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E-learning Tools and Methodology adopted by Students: A Case Study of Sukuna Multiple Campus

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Abstract

The traditional method of classroom-based learning has experienced significant change towards technology-based approaches. In the current study, digital learning strategies and technologies used by the undergraduate students of Sukuna Multiple Campus in Nepal have been explored. Using quantitative survey design, a total of 100 participants were randomly sampled across different majors within the institution. Results have revealed a higher inclination for hybrid learning strategies that include synchronous and asynchronous approaches (74%). In the specific digital learning strategies, LMS-based instructions (mean = 3.76) and collaborative learning (mean = 3.42) were the most used, whereas gamification strategy was the least preferred one. In terms of infrastructure, Google Classroom was found as the predominant LMS (98%), Zoom was the most prevalent one in video conferencing (84%), and Facebook Messenger was the most popular tool for collaborative academic discussions (76%). Further, YouTube (91%) has become the most prevalent tool for academic video content, and ChatGPT (97%) had attained universal adoption among the students using AI technologies for their academic

needs. More than half of the respondents (86%) have clearly expressed preference for free and open-source tools over paid ones due to budgetary constraints.

Keywords: E-learning, community campus, Methodology, digital learning tools

Introduction

The Integration of technology into the education system has changed the traditional educational practice throughout the world. Nowadays electronics media and internet platform are used to delivered the educational content to learners. This method of learning is referred by technology-enhanced learning (Wheeler, 2012), distance learning (Wheeler, 2012), digital learning (Basak et al., 2018), mobile learning (Basak et al., 2018), internet learning, networked learning (Alfiriani et al., 2021), tele-learning, distributed learning, virtual learning, and computer-assisted learning. E-learning uses electronic or digital technologies with the support of internet connections, and encompasses learning experiences that use different varieties of online education, such as online courses, virtual classrooms, digital educational materials, and interactive learning platform (Wheeler, 2012). E-learning is now integral part for delivering education and training due to its ability to meet modern demand of accessibility, flexibility, and efficiency. While developed countries have made significant progress towards implementing online learning models, the reality on the ground at Nepal's Sukuna Multiple Campus looks quite different. Community and public campuses throughout Nepal are experiencing problems with implementing e-learning in part due to deficiency in digital infrastructure, ICT literacy, and resources (Giri, 2021).

In context of Nepal, COVID-19 pandemic made educators and students adopt e-learning, forcing the traditional classroom teaching and learning to digital platform. Globally, after the spread of COVID-19 pandemic, the educational system was disrupted worldwide, with more than 1.5 billion students and learners affected by educational institutions closure (UNESCO, 2020). To overcome the crisis, many

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countries in the world promoted e-learning to deliver the education (Aslam & Sonkar, 2021). Therefore, different tools and techniques for e-learning ensured the continuity of learning and were promoted through immediate interaction and collaboration. During this difficult time, educational platforms rapidly shifted from offline to online classrooms. Ultimately, COVID-19 pandemic accelerated the adaptation of online learning making it dominant trend in education worldwide (Chatterjee & Chakraborty, 2020). The countries that were far behind in the implementation of e-learning started implemation in education sector. Educational institutions and the Ministry of Education responded by adopting platforms like Zoom and Google Classroom and broadcasting lessons via TV and radio (UNICEF Nepal, 2020).

Students on public campuses today are depending more and more on digital resources for their education due to the easy access to the internet and the affordable pricing of smartphones. Though students on public campuses frequently encounter difficulties like irregular internet access, lack of institutional support, and inadequate digital literacy (Giri, 2021). So, due to problem with infrastructure in campus students still rely on the free or paid e-learning platform for taking the education. Tools like YouTube, Moodle, Google Classroom and mobile applications are used by students for educational purposes (Pangeni, 2016). This growing use of digital tools reflects a shift in learning culture, where students take ownership of their learning experience even in the absence of fully developed institutional systems (Sapkota, 2020).

While a lot of research has been done on e-learning in context of developed countries but very little local research has been done on how students in Sukuna Multiple Campus are using e-learning tools and techniques. By investigating the methodology and tools that students are habituated with, educators can understand their learning preferences, identify existing gap in delivering the content and design an instructional strategy that align with their existing practices for deeper engagement and

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growth. This study aims to close that gap finding the methodologies and tools student are currently using, how they are using them, and the difficulties they encounter.

By concentrating on the real-world experiences of students on public campuses, this study will produce information that can guide future training initiatives, policy decisions, and investments in digital infrastructure, guaranteeing that e-learning develops into a useful and inclusive component of Nepal's educational system. Additionally, the results will assist educational institutions in determining which methodologies are working and which need further support, ultimately contributing to a more efficient and effective digital learning environment in Nepal.

Previous studies have mainly concentrated on infrastructural problems such as lack of infrastructure, poor internet access, and lack of institutional effort. Research is needed on how students in public campuses, contrary to these caveats, are autonomously adopting, modifying, and using e-learning tools. Without it, educators and administrators will not have the kind of evidence that could inform decisions regarding the establishment of support systems, modes of instructional delivery, or training programs—a complementing factor to what students actually do. Such a gap becomes extremely significant in an era in which digital learning has become one of the essential areas of higher education. The specific objectives of this study are as follows:

- i. To identify e-learning methodologies adopted by the students of Sukuna Multiple Campus.
- ii. To identify different types of e-learning tools and software adopted by the students of Sukuna Multiple Campus.

The research question of the study is as follows:

- i. What are the different types of e-learning methodologies adopted by the students of Sukuna Multiple Campus?
- ii. What are the most commonly used e-learning tools across different categories?

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The results of this study will yield practical, evidence-based and data-driven insights for policymakers, educators, and administrators who wish to improve the integration of e-learning in Nepal's public higher education sector. By aligning institutional strategies and actions with the preferences of students, public campuses will increase access to education, engagement in courses, and ultimately learning outcomes for students.

This section presents a review of various theoretical literature relevant to the study.

E-Learning Methodologies

E-learning has become an important way of education delivery, providing number of approaches to enhance teaching and learning. By providing flexible learning methodologies, mainly through synchronous and asynchronous approaches, e-learning has revolutionized education. According to Food and Agriculture Organization (FAO, 2021) there exist two approaches of e-learning i.e. synchronous and asynchronous. Asynchronous is characterized by learning that can be studied at any time, learners can access materials or communicate through emails, discussion boards, and wikis. Conversely, synchronous communication refers to learning interactions conducted in real time, with all participating learners and instructors present at the same scheduled moment and can occur when live sessions are scheduled. Examples of synchronous communication include audio and video conferencing, live lectures, webinars and virtual classroom. Several communication tools are available that can be used by facilitators, instructors, and learners to collaborate. Oye et al. (2012) recommended three different methodology asynchronous, asynchronous and blended mode and suggests the blended which is the combination of synchronous and asynchronous mode as best methodology for anytime and anywhere learning. The learning environment are usually asynchronous with discussion, assessment and assignments and controlled through synchronous tools.

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Learning management systems (LMS) combine synchronous and asynchronous tools within one platform and are essential for the successful execution of flexible and blended e-learning settings. According to Furqon et al (2023) LMS can be classified as commercial and open source and based on access platforms as web-based and application-based. LMS provides a wide range of features, including content management, assessment tools, discussion boards, and student tracking, facilitating e-learning experiences. The LMS having features to store educational materials, communication and feedback systems promotes learner independence. The claim that integrating both learning modalities promotes greater accessibility and engagement is supported by this support structure. Examining this role, it's clear LMSs are essential to any modern e-learning ecosystem since they are not only delivery tools but also strategic facilitators of pedagogical innovation.

Adopting the flipped classroom approach as a novel method in online education promotes active learning and fosters a learner-centered environment. Santos & Serpa (2020) studied the flipped classroom model, which rebuild the primitive teaching sequence. It initiates with autonomous student work and culminating in the application of knowledge with proper teacher guidance. Focusing on active learning, this method enables students to participate directly in the creation of knowledge. It aids in gaining subject expertise and transferable skills that are essential for coping with problem of the 21st century. According to Bergmann & Sams (2023) under the flipped classroom model, activities, discussions, and problem-solving take place in class while students are exposed to material at home through readings and videos. Flipped classes use a variety of tools, such as online discussion boards, interactive simulations, and video lectures and promotes the creation of dynamic and attractive learning environments.

Collaborative e-learning is a methodology that fosters critical 21st-century skills like communication, collaboration, and critical thinking by fusing the ideas of

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collaborative learning with digital technology. According to Sthal et al. (2014) through online platforms, collaborative e-learning enables students to collaborate while they are in different locations. Regardless of where they are physically located, it uses digital tools to help students interact, cooperate, and work together intellectually. Learning outcomes may be improved by encouraging critical thinking, active participation, and the exchange of different viewpoints. Given this, I believe that collaborative e-learning enhances learning outcomes while simultaneously developing the social and cognitive abilities required for students to thrive in a world that is becoming more digitally dependent and interconnected.

AI-powered e-learning technologies are changing the way we learn by making it more personalized and interactive. AI-powered e-learning tools, such as ChatGPT allows conversation in real-time, instant feedback and solve complex concepts. According to Khaldi et al. (2023) AI improves the educational experience by incorporating features such as automatic grading, feedback mechanisms, text-to-speech, speech-to-text, and advanced search capabilities, greatly enhancing accessibility and the overall learning journey. Reflecting on this, addition of AI into e-learning not only enhance efficiency but also transforms the educational process making it more student centered, insight based, and accessible to border population of learners.

Microlearning is a highly effective e-learning methodology that uses small content, focused segments that help learners to retain information more efficiently. According to Giurgiu (2017) microlearning breaks complex topics into small-sized, manageable content, which supports better understanding and longtime memorizing. Microlearning blended with asynchronous learning allows student to access and revisit the content time and again from their own place (FAO, 2021). Similarly, microlearning can be integrated with the LMS and promotes the personalized learning tracking and customizing modules based on the learner performance (2023). Microlearning is

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trending due to the learning methodology that responds effectively to the evolving to complement the needs of modern learners that aids being focused, engaging and flexible educational experiences.

E-Learning Tools and Software

Oye et al. (2012) highlighted curriculum tools, digital library tools and knowledge representation tools as major e-learning tools. Curriculum tools encompass instructional resources including curriculum design framework and online quizzes with automated grading features. Administration tools focus on function like file management authentication, and authorization. And lastly the student tools include browsing class material tools, collaboration and sharing tools, learning progress scheduling and tracking tools, self-testing and evaluating and WebCT and Blackboard tools. Digital library tools provide the platform to find the right information from large amount of digital content. Similarly, knowledge representation tools visually review, capture, or develop knowledge.

E-learning is supported by researchers, and the COVID-19 pandemic sparked a trend toward e-learning combined with traditional methods. Ali et al. (2023) carried out experimental research to determine the effects of blended learning and e-learning. Similar to this, studies on e-learning platforms and tools propose various kinds according to classification.

Dearmer (2023) classified e-learning tools into six types: authoring tools, video conferencing tools, LMS, assessment tools, interactive tools and content libraries. Teachers can create structured course materials using authoring tools, multimedia, and templates, and synchronous interaction through live lectures and discussions is supported by video conferencing tools. LMS platforms are essential to digital education because they deliver content, track progress, and host assessments, all of which manage the entire learning process. Assessment tools offer tests, quizzes, and automated

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grading, which decrease the workload for instructors and provides instant feedback. Content libraries act as stores of reusable and flexible educational resources, and interactive tools like gamification and simulations increase learner motivation. When taken as a whole, these categories show that meaningful use of tools is just as important to successful digital learning as their accessibility.

According to Leporini et al. (2023) video conferencing tools aids multiple people from various physical locations, to connect and work together virtually. They help in sharing text, audio, video and presentations over the internet in real time. Some of the most popular video conferencing tools used for e-learning are Zoom, Google Meet, and MS Teams

Social media provides an accessible means of obtaining information with minimal commands. E-learning has been propelled on a trajectory through the use of social media platforms that serve educational and professional learning in better ways. Social media tools such as Twitter, YouTube, Facebook, LinkedIn and WhatsApp, have been tools frequently used by students (Ahamad et al., 2023).

The achievement of AI based solution in teaching learning like chatgpt is clearly a sign for to adopt. AI powered eLearning have created engaging and personalized learning experiences. According to Arora (2014) AI tools are applications that use AI algorithms to carry out a particular task and solve problems. Some popular AI tools are ChatGPT, DALL-E, Midjourney, Sythesia, Copilot, Fliki AI, Alli AI. The features of AI based products such as automatic grading and feedback system, text to speech and speech to text which have supplanted conventional models, have improved accessibility, and offered smarter search capabilities (Philip, 2023).

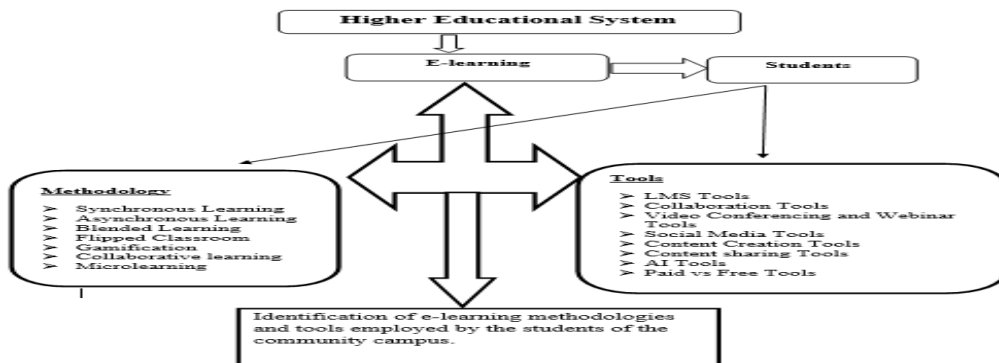
Governmental Plan and Policy Of E-Learning

According to Nepal's IT policy (Nepal Government, 2016), the fusion of ICT into the education system is a strategy to improve pedagogy and thereby improve

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Research Gap

While the global literature on e-learning is extensive, there is limited empirical research on how students in Sukuna Multiple Campus independently adopt and adapt to e-learning methodologies and tools. This study provides a localized perspective, examining actual usage patterns and preferences in a resource-limited academic environment. The conceptual framework of this article is



Methods and Materials

The study is based on quantitative survey design to examine the e-learning methodology and tools adopted by students of Sukuna Multiple Campus. The target population was all the Bachelor student of Sukuna Multiple campus from educational program Business Administration, Information Communication Technology in Education (BICTE) and Business Studies. A sample of 100 students were selected randomly from different faculty.

A structured, close-ended questionnaire was designed based on literature review, research findings and study objectives to collect the data form the respondent. The structured and close-ended questionnaire was put into an online form with the help of Google Forms and then distributed to students via student communication platforms, including social media pages dedicated to particular courses and other digital means of communication managed by the faculty. Secondary sources included academic journals, reports, conference proceedings and government policy documents. To ensure instrument validity, the questionnaire was peer-reviewed by experts, and a pilot test was conducted with five students to check clarity, understanding and decrease time required to complete the questioner. Feedback from the pilot resulted in implementing question with less use of technical word and translation of question in Nepali.

In terms of ethics, institutional permission was obtained from the campus administration, and mandatory digital informed consent was secured from all voluntary, participants before data collection. Data from Google Forms were exported into Microsoft Excel for cleaning and preliminary analysis. The results were presented in tabular form and descriptive statistics such as frequencies, percentages and means were calculated to summarize student responses. The study is based on the following delimitations:

- i. The study was conducted on Sukuna Multiple Campus and may not reflect all public higher education institutes in Nepal.
- ii. Only students with internet access and experience utilizing online survey software were involved, so students who were less digitally literate did not take part.
- iii. The study focused on student usage of e-learning tools and practices, not what higher education institutes may provide, or whether faculty have adopted the tools and practices.

Result and Discussion

Demographic Information

Table 1

Participant Demographic

Title	Number/Percentage
Gender	
Female	61
Male	39
Total	100
Educational Program	
BBA	68
BICTE	20
BBS	12
Total	100

Table 1 shows demographics information of research, indicating 39% of male student and 61% of female student. Majority of student were enrolled in BBA (68%) program, followed by BICTE (20%) and BBS (12%).

E-learning Methodologies Employed by Students

The objective of the research was to find the e-learning methodology adopted by the students of Sukuna Multiple Campus following data and description support this aim.

Learning Preference of Students**Table 2***Learning Preference of Students*

Learning Preference	Percentage
Traditional classroom-based learning	6
Modern E-learning	20
Hybrid of Traditional & Modern E-learning	74
Total	100

Table 2 shows the students learning preference of the students only 6% them prefer traditional classroom-based pedagogy system, 20 % prefer e-learning and 74% prefer hybrid of traditional and modern e-learning. This aligns with Qi & Tian (2011) who found hybrid pedagogy popular due its ability to transform the primitive education classroom based educational system to a structured, transformed, planned, interactive, flexible and easily accessible digital learning platform. This indicates hybrid approach not only creates diverse learning style but also helps in self-paced learning with real time classroom discussion.

Use of E-learning Methodologies

Students in Sukuna Multiple Campus tend to use asynchronous e-learning methods more frequently than synchronous methods.

Table 3*Use of E-learning Methodology*

Methodology	Never	Rarely	Occasionally	Frequently	Very Frequently	Mean
Asynchronous	3	22	24	40	11	3.34
Synchronous	1	22	42	23	12	3.23
Grand Mean						3.28

According to Table 3, e-learning methods include synchronous and asynchronous learning. Eleven percent of students practiced asynchronous learning very frequently, 40% frequently, 24% occasionally, 22% rarely, and 3% never. The mean score of 3.34 suggests a clear preference for the flexibility asynchronous learning provides. In regard to synchronous learning, 12% of the students used it very frequently, 23% frequently. It was used occasionally by 42% of the students, 22% used it rarely, and 1% never used this learning method as indicated by the mean score of 3.23. This implies that synchronous learning was appreciated, but it was not as useful as asynchronous learning. At an overall grand mean score of 3.28, it is evident that students are engaged more on asynchronous learning. This reinforces the fact that students prefer asynchronous class over synchronous ones and participate more in asynchronous classes.

Preference of E-learning Methodologies.**Table 4***Preference of E-learning Methodology*

E-Learning Methodology	Percentage
Synchronous	10
Asynchronous	29
Hybrid of Synchronous & Asynchronous	61
Total	100

Table 4 presents the preferences of students on e-learning methodologies. The data show that the 61% of students preferred a hybrid approach that combines both synchronous and asynchronous learning. Similarly, asynchronous learning was chosen by 29% of respondents and only 10% of the students preferred synchronous learning. These results align with recent findings by Paul & Jefferson (2019) who found that 58% of university students preferred hybrid models due to their flexibility in balancing active learning activities and self-paced study, while 25-30% preferred asynchronous formats due to increased autonomy.

This shows that hybrid with the features of both the synchronous and asynchronous are the most preferred by the student of Sukuna Multiple Campus. The findings resemble to those of Paul & Jefferson (2019) who found out that college learners prefer hybrid models due to their flexible nature brought about by self-paced resources as well as live interactions. This is also corroborated by the claims of Giri (2021) regarding structural limitations which make it highly impractical for Nepalese learners in public universities. The combination of the features means that students can enjoy the advantages of the flexibility of self-paced learning with the opportunity for real-time interaction, guidance, and feedback from instructors.

Methodology of E-learning Used

Majority of students in Sukuna Multiple Campus has adopted LMS based and collaborative learning for day-to-day learning purpose.

Table 5

Methodology of E-learning Used

Methodology	1	2	3	4	5	Total Score	Mean(M)
Flipped Classroom	10	22	35	26	7	298	2.98
Adaptive learning	8	22	25	36	9	316	3.16
Gamification learning	30	37	15	14	3	222	2.22
Collaborative learning	5	14	28	40	13	342	3.42
Microlearning	13	23	20	40	4	299	2.99
LMS based Learning	4	11	24	27	34	376	3.76
Grand Mean							3.08

(1 =Never, 2 =Rarely, 3=Occasionally, 4=Frequently, 5 =Very Frequently)

Table 5 represents the analysis of e-learning methodologies adopted by student based on Likert scale responses. The scale was designed to capture the frequency of use where 1 indicated never, 2 indicates rarely, 3 indicates occasionally, 4 indicates frequently and 5 indicates very frequently.

The mean score for the flipped classroom is 2.98, which is slightly below the grand mean of 3.08, demonstrates comparatively lower preference of flipped classroom by students of Sukuna Multiple Campus. The finding aligns with Pokhrel et al. (2025) who concluded flipped classroom methodology had improved performance in the rural schools but did not show significant impact in city's schools, which indicates students were receptive to the flipped methodology most likely because of contextual factors and previous exposure. Similarly, Shrestha et al. (2016) found that when introducing flipped

classrooms to the students had a difficult time due to technology barriers and then issues of traditional teaching, which helps frame student comfort and preferences.

Adaptive Learning had mean score of 3.16, the score being higher than the grand mean of 3.08, indicating that adaptive learning is popular among students in Nepalese public colleges. This preference coincides with international research about adaptive systems. Dziuban et al. (2018) stated that adaptive learning platforms analyze the performance of learners and customize instruction based on content most needed by the learner to improve motivation and persistence with learning activities. Similarly, Plooy et al. (2024) found that adaptive technologies keep learners engaged by rewarding them with timely feedback and creating a pathway customized to the capability of the students.

Gamification learning appeared the least popular. The mean score of 2.22 was way below the grand mean and highlighted the limited use of this method in the context under examination. On the other hand, collaborative learning seemed to be the most preferred with a mean score of 3.42, it ranked second in popularity, just behind LMS-based learning. According to Scager et al. (2015), collaborative learning enhancing the learning experience through teamwork and shared knowledge and renowned for its interactive nature. This methodology increases the sense of working with community and solving problem collaboratively making it highly effective in e-learning environments.

Microlearning deserved a moderate level of engagement with the mean score 2.99 shows that microlearning has seen steady but not great adoption yet. LMS learning found the number one methodology with microlearning having less adoption compared to it of 3.76 was the highest, showing that LMS platforms form the backbone of e-learning in public colleges. According to Emmamoge et al. (2023) LMS platforms encourage active student engagement by promoting concept through interactive tools

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like quizzes, discussion forum and multimedia resources. This feature helps student focus their academic goals by providing structured, self-regulated learning, self-critical thinking enhancing learning environment.

LMS received the most widespread acceptance as these offered organization of course materials; and added interactive elements for student directed study while students mostly use collaborative learning particularly in team-based development and problem-solving contexts. In relation to adaptive learning, there were positive perceptions based on the personal engagement and motivation. The participants expressed moderate adaptation of both flipped classroom and micro-learning methods due to little technological affordances and familiarity. Though gamification is one of the trending methodologies of e-learning it is less adopted by the students of Sukuna Multiple Campus. Though, innovative approaches like microlearning and gamification have great pedagogical potential, they are not adopted by the students this condition can be improved by awareness, education, and infrastructure support.

E-learning Tools Employed by Students

As the primary objective of the research was to find the e-learning tools adopted by the students of the public college the following data and description support this aim.

LMS Tools for E-learning

Google Classroom is the most widely adopted LMS tool among students of Sukuna Multiple Campus, while the use of other tools remains relatively low.

Table 6*Use of LMS Tools for E-learning*

LMS Tool	Number /Percentage
Google Classroom	98
Moodle	7
Canvas	25
Blackboard	17
E-school	8
Veda	7
mySecondTeacher	17
Vurilo	3
Other Software	24
No Any	2

Table 6 shows the use of different Learning Management System (LMS) tools for e-learning. The findings reveal that Google Classroom was the most popular platform, with 98% students reporting using it. It is popular mainly because it is free to access, simple to use, and well-integrated with widely-used Google applications. Canvas (25) and Blackboard (17) came after, and they continued to have modest adoption compared to Google Classroom. Local and alternative tools, like my Second Teacher (17), E-school (8), Veda (7), and Vurilo (3), were found less adopted, a hint of limited institutional or student engagement with these platforms. But Moodle was used by 7 students only, though it remains the famous open-source system worldwide. Oddly, 24 respondents identified other types of software. Generally, the result shows that LMS tools are almost fully adopted, with Google Classroom leading conspicuously.

Social Media Tools for E-learning

Majority of student of Sukuna Multiple Campus use Youtube and Facebook as social media tools to support their learning.

Table 7

Use of Social Media Tools for E-learning

Social Media Tools	Number/Percentage
Facebook	61
YouTube	91
LinkedIn	19
Coursera	7
Skill Share	3
Tik Tok	14
Twitter	11
Pininterest	17
Other Software	34

Source: Field Survey, 2024 AD

It appears from e-learning on social media tools that YouTube (91%) and Facebook (61%) are the most widely adopted among learners, whereas apps such as LinkedIn (19%), TikTok (14%), Pinterest (17%), Twitter (11%), Coursera (7%), and Skillshare (3%) exhibit relatively limited usage. Further, 34% of students reported using “other software,” which may include some form of collaborative tools, such as Zoom, Microsoft Teams, or Google Classroom. The prominence being given to YouTube supports its claimed status as the top video-based tutorial and educational content platform. This result resembles with findings by Moghavvemi et al. (2018) stating that YouTube is considered an equally viable self-learning tool owing to its ease of availability, materials diversity, and multimodal presentation. On the other hand,

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Facebook is the second most popular platform, consistent with evidence from Liu (2009) who found Facebook to be among the most used social media tools for e-learning due to its facilitation of peer interaction, discussion groups, and content sharing. There seems to be a limited focus on the professional or specialized platforms as LinkedIn, Coursera, and Skillshare.

Content Creation Tools

Students heavily rely on popular content creation tools like MS Office and Google Workspace, while the use of other e-learning authoring tools is minimum.

Table 8

Use of Content Creation Tools

Content Creation tools	No. of Student/percentage
MS Office	89
Google Workspace	38
Articulate Storyline 360	3
Elucidat	1
WPS Office	26
Ispring Suite	2
Easy Generator	4
Other Tools	12
No Any	4

Knowledge Sharing Tools

Study shows that the majority of students on Sukuna Multiple Campus use LMS as knowledge-sharing tools.

Table 9*Use of Knowledge Sharing Tools*

Knowledge Sharing Tools	No. of Students/Percentage
Content Management System	12
File Sharing Platform	48
LMS	76
Video Sharing Platform	33
Message sharing platform	63
Other Tools	3
No Any	10

When it comes to the use of knowledge sharing tools, LMSs were utilized by 76% students-the most used system-for organizing, distributing, and communicating within the e-learning environment; message-sharing platforms are the second with 63% students. This is in line with Al-Busaidi & Al-Shihi (2011) who emphasized that LMSs have an important role in support of structured knowledge sharing, collaboration among learners, and monitoring through a medium of instruction. In the meanwhile, the others reviewed showed that message sharing platforms tend to provide for people instant communication and collaboration, whether formal or informal, among learners Sobaih et al. (2020). File-sharing platforms were favored by 48% students, while 33% students preferred video-sharing platforms, indicating a fairly widespread use of multimedia sources and collaborative repositories to exchange learning resources. Content management systems (12%) students and other tools (3%) students were rarely used; that might have been due to the complexity of the type of tool or limited awareness of such tools by the learners.

Video Conferencing Tools

Zoom is the most preferred video conferencing tool for students, however Messenger and google meet are also important in making virtual communication easier.

Table 10

Use of Video Conferencing Tools

Video Conferencing Tools	No. of Students/percentage
Zoom	84
Google Meet	51
MS teams	23
Facebook Messenger	59
Skype	2
Others	10
No Any	3

Table 10 shows the video conferencing tools adopted by students of Sukuna Multiple Campus. Zoom was the most adopted which having been used by 84% of students. Facebook Messenger follows in popularity, with 59% of students having reported usage, and Google Meet with 51%, showing heavy preference toward accessible and familiar tools for online communication. Currently, MS Teams serves 23% of students, while Skype and others are hardly used at 2% and 10%, respectively. Notably, only 3% of students reported that they do not carry out any video conferencing activity, thus, making it apparent that a majority of students employ online communication among themselves. These findings are consistent with Sapkota's (2020) account of Zoom and Google Meet were emerged as most essential tools for continuity of education during the COVID-19 pandemic, where students and instructors reported they were highly dependable for synchronous education. Both the present study and Sapkota's study provide additional support for the idea that video-conferencing

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platforms, especially Zoom and Google Meet, which were used as temporary solution during COVID-19 has emerged as the most important component digital learning ecosystem of Nepal.

Collaborative and Interactive Tools

Table 11

Use of Collaborative and Interactive Tools

Collaborative and Interactive Tools	No. of Students/percentage
Google Workspace	21
Microsoft Teams	22
Blackboard	11
Zoom	40
Facebook Messenger	76
Other Platform	8
No Any	8

According to the survey on student use of collaborative and interactive software, Facebook Messenger tops the list at 76%, used for communication and teamwork by students. This is followed by Zoom at 40%, Microsoft Teams at 22%, and Google Workspace at 21%. The rest of the platforms fall below 10%, with Blackboard and others having an 11% and 8% user rate, respectively. Simultaneously, 8% of students indicated a lack of usage of any collaborative or interactive tools. Overall, there appears to be a preference for platforms that are easily accessible and simple to use. This finding resembles with the research by Pedroso et al. (2023) which justifies the common situation and clarifies the influence of Facebook Messenger is due to its freely available features like facilitating collaboration, easy navigation, convenience to use.

AI Tools for E-Learning

ChatGPT is adopted most widely by student of Sukuna Multiple Campus, while the adoption of other AI tools is very less.

Table 12

Use AI Tools for E-Learning

AI Tools	No. of Students/percentage
ChatGPT	97
MS Copilot	12
Gemini	28
Character AI	15
QuillBot	20
Midjourney	7
Other Tools	15
No Any	2

The results indicate that ChatGPT is the AI tool with the highest frequency of tool use (97%). These findings suggest that it has a significant role in personalized learning and offering writing support. Other tools classified as lesser-used included Gemini (28%), QuillBot (20%), Character AI (15%), and MS Copilot (12%); Midjourney (7%) ranked last in engagement, likely reflecting its minimal potential for direct academic use. Only 2% students reported not using any AI tools, indicating that nearly all students used AI, likely meaning that it could be classified categorized as universal adoption. It is clear that such a trend is consistent with the predictions made by Kasneci et al. (2023) and Rudolph et al. (2023), who argue that LLMs are outpacing conventional assessment procedures in higher education institutions. This is because while it may be wise for institutions to formulate policies on how to handle the challenge, students have fully embraced the technology.

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Purpose of Using E-learning Tools

Table 13

Purpose of Using E-learning Tools

Purpose of Using E-learning Tools	No. of Students/percentage
Take Classes	47
Access note, videos and other educational document	68
Examination	42
Collaboration	45
Other Purpose	18

Table 13 lays out the data on why people use those e-learning tools, you know. From the survey, it turns out most students, like 68% of them, grab these tools mainly to get their hands-on notes, videos, and all sorts of other educational stuff. Then there's nearly half who use them for actually taking classes, that's 47%, and about the same number, 45%, for teaming up with other students on projects or whatever. Oh and, 42% go for exams through these things. Only 18% said something else entirely. So yeah, the big takeaway here is students lean on e-learning tools mostly for pulling up learning materials and making it easier to work together academically.

Method of Accessing E-learning Platform

This study highlights study on different method of accessing e-learning platform.

Table 14*Method of Accessing E-learning Platform*

Method	No. Students/percentage
Mobile Application	78
Laptop/Desktop Application	73
Website	63

The results of the survey show the most frequently used access platform is the mobile application as 78% of the students used them most frequently. This was very closely followed by the use of a laptop or desktop application at 73% and then the use of web browsers at 63%. This information suggests, instead, with m-learning being so widely adopted, that mobile learning is abundant among learners. This could be due to the portability, flexibility, and convenience of smartphones. These findings are consistent with Ally & Prieto-Blazquez (2014) where they noted mobile technologies transform e-learning technologies with ease of access to educational resources anywhere, anytime, and supporting autonomous and flexible learning. Similarly, Crompton and Burke (2020) found areas that use mobile applications in online learning are becoming more widespread as they offer collaborative, friendly, and context-aware environments.

Use of Paid Software for E-learning**Table 15***Use of Paid Software for E-learning*

Use of Paid Software for E-learning	Frequency
Yes	14
No	86
Total	100

Table 16 shows the use of paid or freeware software used by the student for the e-learning and most student (86%) are not using freeware software for e-learning any only 14% use paid e-learning software. This preference indicates the value students place on low cost and easy access in selecting their digitally delivered resources. Freeware platforms, including Google Classroom, Zoom (basic version), and Moodle, provide adequate features for most learners, thus it is understandable why they are popular. While paid platforms package access to additional features, premium content and/or an ad-free experience, they are not generally viable for students who experience affordability constraints, in particular students attending public colleges. Our findings resonate with Weller (2020) that open-source and free tools will continue to affirm the relevance of e-learning due to their scalable and inclusive functionality, particularly in settings where resources are restricted. In the same vein, Al-Busaidi (2013) highlighted that although paid systems offer improved institutional control and support, learners often prefer freeware and easy access and flexibility, in particular. In summary, our findings indicate that while freeware software is essential for providing equitable access to e-learning, they may not always be adopted where specialized tools, or institutional support options, are warranted.

Conclusions

The current study proves that students from Sukuna Multiple Campus are ready and flexible enough to use the available online learning environment. At the same time, the engagement of the students is still largely self-initiated due to lack of official institutional support. There is an apparent gap between students' independent adoption of new technologies and the capacity of the institution to respond to this change. The lack of digital infrastructure, limited number of trained educators, and insufficient funds continue to hinder the process of transition in the case of public campuses of Nepal. For e-learning to progress beyond voluntary and informal usage to become an integral part

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of the higher education system, academic institutions should make strategic investments into building necessary infrastructure and integrating technology into the teaching process.

Implications for Policy and Practice

The results provide several practical suggestions for the administrators and policymakers who want to improve their digital education framework. In particular, policy initiatives should address the issue of equal access to digital sources while considering the different preferences of the learners. It is essential for campus administrators to pay attention to transforming traditional classes into ICT-based ones and providing them with reliable broadband connections, digital boards, and projectors. Besides, institutional administrators should create structured programs aimed at the improvement of digital pedagogy skills and Learning Management Systems. Moreover, it is crucial to update curricula in order to combine traditional and digital elements with the help of targeted workshops and feedback.

Directions for Further Research

Although the current study provides information on the baseline adoption of e-learning approaches and software, it raises many issues which can be investigated by scholars in the future. First, future research should be based on longitudinal designs in order to find out the influence of blended learning models on student achievements and learning experience. In addition, further studies should examine the role of artificial intelligence in the personalized learning process in view of the high level of Generative AI usage observed in the current study. Lastly, the influence of the different demographic backgrounds of the students on the effectiveness of digital tools as well as the impact of the digital learning environment on students' mental state should be considered in future studies.

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