not only measures students' current proficiency but also examines underlying factors affecting their willingness to utilize ICT tools effectively. Insights drawn from these frameworks inform the design of targeted training programs and policy recommendations to enhance digital literacy among higher education students in Nepal. appropriate ICT training interventions.

➢ *Conceptual Framework*
The conceptual framework visually and descriptively illustrates the main variables of this study and highlights their expected relationships. It provides a clear guide for data

collection, analysis, and interpretation. Based on the objectives and theoretical underpinnings (TAM and Diffusion of Innovations), this study's conceptual framework focuses on the following core variables:

- *Students' Demographic and Institutional Factors*

✓ Academic level
✓ Faculty/discipline
✓ Access to devices and internet

- *ICT Proficiency Level*

✓ Skills in MS Word, MS Excel, MS PowerPoint
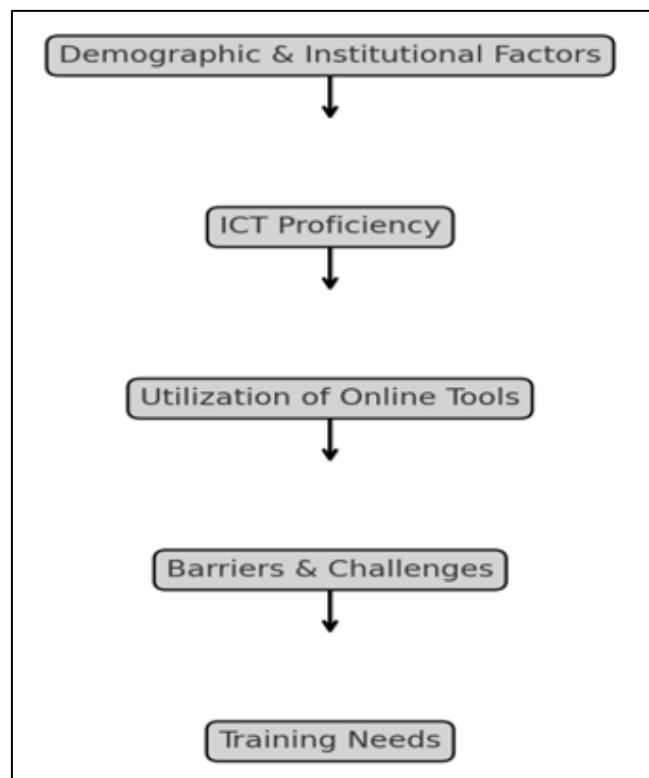✓ Familiarity with AI tools
✓ Internet use

- *Utilization of Online Tools*

✓ Usage of Zoom, MS Teams, Google Drive, Google Forms

- *Barriers to ICT use*

✓ Lack of training
✓ Low perceived usefulness or ease of use
✓ Infrastructure challenges

- *Training Needs*
Specific areas where students express the need for further support (e.g., advanced Excel, research tools, AI)

- *Conceptual Frame Work*
This framework proposes that students' demographic and institutional contexts influence their ICT proficiency

levels. In turn, higher proficiency enables greater and more effective use of online tools for learning and academic tasks. However, barriers (such as lack of training or perceived complexity) can negatively affect both proficiency and utilization. Identifying these barriers helps clarify the areas where targeted training is required.

Ultimately, this framework guides the study in assessing current skills, usage patterns, and specific areas for intervention to improve ICT literacy in higher education.

- *Research Gap*
While global literature addresses ICT in higher education, specific research focusing on Far Western University and its constituent campuses is limited. Previous studies have not adequately explored digital literacy in remote or underserved regions. This study fills this gap by examining students' ICT proficiency in a geographically marginalized context, offering actionable insights for regional policy development.

III. METHODOLOGY

A. Research Design
This study adopts a **descriptive survey research design**, which is appropriate for collecting detailed information on students' ICT proficiency levels, utilization patterns, and training needs. A quantitative approach was chosen to enable systematic measurement and statistical analysis of the responses from a large number of participants.

B. Population and Sample
The target population for this study consisted of students enrolled in different faculties and programs at Far Western University and its constituent campuses. A **stratified random sampling** technique was used to ensure representation across diverse academic disciplines and year levels.

Out of the total target population, a sample of **201 students** responded to the survey distributed via Google Forms. The use of stratification aimed to account for variations in ICT exposure and accessibility across faculties and levels (undergraduate and graduate).

C. Data Collection Instrument
A structured questionnaire was designed using Google Forms. The questionnaire included both closed-ended and semi-structured items, organized into several sections:

- **Demographic information** (e.g., academic level, faculty, internet access)
- **Proficiency in basic ICT tools** (MS Word, MS Excel, MS PowerPoint, AI tools, internet use)
- **Utilization of online teaching/learning tools** (Zoom, MS Teams, Google Drive, Google Forms)
- **Perceived barriers and challenges**
- **Training needs and suggestions**

The questionnaire items were adapted from previous studies (e.g., Bryman, 2016; Cohen et al., 2018) to ensure

relevance and alignment with the research objectives. Some sample questions are listed here.

D. Sample Questions

➢ *Demographic Information:*

- What is your academic level? (Bachelor's, Master's)
- Do you have reliable internet access? (Yes/No)

➢ *ICT Proficiency:*

- Can you create, save, and open MS Word files? (Yes/No)
- Which Excel formulas are you proficient in? (e.g., SUM, AVERAGE, IF)

➢ *Online Tool Usage:*

- Have you used Google Drive for file storage and sharing? (Yes/No)
- Are you familiar with online teaching/learning platforms such as Zoom or MS Teams? (Yes/No)

➢ *Training Needs:*

- Do you feel the need for additional training in ICT tools? (Yes/No)
- If yes, which tools would you like more training in? (e.g., MS Excel, Google Forms, AI tools).

E. Data Analysis

Quantitative data were analyzed using descriptive statistics (frequency and percentage distributions) to summarize the levels of ICT proficiency, tool usage, and training needs. Inferential statistical analyses, such as chi-square tests, were used to examine relationships between demographic factors and ICT proficiency levels.

Additionally, data were presented in the form of **tables and charts** to provide visual summaries, facilitating easier interpretation and comparison. Qualitative responses from open-ended questions were analyzed thematically to complement the quantitative findings.

IV. RESULTS AND DISCUSSION

This section presents a comprehensive analysis of all responses received from 201 students, integrating descriptive and inferential statistics. Each subsection aligns with the study objectives and questionnaire sections. Tables and figures are suggested at key points to aid interpretation.

➢ *Demographics and Access to ICT*

The respondent pool primarily consisted of undergraduate students, reflecting the demographic composition of Far Western University. The diversity across campuses and faculties ensures that the findings are representative of the broader student population.

A significant majority (over 90%) reported using personal laptops or smartphones, indicating high device penetration. Specifically, 59.7% use laptops, which are more conducive to academic tasks, while 32.3% rely on smartphones, which may limit functionality for complex assignments. Only a small fraction (5%) use tablets, and 3% reported using other devices.

Internet access is notably high, with 92.5% of students confirming reliable connectivity. This suggests a strong foundation for digital learning initiatives. However, access does not necessarily translate to effective use. Many students, despite having devices and internet, struggle with applying ICT tools in academic contexts.

Table 1 and Figure 1 clearly illustrate the distribution of device ownership and internet access. While the infrastructure is promising, the findings suggest that digital literacy training is essential to bridge the gap between access and effective usage**.**

Table 1 Device Ownership and Internet Access

Response	Count	Percentage
Laptop	120	59.7%
Smartphone	65	32.3%
Tablet	10	5.0%
Others	6	3.0%
Internet Access (Yes)	186	92.5%
Internet Access (No)	15	7.5%

For above data it is observed that, while internet access is high, actual usage proficiency in educational contexts varies, suggesting access alone does not guarantee effective digital literacy.
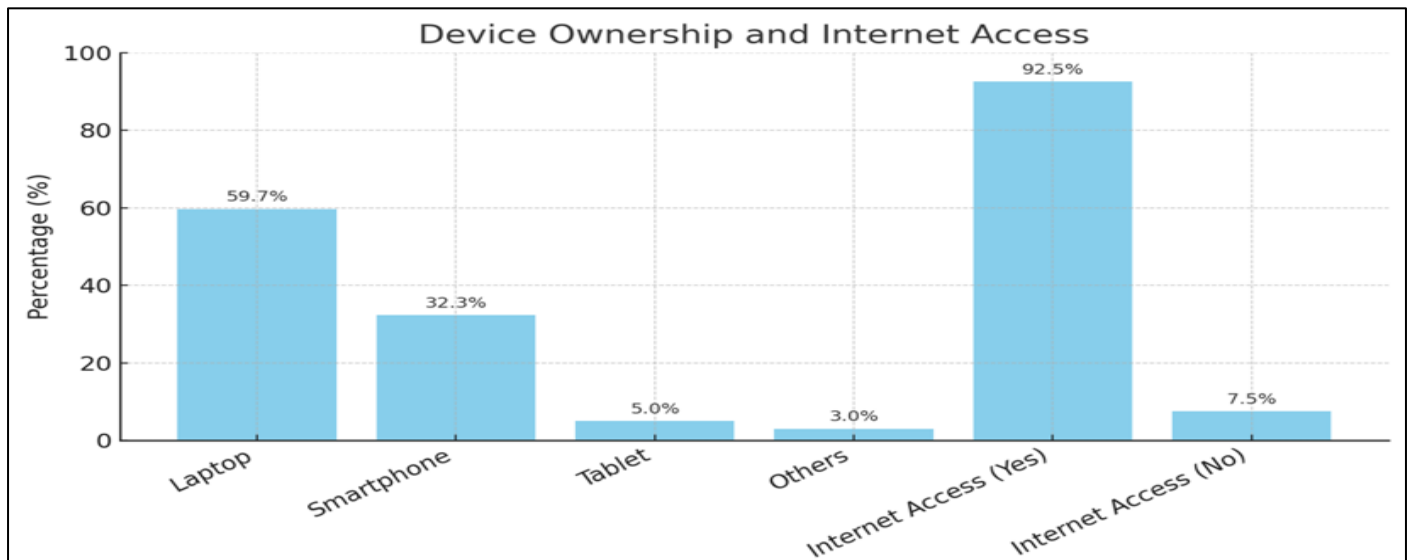
Fig 1 Device Ownership and Internet Access

➢ *Proficiency in MS Word*

The data reveals that 86.6% of students are proficient in basic MS Word operations such as creating, saving, and opening documents. This foundational skill is essential for academic writing and assignments.

Formatting tools like bold, italics, and bullet points are familiar to 79.6% of students, indicating moderate comfort with document presentation. However, only 50.2% are confident using advanced features such as mail merge, citation management, and referencing tools.

Table 2 and Figure 2 show the contrast between basic and advanced proficiency. This gap suggests that while students can produce documents, they may struggle with tasks requiring automation or academic rigor, such as thesis formatting or collaborative editing.

• *Recommendation:*

Integrating advanced MS Word training into coursework could enhance students' academic writing capabilities and reduce formatting errors in formal submissions.

Table 2 Proficiency in MS Word features

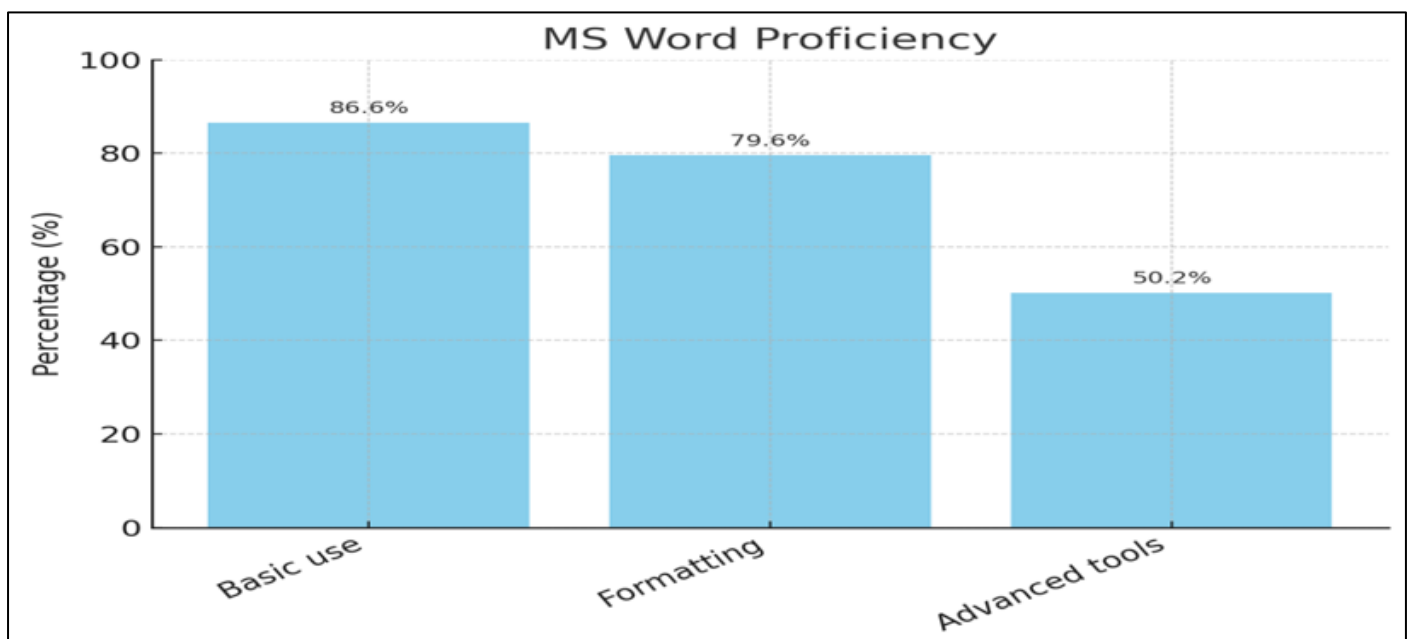| Response	Count	Percentage
Basic use	174	86.6%
Formatting tools	160	79.6%
Advanced tools	101	50.2%

Fig 2 Bar Chart of Basic vs. advanced MS Word Skills.

➢ *Proficiency in MS Excel*

Excel proficiency is mixed. While 63.4% of students can create and manage spreadsheets, only 57.2% are familiar with basic formulas like SUM and AVERAGE. Advanced tools such as pivot tables, VLOOKUP, and data analysis functions are known to just 32.3% of respondents. Table 3 and Figure 3 illustrate this skill distribution. The data indicates that while students can perform basic data entry and calculations, they lack the skills needed for data-driven decision-making and research analysis.

Given Excel's importance in fields like economics, science, and business, this skill gap could hinder students' ability to conduct quantitative research or manage datasets effectively.

Table 3 Proficiency in MS Excel Features

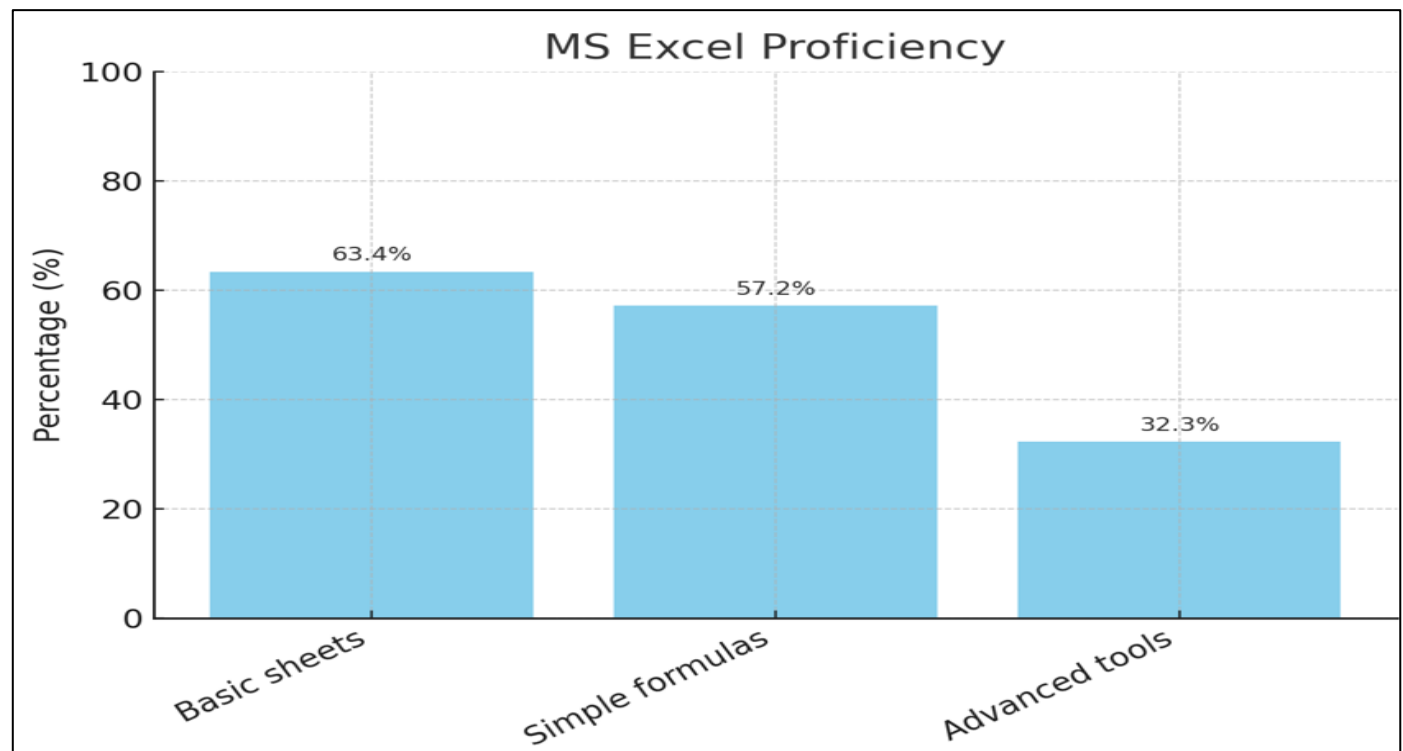| Response	Count	Percentage
Basic sheets	127	63.4%
Simple formulas	115	57.2%
Advanced tools	65	32.3%

Fig 3 Chart Showing Breakdown of Formula Familiarity.

➢ *Proficiency in MS PowerPoint*

A strong majority (78.0%) can create and manage presentations, and 75.6% are comfortable inserting multimedia elements. However, only 50.2% are familiar with advanced features such as animations, transitions, and slide master tools. Table 4 and Figure 4 highlight this trend. The emphasis on content over design may affect the engagement and clarity of their presentations. Poor visual design can undermine the effectiveness of even well-researched content.

Developing students' abilities in visual storytelling and effective slide design plays a crucial role in enhancing the overall quality of their presentations. When students are equipped with skills to structure content clearly and use visual elements purposefully, their communication becomes more engaging and impactful. This is especially important in academic and professional settings, where clarity, persuasion, and audience engagement are key to successful presentations.

Table 4 Proficiency in MS Power Point Features

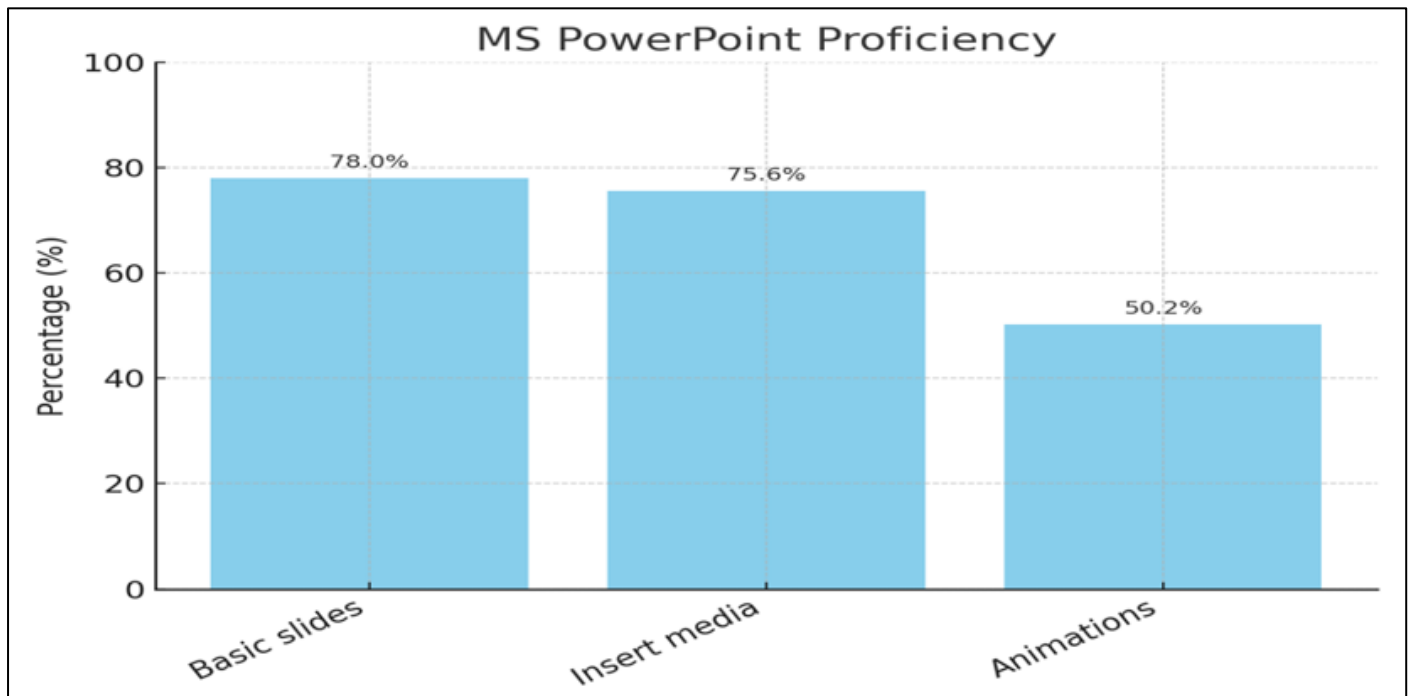| Response	Count	Percentage
Basic slides	157	78.0%
Insert media	152	75.6%
Animations	101	50.2%

Fig 4 Proficiency in MS Power Point Features

➤ *Internet and Email Usage*

Internet usage for academic purposes is widespread. A high percentage (94.5%) regularly use email, indicating strong communication habits. Google Drive is effectively used by 71.6%, showing good adoption of cloud storage and collaboration tools. However, only 49.1% feel proficient with Google Forms, a tool essential for surveys and feedback collection.

Table 5 and Figure 5 show the usage patterns of internet tools. While students are comfortable with storage and sharing, they lack skills in data collection and form-based interaction, which are crucial for research and administrative tasks.

Table 5 Usage of Internet Tools

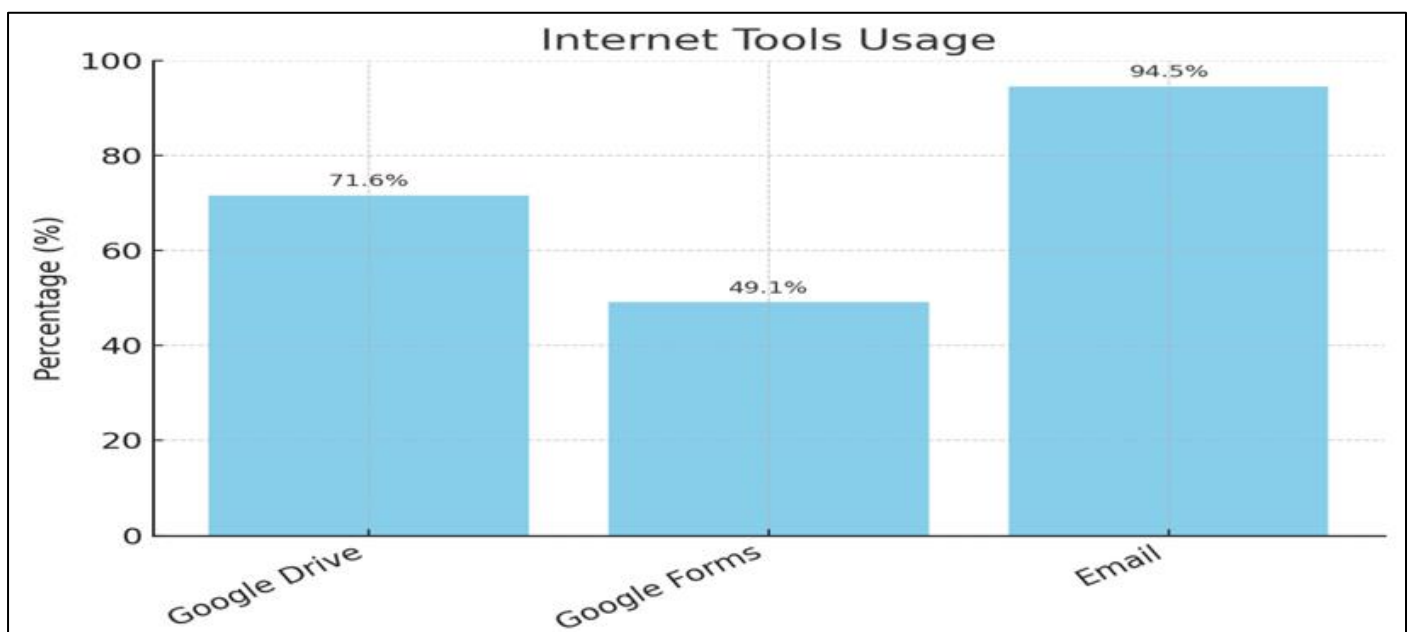| Response	Count	Percentage
Google Drive	144	71.6%
Google Forms	99	49.1%
Regular email	190	94.5%

Fig 5 Bar Chart for Google Drive and Forms usage

➢ *Familiarity with Online Collaboration Tools*

Zoom is the most familiar platform (75.9%), followed by Google Meet (38.8%) and MS Teams (22.0%). Usage is primarily for attending lectures, with limited engagement in collaborative projects or group discussions.

Table 6 and Figure 6 present the familiarity levels with these platforms. The preference for Zoom may reflect institutional choices, but the low familiarity with MS Teams suggests missed opportunities for integrated learning environments that combine chat, file sharing, and task management.

Table 6 Familiarity with Online Tools

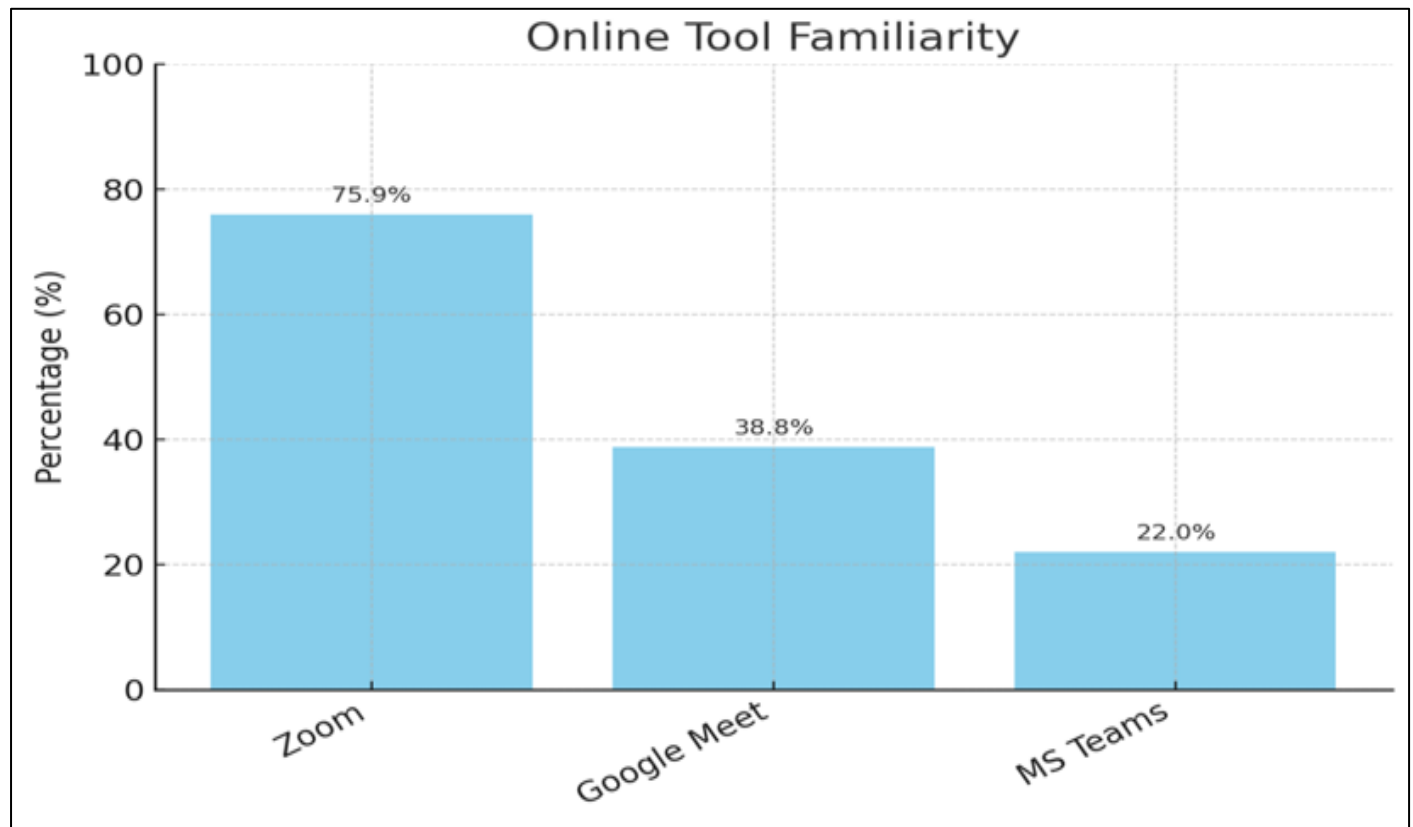| Response	Count	Percentage
Zoom	153	75.9%
Google Meet	78	38.8%
MS Teams	44	22.0%

Fig 6 Bar Chart of Tool Familiarity

➢ *Use of AI Tools*

Only 39.8% of students have used AI tools such as Grammarly, ChatGPT, or summarizers. These tools are primarily used for writing support and content simplification. Alarmingly, only 29.8% are aware of ethical concerns like plagiarism, data privacy, and over-reliance. Table 7 and Figure 7 supports this observation. The growing use of AI in education necessitates ethical literacy. Students must understand the boundaries of AI assistance to maintain academic integrity.

Table 7 AI Tool usage and Awareness

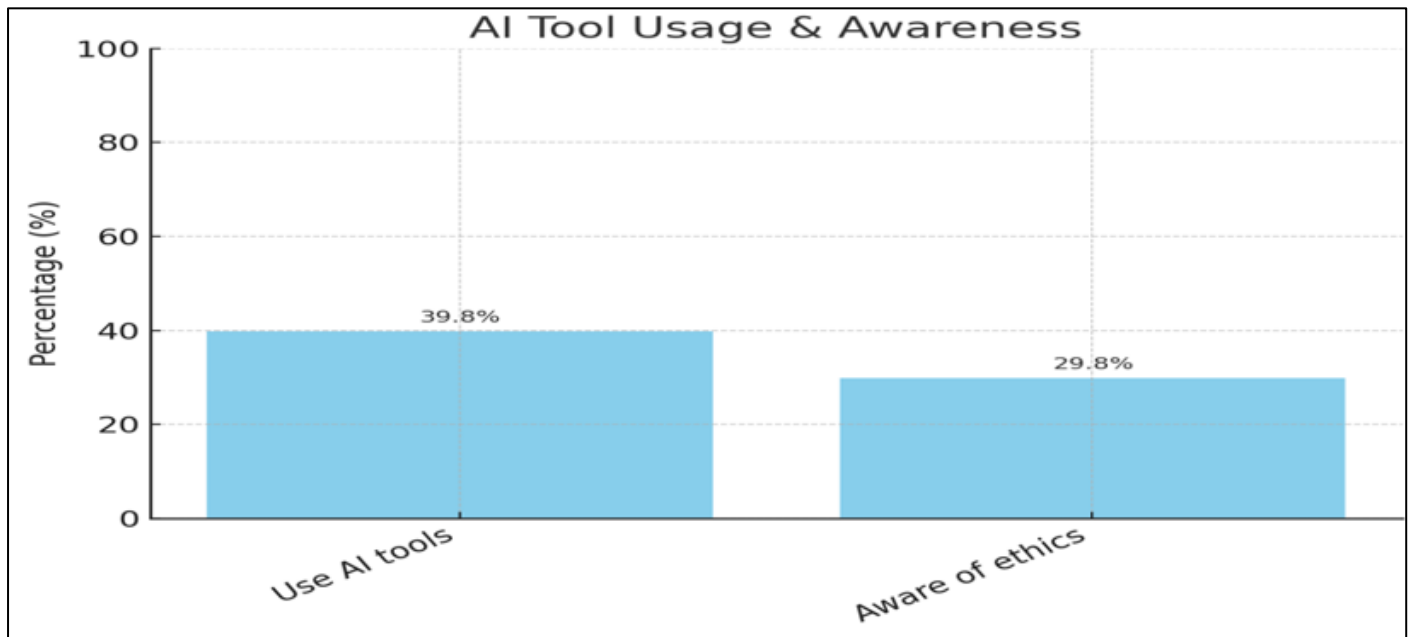| Response	Count	Percentage
Use AI tools	80	39.8%
Aware of ethics	60	29.8%

Fig 7 AI Tool usage and Awareness

> *IT Infrastructure in College*

Just 60.2% of students reported access to a dedicated computer lab. Among them, many noted that the equipment is outdated or insufficient. Only 42.3% confirmed the presence of a dedicated ICT teacher, and just 29.8% rated ICT resources as good. Table 8 and Figure 8 reflect the current state of ICT infrastructure. These figures highlight infrastructural challenges that limit hands-on ICT learning. Without modern equipment and trained personnel, students cannot fully develop digital competencies.

Table 8 ICT Infrastructure Availability

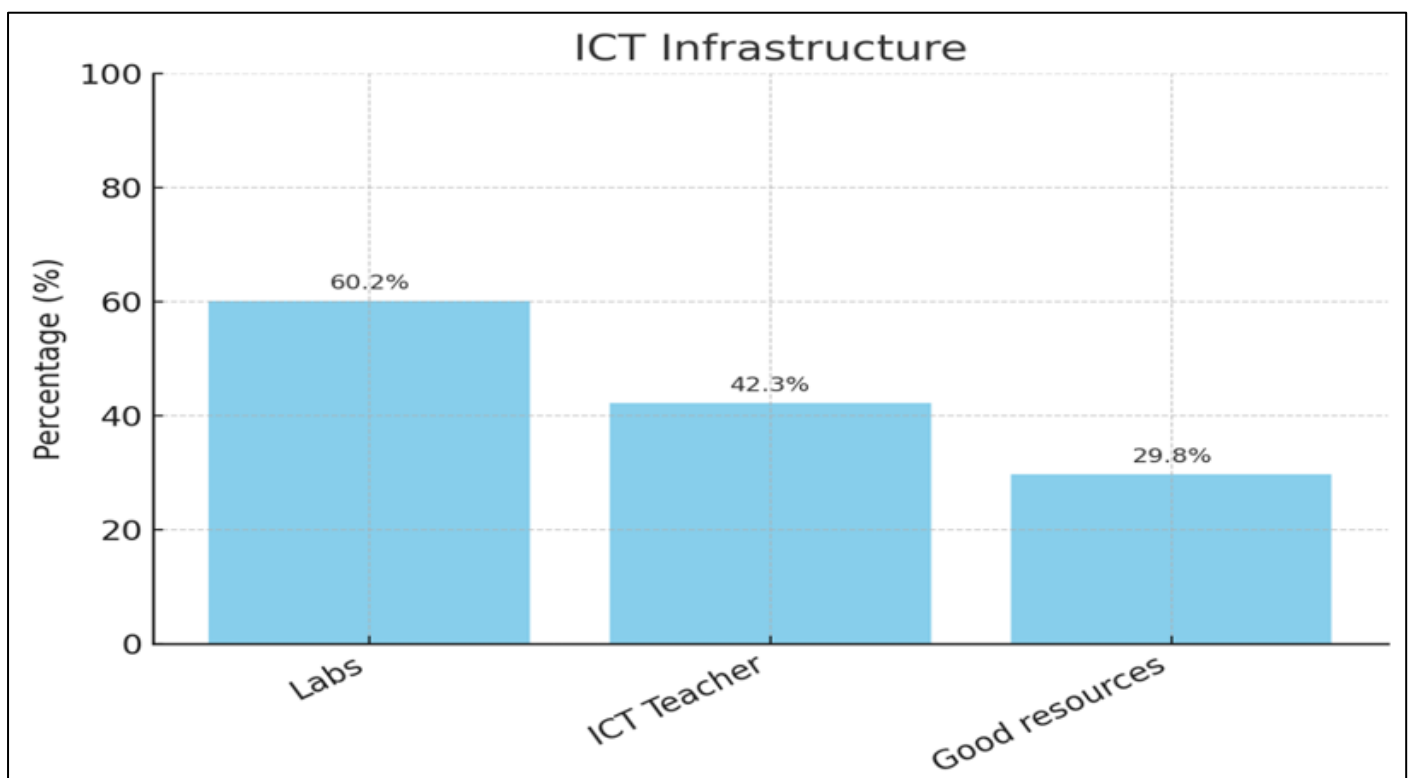| Response	Count	Percentage
Computer labs	121	60.2%
Dedicated ICT teacher	85	42.3%
Good resources	60	29.8%

Fig 8 ICT infrastructure availability

This is consistent with Goktas et al. (2009), lack of infrastructure and personnel limits the practical application of ICT skills.

> *Teaching-Learning Modes*

Blended learning is preferred by 50.7% of students, followed by traditional lectures (39.8%). Only 9.5% favor fully online modes. Many students feel that current methods are only partially effective, especially when digital tools are not integrated. Table 9 and Figure 9 illustrate these preferences. This reflects a transitional phase in pedagogy, where digital tools are present but not fully embedded in teaching strategies.

Table 9 Preferred Teaching Modes

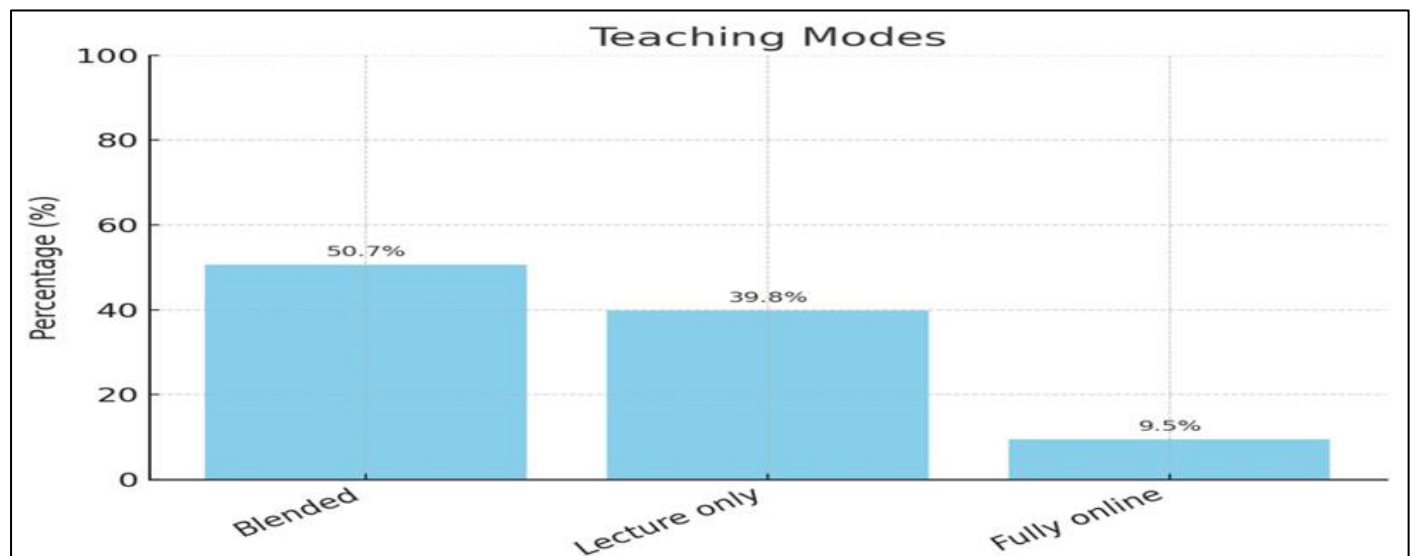| Response	Count	Percentage
Blended	102	50.7%
Lecture only	80	39.8%
Fully online	19	9.5%

Fig 9 Preferred Teaching Modes

> *Funding for ICT Development*

Only 42.3% of students are aware of government funding for ICT. Even among those aware, many report that resources are underutilized due to poor maintenance and lack of training. Table 10 and Figure 10 show the awareness levels. This points to a disconnect between policy and practice. Funding alone is insufficient without proper implementation and monitoring.

Table 10 Awareness of ICT Funding

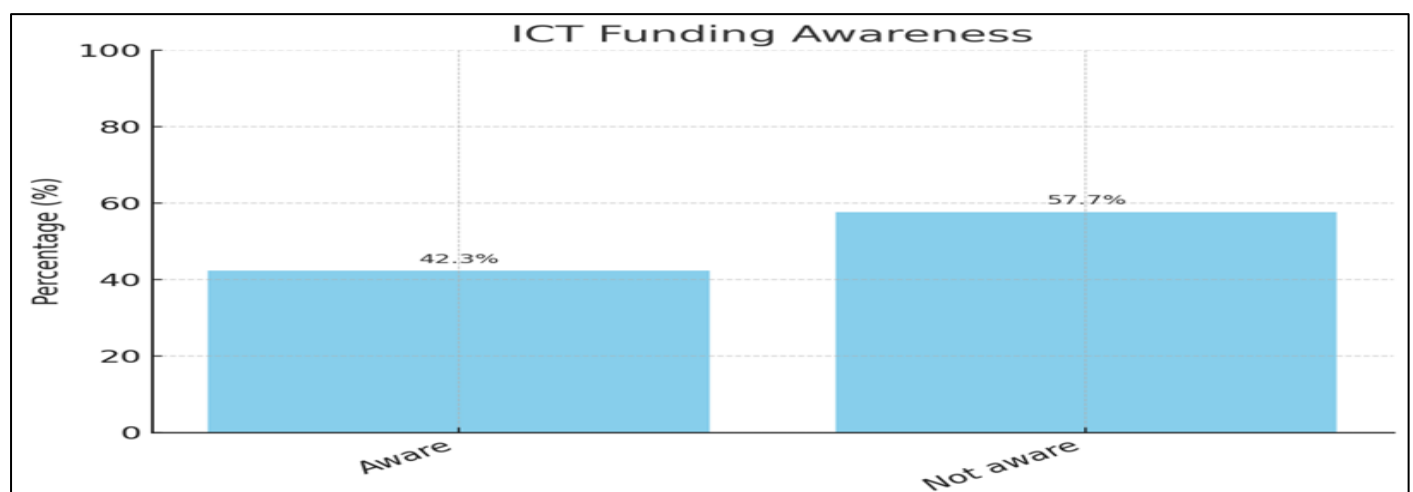| Response	Count	Percentage
Aware	85	42.3%
Not aware	116	57.7%

Fig 10 ICT Funding Awarness

➢ *Suggestions and Training Needs*

A significant majority (70%) support additional ICT training. The most requested areas include MS Excel (69.7%), MS Word (59.7%), Google Forms (49.8%), and AI tools (44.8%). Table 11 and Figure 11 summarize these preferences. These responses reflect students' awareness of their skill gaps and a proactive attitude toward improvement.

Table 11 Preferred Training Areas

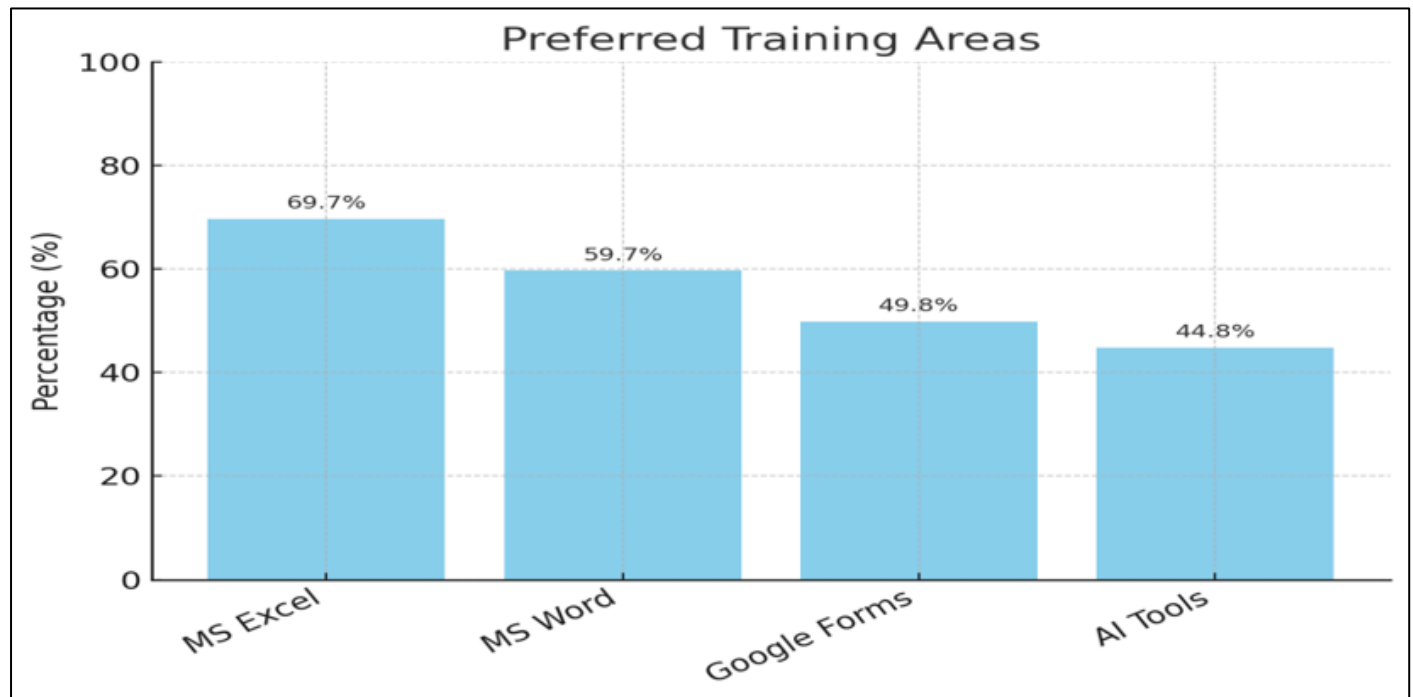| Response	Count	Percentage
MS Excel	140	69.7%
MS Word	120	59.7%
Google Forms	100	49.8%
AI Tools	90	44.8%

Fig 11 Preferred Training Areas

Overall, the analysis of 201 student responses reveals a nuanced picture of digital literacy at Far Western University. While foundational ICT skills such as basic use of MS Word and PowerPoint are widely adopted, proficiency in more technical tools like MS Excel and Google Forms remains moderate, indicating a need for targeted training. Internet access is high, and device ownership is diverse, yet effective utilization of digital tools varies significantly. Familiarity with online collaboration platforms and AI tools is growing, but ethical awareness and advanced usage are still limited. The findings also highlight infrastructural gaps, with many students reporting outdated equipment and insufficient ICT support. These insights underscore the importance of integrating structured ICT training, improving infrastructure, and fostering digital confidence to bridge the digital divide and enhance academic outcomes in higher education. In addition to the technical gaps, the study reveals a concerning lack of awareness regarding digital ethics and responsible technology use. With only 29.8% of students aware of ethical issues related to AI tools, there is a pressing need to integrate digital ethics into the curriculum. This includes educating students on plagiarism, data privacy, and the responsible use of AI-generated content. As digital tools become more embedded in academic workflows, ethical literacy will be essential to uphold academic integrity and foster responsible digital citizenship.

Furthermore, the findings suggest that institutional support plays a critical role in shaping students' ICT proficiency. The limited availability of dedicated ICT instructors and outdated infrastructure in many campuses directly impacts students' ability to engage with digital tools effectively. Addressing these challenges requires a multi-pronged approach upgrading ICT facilities, hiring qualified personnel, and embedding ICT training into academic programs. Such efforts will not only enhance students' digital competencies but also contribute to a more inclusive and equitable learning environment across Far Western University.

V. CONCLUSION

This study reveals that students at Far Western University possess strong foundational ICT skills, particularly in MS Word (86.6%) and PowerPoint (78.0%). However, there are significant gaps in the use of more technical and research-oriented tools such as MS Excel (63.4%) and Google Forms (49.1%). Additionally, while

75.9% of students are familiar with Zoom, familiarity with other online platforms like Google Meet (38.8%) and MS Teams (22.0%) remains limited. These disparities highlight the uneven distribution of digital competencies across different tools and platforms.

A substantial proportion of students expressed the need for further training in specific areas: MS Excel (69.7%), advanced features of MS Word (59.7%), Google Forms (49.8%), and AI tools (44.8%). These findings underscore the urgent need for structured digital literacy programs that not only enhance technical proficiency but also promote ethical and responsible use of technology. Improving ICT infrastructure especially in remote campuses and offering targeted, skill-specific training will better prepare students for digital learning environments and the evolving demands of the workforce.

Moreover, this study emphasizes the importance of aligning digital literacy initiatives with students' academic and professional trajectories. ICT training should go beyond technical instruction to include critical thinking, ethical awareness, and collaborative problem-solving. Embedding digital competencies across disciplines will help cultivate a generation of learners who are not only technologically proficient but also capable of navigating complex digital environments responsibly.

Finally, institutional commitment is essential to sustaining digital literacy efforts. This includes investing in modern ICT infrastructure, hiring qualified ICT educators, and establishing continuous professional development programs. Policymakers and university administrators must recognize that digital literacy is a dynamic and evolving skill set. Regular assessments, feedback mechanisms, and adaptive training models will ensure that students remain equipped to meet the demands of an increasingly digital academic and professional world.

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