Attitudes of Graduate Students Towards Online Learning Systems

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Received: 2 March 2025
Revised: 18 May 2025
Accepted: 13 June 2025
Published: 25 July 2025

JANAJYOTI JOURNAL
(जनज्योति जर्नल)
ISSN : 2961-1563 (Print)
: 3102-0275 (Online)
https://www.nepjol.info/index.php/jj
Printed at : July, 2025
Published by :
RMC
JANAJYOTI MULTIPLE CAMPUS
Lalbandi, Sarlahi, Nepal
www.jjmc.edu.np

Abstract

Background: *This study aimed to investigate graduate students' attitudes toward online learning systems in the Kathmandu Valley. With the growing reliance on digital platforms in education, understanding student perceptions is important for improving the effectiveness of online learning.*

Methods: *A descriptive survey design was employed to collect data from 400 graduate students, comprising 250 from colleges in Kathmandu and 150 who completed the survey via google forms. A questionnaire containing 20 positive and negative statements, rated on a 5-point Likert scale, along with two open-ended questions, was used. Statistical tools, including the mean, standard deviation, t-test, chi-square test, and percentage analysis, were applied.*

Results: *The findings revealed that most students had a positive attitude toward online learning systems, particularly recognising their usefulness in enhancing learning performance and supporting self-learning. However, challenges such as slow and unstable internet, limited digital literacy, and discomfort with screen-based learning negatively impacted the experiences of*

Preferred Citation:
Sah, H. N. (2025). Attitudes of Graduate Students Towards Online Learning Systems. *Janajyoti Journal*, 3(1), 300–332. https://doi.org/10.3126/jj.v3i1.83320

some students. No significant differences were found in attitudes based on gender or faculty.

Conclusion: *While student attitudes are generally favourable, the study highlights the need for improved internet infrastructure, digital literacy training, and integration of online learning concepts into the curriculum. Policymakers and educators should prioritise teacher training to enhance online education systems.*

Keywords: COVID-19, higher education, information & communication technology, learning attitudes, online learning.

Introduction

The COVID-19 pandemic has irrevocably transformed many sectors, and education is no exception(Hogan et al., 2021). What was once considered a supplementary tool—integrating digital resources in learning environments—has emerged as a central pillar in educational delivery (Alenezi et al., 2023) digital education is essentially a modern invention. It is the digitalization of a segment of the educational system. This article attempts to offer insightful thoughts on the future potential and difficulties of information and communication technology (ICT). As institutions across the globe rapidly adapted to unprecedented challenges, online learning systems have become synonymous with the "new normal," driving a paradigm shift from traditional, in-person pedagogy to technology-enabled instruction (Fitzpatrick, 2023).

Information technology (IT) refers to the hardware and software used in computerized information systems and has significantly shaped the current society (Kraglund-Gauthier, 2015) VA: Stylus. Publisher's Description: Two seismic forces beyond our control-the advent of Web 2.0 and the inexorable influx of tech-savvy Millennials on campus-are shaping what Roger McHaney calls "The New Digital Shoreline" of higher education. Failure to chart its contours, and adapt, poses a major threat to higher education as we know it. These forces demand that we as educators reconsider the learning theories, pedagogies, and practices on which we have depended, and modify our interactions with students and peers-all without sacrificing good teaching, or lowering standards, to improve student outcomes. Achieving these goals requires understanding how the indigenous population of this new shoreline is different. These students aren't necessarily smarter or technologically superior, but they do have different expectations. Their approaches to learning are shaped

by social networking and other forms of convenient, computer-enabled and mobile communication devices; by instant access to an overabundance of information; by technologies that have conferred the ability to personalize and customize their world to a degree never seen before; and by time-shifting and time-slicing. As well as understanding students' assumptions and expectations, we have no option but to familiarize ourselves with the characteristics and applications of Web 2.0-essentially a new mind set about how to use Internet technologies around the concepts of social computing, social media, content sharing, filtering, and user experience. Roger McHaney not only deftly analyzes how Web 2.0 is shaping the attitudes and motivations of today's students, but guides us through the topography of existing and emerging digital media, environments, applications, platforms and devices-not least the impact of e-readers and tablets on the future of the textbook-and the potential they have for disrupting teacher-student relationships; and, if appropriately used, for engaging students in their learning. This book argues for nothing less than a reinvention of higher education to meet these new realities. Just adding technology to our teaching practices will not suffice. McHaney calls for a complete rethinking of our practice of teaching to meet the needs of this emerging world and envisioning ourselves as connected, co-learners with our students.","author":[{"dropping-particle":"","family":"Kraglund-Gauthier","given":"Wendy","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Teaching and Learning with Technology","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2015"]]},"page":"80-82","title":"Book Review- The New Digital Shoreline: How Web 2.0 and Millennials are Revolutionizing Higher Education","type":"article-journal","volume":"4"},"uris":["http://www.mendeley.com/documents/?uuid=a81c65fc-72fe-4eb6-a886-a7e5891c50b5"]}],"mendeley":{"formattedCitation":"(Kraglund-Gauthier, 2015. Information and communication technology (ICT) significantly impacts the education industry and has led to changes in the delivery mode of education, learning, and teaching. ICT is an umbrella term that includes any communication or application encompassing radio, television, cellular phones, satellite systems, computer and network hardware or software, and so on (Obiani Arugu & Francis Chigozie, 2016) building on the pervasive influence of modern information and communication technologies (ICTs. ICT is rapidly developing in many countries due to globalisation and technological change. If ICT is used effectively, it can expand access to education for students and enhance the quality of education by reinforcing its relevance. Online learning systems, blended

learning, and distance learning are the various types of learning that arise from ICT (Dias et al., 2014).

Online learning systems have become central to educational delivery, particularly following the COVID-19 pandemic. This shift has generated global interest in how students perceive and adapt to digital education platforms. Several theoretical models and prior studies help explain these attitudes.

The Technology Acceptance Model (TAM), developed by Davis (1989), shows that students are more likely to adopt a system if they perceive it as valuable and easy to use. In the context of e-learning, studies from South Asia confirm that perceived usefulness directly influences student attitudes (Islam, 2016). Similarly, the Self-Directed Learning Theory, as proposed by Knowles (1975), emphasises that online learners need to be self-motivated and independent. However, many students in Nepal struggle with self-regulation, as found by Thapa (2020), which may affect their learning outcomes.

The Substitution, Augmentation, Modification and Redefinition (SAMR) model (Puentedura, 2006) offers a useful lens for evaluating how technology transforms learning. In Nepal, digital tools are often used at a basic level, mainly as substitutes for traditional methods. Moving to higher levels of integration, such as redefinition of tasks, requires investment in teacher training and infrastructure.

Globally, Alenezi, Wardat, and Akour (2023) report that digital learning offers convenience but may also reduce interaction and motivation if poorly designed. Fitzpatrick (2023) emphasised the need for engaging content and universal design principles to sustain student interest. These findings are consistent with local concerns about user-friendliness and engagement. Studies in Nepal suggest mixed attitudes toward online learning. While students value flexibility and access, they often face barriers such as poor internet connectivity and a lack of digital skills (Singh, 2020). Thapa (2020) found that students in urban areas, such as Kathmandu, had more positive views compared to their rural counterparts. Similarly, in Pakistan and India, students responded well to online learning where support systems were strong (Zafar, 2019).

Understanding learner attitudes toward these innovative methods is crucial in this rapidly evolving digital landscape. The shift towards online learning systems presents opportunities and challenges for graduate students, who often juggle academic responsibilities with other personal and professional commitments. This

study aims to investigate graduate students' perceptions of online learning systems, with a particular focus on the experiences of those in the Kathmandu Valley. By investigating their attitudes, the research aims to identify both the benefits and the obstacles inherent in digital education—a critical step in enhancing the efficacy and inclusiveness of contemporary teaching methods.

Integrating online learning systems into higher education supports academic continuity during periods of crisis and promises long-term improvements in educational access and quality. In this context, the current study provides an in-depth analysis of the factors influencing student attitudes, including technological accessibility, self-discipline, and adaptability. The insights gained from this investigation are expected to inform policymakers, educators, and institutional leaders, ultimately contributing to the development ofmore robust and flexible educational frameworks in the digital age. The study is based on the following three research questions.

i. What are the attitudes of graduate students toward online learning systems in Kathmandu Valley?

ii. Are there significant differences in students' attitudes toward online learning systems based on gender and faculty?

iii. What are the key factors that influence graduate students' attitudes toward online learning systems?

Methods and Procedures

This research study is descriptive and based on a quantitative research design, utilising a survey study. It is the most commonly used method of investigation, ranging from large-scale investigations to small-scale studies or even small classroom studies.

The primary source of the data was obtained from the students through an opinion questionnaire and open-ended questions. As a secondary source of data, the researcher collected related theses, articles, journals, news, and books from subject experts, teachers, the Curriculum Development Centre (CDC), and other relevant sources.

Survey research requires a large number of participants. The study population consists of graduate students from the Education, Commerce, Engineering, and

Science streams within Kathmandu Valley during the academic year 2078/2079. The sample was selected using a proportionate stratified random sampling method.

Table 1

List of Data Collection College

Management		**Science & Engineering**		**Education**	
College Name	**Total Student**	**College Name**	**Total Student**	**College Name**	**Total Student**
Mega College New Baneshor	20	Everest College Thapathali	20	KMC Koteshor	20
DaffeCollege RantaPark	20	Himalayan Institute of Science and Technology Shankhamul	20	Sanotimi College	20
Koteshor Multiple College	30	Nagarjuna College Pulchock	20	RatnaRajya College	20
Liverpool College Baneshor	20	Advanced College of Engineering	20	Janamatri College	20
Online Google Form	50	Online Google form	50	Online Google form	42

The aim of the survey was to investigate students' attitudes toward onlinelearning systems. The researcher used anopinionnaire and open-ended questions as data collection tools.

In this study, the researcher used a closed-endedopinion questionnaire. Those statements are positive and negative. For each statement,a Likert five-point scale is used. These options were strongly agreed (SA), agreed (A), undecided (U), disagreed (DA), and strongly disagreed (SDA).

A pilot study was conducted to assess the reliability of these tools or instruments. Twenty students were involved in the pilot study,which was not included in the study. The obtained data were calculated using the split-half method, and the reliability coefficient was found 0.63.

The collected data wasanalysedusing statistical techniques such as mean, standard deviation, percentage, t-test, andtest under the quantitative and descriptive methods. The statistical $\chi 2$ test was mainly applied to determine students' attitudes toward online learning systems. $\chi 2$ test was used to test the male and female attitudes

towards the online learning systems.The t-test was used to compare the attitude of male and female students and faculty towards online learning systems. The weighted mean and standard deviation of each statement regarding the students' attitudestoward onlinelearning systems were measured.The standard deviation is used to analyseand measure the spread of a data distribution.

Result and Discussions

Graduate Students' Attitude to E-Learning

To determine students' attitudes toward onlinelearning systems, the $\chi 2$value was calculated for each statement. To discover students' attitudes toward online learning systems,one must findtheir views or reactions toward online learning systems-related activities. The researchers developed five statements that were proposed to students, two of which were positive and three of which were negative. The followingare the detailed responses of students:

Table 2

Activities related statement

Statement	Type	S.A.	A.	N.	D.A.	S.D.A	Mean	S.D.	$\chi 2$ test
1- I believe online learning systemsand technologies will improve my study performance.	P	28.75%	35.5%	19.75%	10%	6%	3.71	1.16	5.82
3- Computers make study more interesting.	P	23.8%	19.8%	11.8%	26%	18.8%	3.04	1.47	0.6
15- Online learning systems requireexpensive technical support.	N	16%	20%	25%	24%	16%	2.94	1.3	8.55
11- Online learning system-sare challenging to do.	N	15.5%	18.5%	21.5%	29%	15.5%	3.01	1.34	7.35
20 - I feel more uncomfort-able reading textbook on a computer screen than a physical textbook.	N	14%	17%	25%	17.50%	26.50%	2.75	1.38	2.94
Average		19.61%	22.16%	20.61%	21.30%	16.56%	2.54		

Source: Based on data collected by researcher, 2023.

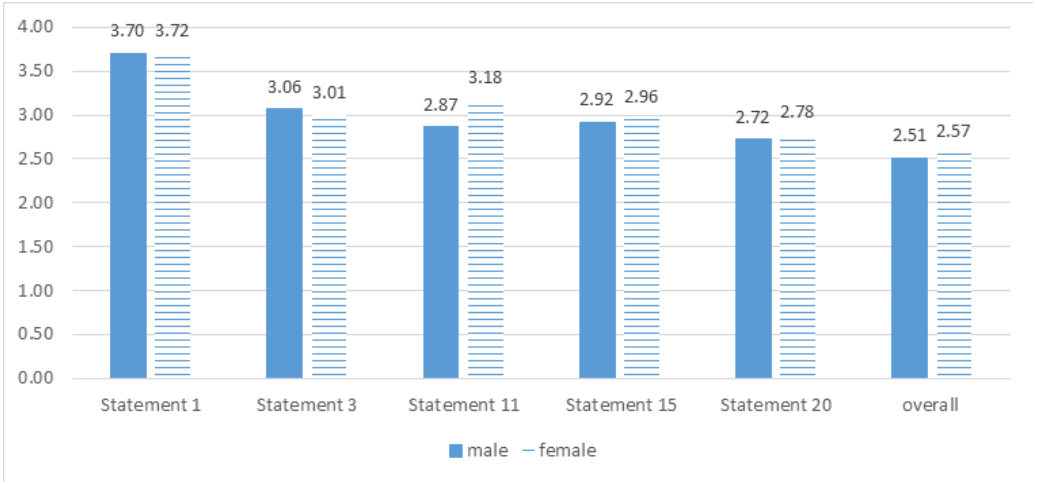
The findings indicate that a majority of students hold a favourable perception of online learning systems. Specifically, 63.75% of respondents either strongly agreed or agreed that online learning systems and technologies improve their study performance, with a mean score of 3.71 and a standard deviation of 1.16. This aligns with existing research, which shows that when learners perceive online platforms as applicable, they are more likely to adopt and engage with them (Davis, 1989). In contrast, the statement "computers make studying more interesting" received more varied responses, with only 42.8% agreeing or strongly agreeing and a relatively high proportion (45.8%) disagreeing or strongly disagreeing. The mean score for this item was 3.04 with a higher standard deviation of 1.47, suggesting greater variability in student attitudes. This disparity may reflect differences in students' digital literacy or prior exposure to engaging educational technologies (Alenezi, Wardat, &Akour, 2023). These results highlight the importance of not only integrating online systems into education but also ensuring they are designed to be interactive and relevant to learners' needs.

"Online learning systems are challengingto do." 15.5% of students strongly disagreed, 29% disagreed, 21.5% were undecided, 18.5% agreed, and only 15.5% strongly agreed with this statement. The chi-square value is 7.35 at a 0.05 level of significance. The mean score of the statement is 3.01, and the standard deviation is 1.34. It shows that most students think online learning systems are challenging. It indicates to the researchers that the student has a positive attitude towards online learning systems.

"Online learning systems require expensive technical support." A total of 15% of students strongly disagreed, 20% disagreed, 25% were undecided, 24% agreed,and only 16% strongly agreed with this statement-the chi-square value is 8.55 at a 0.05 level of significance. The total mean score of the statement is 2.94, and the standard deviation is 1.3. It indicates that the majority of students are not in favourof this statement.

"I feel uncomfortable reading a textbook on a computer screen than a physical textbook." 14% of students strongly disagreed, 17% disagreed, 25% were undecided, 17.5% agreed, and only 26.5% strongly agreed withthis statement. The chi-square value is 2.94 at a 0.05 level of significance. The mean score of the statement is 2.75, and the standard deviation is 1.38. It indicates to the researchers that students have a negative attitude towards online learning systems.

Figure 1: Mean result of students' attitude toward online learning systemsactivities based on gender



Source: Based on data collected by researcher, 2023

Figure 1 shows the comparative mean scores of male and female students' attitudes toward various aspects of online learning systems. Overall, both genders expressed moderately positive attitudes, with female students showing slightly higher mean scores for positively framed statements such as "online learning systems improve study performance" and "computers make study more interesting."

Table3

Mean result of students' attitude toward online learning systems activities

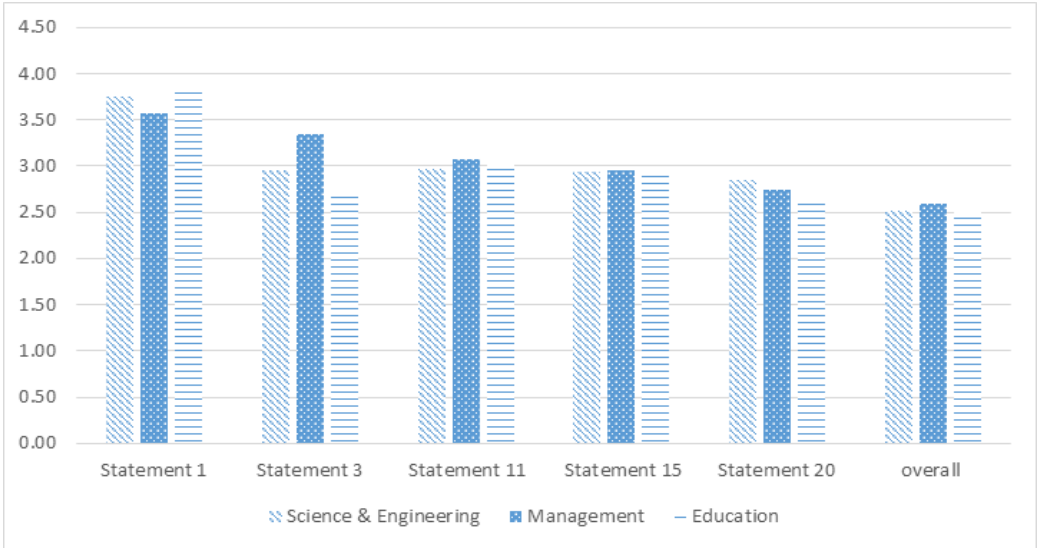
Statement	Gender		Faculty			Total
	Male	Female	Science & Engineering	Management	Education	
1- I believe online learning systems and technologies will improve my study performance.	3.70	3.72	3.75	3.57	3.84	3.71
3- Computers make study more interesting.	3.06	3.01	2.95	3.35	2.73	3.04
11- Online learning systems are difficult to do.	2.87	3.18	2.97	3.08	3.01	3.01
15- Online learning systems require expensive technical support.	2.92	2.96	2.95	2.95	2.96	2.94

Statement	Gender		Faculty			Total
	Male	Female	Science & Engineering	Management	Education	
20- I feel more uncomfortable reading a textbook on a computer screen than a physical textbook.	2.72	2.78	2.85	2.74	2.62	2.75
Overall mean result of Activities relatedonline learning systems attitudes	2.51	2.57	2.52	2.59	2.51	2.54

Source: Based on data collected by researcher, 2023

Table 3 presents the mean scores of students' attitudes toward online learning activities based on gender and faculty. Female students generally reported slightly more positive attitudes than males, particularly regarding the usefulness of online systems in improving study performance. Among faculties, Education students showed the most favorable views, especially for performance-related statements, while Science & Engineering students found online learning slightly less engaging. Attitudes toward the challenges and technical demands of online systems were relatively consistent across all groups.

Figure 2:Mean result of students' attitude toward online learning systems activities based on faculty



Source: Based on data collected by researcher, 2023

Figure 2 shows the variation in students' attitudes toward online learning activities across different faculties. Students from the Faculty of Education showed the most positive attitude overall, particularly in believing that online systems enhance academic performance.

The findings indicate that graduate students in the Kathmandu Valley generally hold positive attitudes toward online learning systems, with no significant gender-based differences observed in their responses to key statements. For instance, both male (M = 3.70) and female (M = 3.72) students agreed that online learning technologies improve study performance (t-test = 0.388, $p > 0.05$), aligning with studies highlighting the efficacy of digital tools in enhancing academic outcomes (Alenezi et al., 2023; Zhang et al., 2021). Similarly, faculty-wise comparisons revealed no significant disparities. However, science/engineering students (M = 3.75) and education students (M = 3.84) expressed slightly stronger agreement than management peers (M = 3.57), suggesting disciplinary nuances in technology adoption (Ottestad et al., 2008). Notably, the statement "Computers make study more interesting" showed significant faculty-based differences ($p = 0.004$), with management students (M = 3.35) rating it higher than education students (M = 2.73), possibly reflecting varying pedagogical exposures (Dias et al., 2014). Challenges, such as perceived difficulty (M = 3.01) and discomfort with screen-based reading (M = 2.75), were acknowledged but did not outweigh the overall positivity, corroborating Thapa's (2020) findings on resilience to digital barriers in Nepalese higher education. However, the subpar mean score for activity-related statements (M = 2.54) signals unresolved infrastructural and usability issues, echoing calls for institutional support in ICT integration (Shakya et al., 2018). These results collectively underscore the potential of online learning while emphasising targeted interventions to address contextual disparities.

Student Attitudes towards Online learning systems Resources

To discover students' attitudes toward online learning systems,one mustfind their views or reactions toward online learning systems-related activities. Five statements were proposed to students by the researcher, of which three were positiveand two were negative. The following are the detailed responses of students:

Table 4

Student attitudes towards online learning systems resources

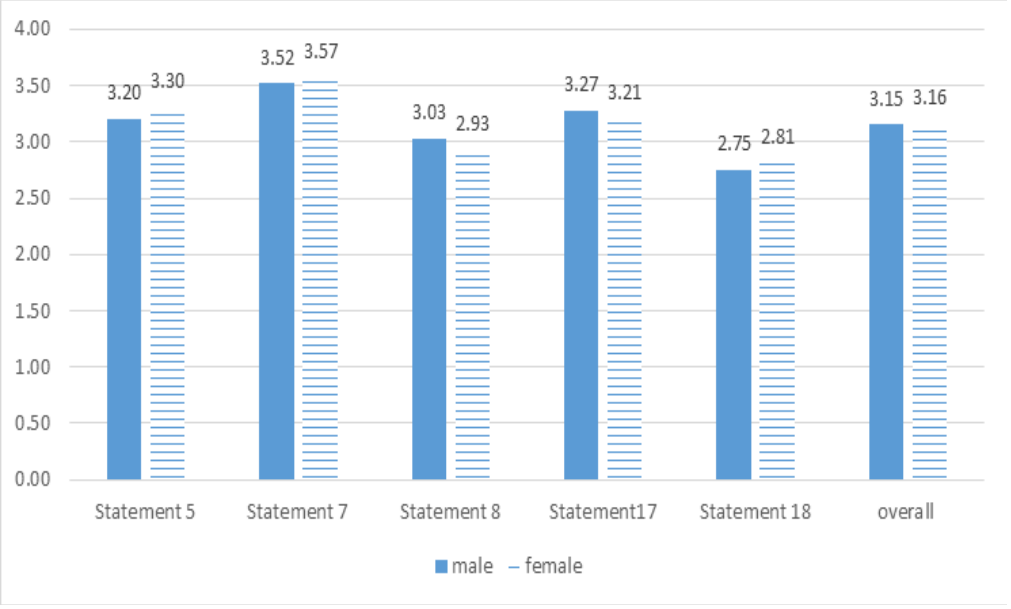
Statement	S. T.	S.A.	A.	N.	D.A.	S.D.A		S.D.	χ2 test
5- Online learning systems are very economical for students to adopt.	P	18.75%	27.75%	24%	17%	12%	3.25	1.28	4.98
7- Online learning systems will provide me with better learning opportunities than traditional means of learning.	P	31.5%	27.5%	15%	15%	10.75%	3.54	1.35	2.45
8- It is easier to revise electronic educational materials than printed material.	P	17.50%	21.75%	16.25%	29.25%	14.75%	2.99	1.35	0.65
17- Online learning systems materials haveno any trust.	N	14%	18.50%	23.50%	17%	27%	3.24	1.39	1.03
18- I can't find related content on the internet.	N	14%	16%	21%	21%	28%	2.77	1.37	3.2
Average		19.15%	22.30%	19.95%	19.85%	18.15%	3.16		

Source: Based on data collected by researcher, 2023

The findings reveal mixed but generally positive attitudes among graduate students toward the resource-related aspects of online learning systems. A majority of students perceived online learning as economical (M = 3.25, SD = 1.28), with 46.5% (combined agree/strongly agree) endorsing its cost-effectiveness, aligning with Thomes' (2021) assertion that e-learning reduces institutional and learner expenses. Notably, 59% of students agreed that online systems offer superior learning opportunities compared to traditional methods (M = 3.54, SD = 1.35), which reinforces global trends toward the efficacy of digital education post-pandemic (Hogan et al., 2021). However, scepticism emerged regarding the practicality of digital resources: only 39.25% found electronic materials easier to revise than printed texts (M = 2.99,

SD = 1.35), reflecting persistent preferences for tactile learning tools (Gillett-Swan, 2017). Trust in online materials was affirmed (M = 3.24, SD = 1.29), with 44% rejecting the statement that they "have no trust," underscoring growing confidence in digital content quality (Zhang et al., 2021). Conversely, 49% struggled to locate relevant online content (M = 2.77, SD = 1.37), highlighting gaps in digital literacy or resource curation—a challenge noted in developing educational contexts (Olaniran, 2008). The chi-square values (ranging from 0.65 to 10.13) confirmed significant variance in responses, suggesting that while students value online learning's affordability and accessibility, persistent technical and usability barriers necessitate targeted interventions, such as institutional training in information retrieval and resource organisation.

Figure 3: Mean result of students' attitude toward online learning systemsresources based on gender



Source: Based on data collected by researcher, 2023

Figure 3 shows the gender-wise comparison of students' attitudes toward online learning system resources. Both male and female students expressed generally positive perceptions, with females showing slightly higher mean scores in areas such as cost-effectiveness and learning opportunities.

Table 5

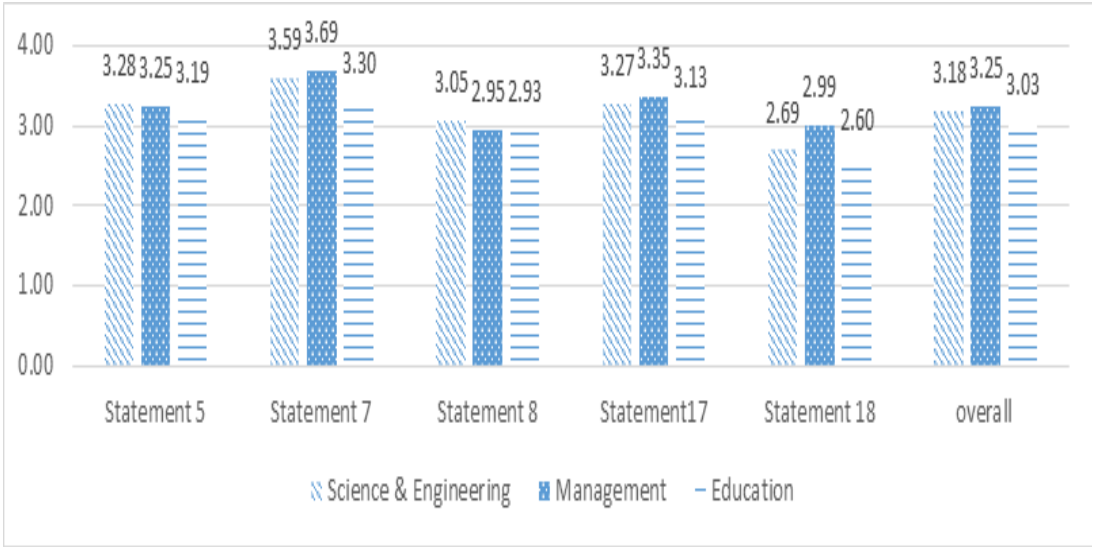
Mean result of student attitudes towards online learning systems resources

Statement	Gender		Faculty			Total
	Male	Female	Science & Engineering	Management	Education	
5- Online learning system-sare very economical for students to adopt.	3.20	3.30	3.28	3.25	3.19	3.25
7- Online learning systems will provide me with better learning opportunities than traditional means of learning.	3.52	3.57	3.59	3.69	3.30	3.54
8- It is easier to revise elec-tronic educational materials than printed material.	3.03	2.93	3.05	2.95	2.93	2.99
17- Online learning systems materials haveno any trust.	3.27	3.21	3.27	3.35	3.13	3.24
18- I can't find related con-tent on the internet.	2.75	2.81	2.69	2.99	2.60	2.77
The overall mean result of Student attitudes towards online learning systems resources	3.15	3.16	3.18	3.25	3.03	3.16

Source: Based on data collected by researcher, 2023

Table 5 presents the mean scores of students' attitudes toward online learning system resources across gender and faculty. Female students showed slightly more favorable views overall, particularly regarding affordability and access to learning opportunities. Among faculties, Management students had the highest overall mean score (3.25), reflecting stronger confidence in online learning resources, while Education students had the lowest (3.03), indicating more skepticism. Despite variations, the total mean score (3.16) suggests that students generally perceive online learning resources as beneficial but acknowledge ongoing challenges related to trust and accessibility.

Figure 4: Mean result of students' attitude toward online learning systems resources based on gender



Source: Based on data collected by researcher, 2023

Figure 4 shows the mean attitudes of students from different faculties toward the resource-related aspects of online learning systems. Management faculty students showed the highest overall positive attitude, especially in viewing online learning as offering better opportunities and accessible content. Science & Engineering students also reported favorable views, particularly on cost-effectiveness. In contrast, Education faculty students had the lowest mean scores across most items, indicating relatively more concerns about trust in materials and difficulty in accessing relevant content. These variations highlight the need for faculty-specific strategies to enhance students' engagement with digital learning resources.

"Online learning systems are very economical for students to adopt." In this statement,the mean score is 3.20 for male students and 3.30 for female students,the t-test value is 0.909, and the significance level is 0.05. We cannot see a significant difference between male and female student's attitudes toward this statement. According to the data, science and engineering students have a mean score of 3.28, management students have a mean score of 3.25, education students have a mean score of 3.19 students,the t-test value is 0.795, and the significance level is 0.05. So,

we can conclude that there is no significant difference onstudents' attitudes towardthe statement based on faculty. The total mean score of the statement is 3.25, and the standard deviation is 1.28.

"Online learning systems will provide me with better learning opportunities than traditional means of learning." In this statement, the mean score is 3.52 for male students, 3.57 for female students,the t-test value is 0.707, and the significance level is 0.05. We cannot see a significant difference between male and female student's attitudes toward this statement. According to the data, science and engineering students have a mean score of 3.59, management students have a mean score of 3.69, education students have a mean score of 3.30 students,the t-test value is 0.115, and the significance level is 0.05. So, we can conclude that there is no significant difference on students' attitudes toward the statement toward the basis of faculty. The total mean score of the statement is 3.54, and the standard deviation is 1.35.

"It is easier to revise electronic educational materials than printed material." In this statement, the mean score is 3.03 for male students, 2.93 for female students,the t-test value is 0.687, and the significance level is 0.05. We cannot see a significant difference between male and female student's attitudes toward this statement. According to the data, science and engineering students have a mean score of 3.05, management students have a mean score of 2.95, education students have a mean score of 2.93 students,the t-test value is 0.822, and the significance level is 0.05. So, we can conclude that there is no significant difference on students' attitudes toward the statement based on faculty. The total mean score of the statement is 2.99, and the standard deviation is 1.35.

"Online learning systems materials haveno any trust." In this statement, the mean score is 3.27 for male students, 3.21 for female students,the t-test value is 0.547, and the significance level is 0.05. We cannot see a significant difference between male and female student's attitudes toward this statement. According to the data, science and engineering students have a mean score of 3.27, management students have a mean score of 3.35, education students have a mean score of 3.13 students, the t-test value is 0.356, and the significance level is 0.05. So, we can conclude that there is no significant difference on students' attitude towards the statement based on faculty. The total mean score of the statement is 3.24, and the standard deviation is 1.39.

"I can't find related content on internet." In this statement, the mean score is 2.75 for male students, 3.81 for female students,the t-test value is 0.563, and the

significance level is 0.05. We cannot see a significant difference between male and female student's attitudes toward this statement. According to the data, science and engineering students have a mean score of 2.69, management students have a mean score of 2.99, education students have a mean score of 2.60 students,the t-test value is 0.109 and the significance level is 0.05. So, we can conclude that there is no significant difference on students' attitudes toward the statement based on faculty. The total mean score of the statement is 2.77, and the standard deviation is 1.37.

Resource is one of the aspects which have direct impact on attitude of students toward online learning systems. The researcher had prepared five statements related to resources affecting in online learning systems. There were five statements related to resources of which three are positive and remainingtwo are negative; on two positive statements agreepercentage is high and on one disagree percentage is high and regarding two negative statements disagree percentage is high, the overall mean score of all the resources-related statements is 3.16 and the standard deviation is 0.66. Which means a higher than the average means score. The mean score of male students is 3.15 and the mean score of female students is 3.16 and t-test value is 0.696 and the significance level is 0.05. We cannot see the significant difference between male and female student's attitudes on this theme. According to the data, science and engineering students have a mean score of 3.18, management students have a mean score of 3.25, education students have a mean score of 3.03 students and the t-test value is 0.061, and the significance level is 0.05. So we can conclude, there is no significant difference in students' attitude towards the theme on the basis of faculty. So, we can conclude that on the basis of resources students have positive attitude towards online learning systems. On the basis of the overall percentage, the agreed percentage is higher in the resources-related statement, so the attitudes of the students can be said to be positive. The total mean score is 3.15 which is much higher than the average.

Student Attitudes towards Online learning systems User-Friendly

To find out attitude of students toward online learning systems, it is necessary to discover their view or reaction toward online learning systems related activities. Five statements were proposed to students by the researcher, on which three statements were positive and two statements were negative and following are the detailed response of students:

Table 6

Student attitudes towards online learning systems user-friendly

Statement	S.T	S.A.	A.	N.	D.A.	S.D.A	**Mean**	**S.D**	**χ2test**
4- I prefer using a computer to prepare my lessons.	P	29.50%	26.50%	18.25%	15.25%	10.50%	3.49	1.33	12.86
6. Working and studying with computers is exciting.	P	23%	26.75%	23.75%	15%	11.50%	3.35	1.29	3.55
9- Online learning systems are useful for self-learning.	P	27.25%	26.50%	18.50%	14.75%	12.75%	3.41	1.36	0.86
12- Using of online learning systems is boring.	N	18.50%	21%	21%	24%	15.50%	2.98	1.35	4.712
13- Using computer systems requires a lot of mental effort.	N	15%	18.50%	22%	33.50%	11%	2.84	1.28	6.17
Average		22.65%	23.85%	20.70%	20.50%	12.25%	3.21		

Based on data collected by researcher, 2023.

"I prefer using a computer to prepare my lessons." In this statement, 29.50% of students strongly agree, 26.50% of students agree, 18.25% of students are undecided, 15.25% of students disagree, and only 10.50% of students strongly disagree with this statement. The chi-square value is 12.86 at the 0.05 level of significance. The mean score of the statement is 3.49 and the standard deviation is 1.33. It shows that most of the students prefer using a computer to prepare lessons. It indicates to the researchers that the students have a positive attitude towards online learning systems.

"Working and studying with computers is exciting." In this statement, 23% of students strongly agree, 26.75% of students agree, 23.75% of students are undecided, 15% of students disagree, and only 11.50% of students strongly disagree with this statement. The chi-square value is 3.55 at the 0.05 level of significance. The mean score of the statement is 3.35 and the standard deviation is 1.3. It indicates

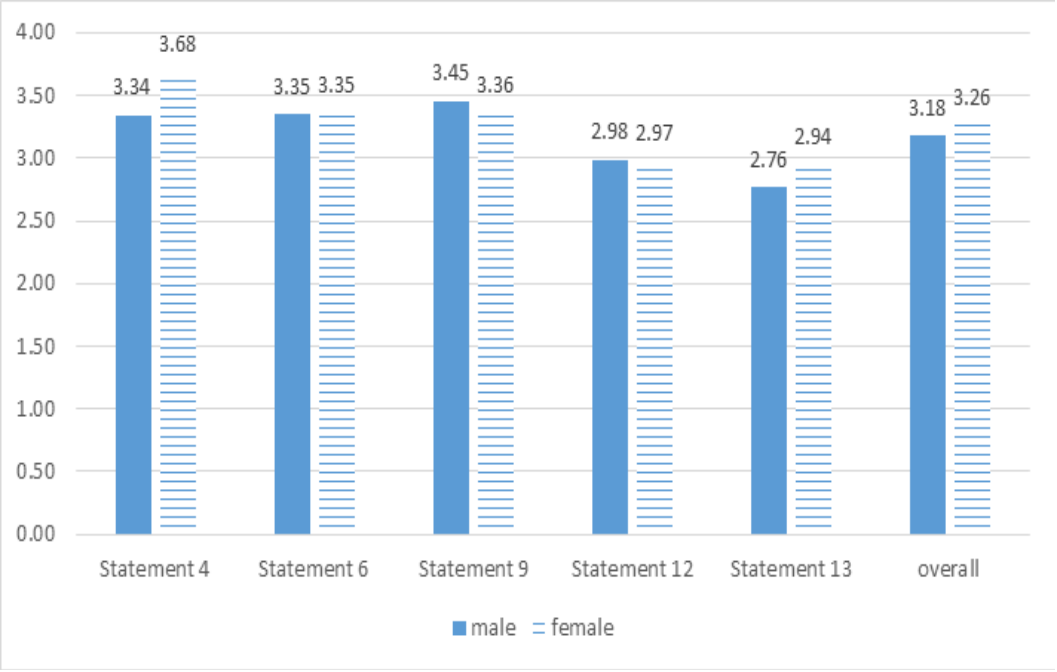
to the researchers that the students have a positive attitude towards online learning systems.

"Online learning systems is useful for self-learning." A total of 27.25% of students strongly agree, 26.50% of students agree, 18.50% of students are undecided, 14.75% of students disagree, and only 12.75% of students strongly disagree with this statement. The chi-square value is 0.86 at the 0.05 level of significance. The mean score of the statement is 3.41 and the standard deviation is 1.36. It shows that most of the students think online learning systemsis useful for self-learning. It indicates to the researchers that the students have a positive attitude towards online learning systems.

"Using of online learning systems is boring." A total of 15.5% of students strongly disagree, 24% of students disagree, 21% of students are undecided 21% of students agree, and only 18.5% of students strongly agree with this statement. The chi-square value is 4.712 at the 0.05 level of significance. The mean score of the statement is 2.98 and the standard deviation is 1.35. It shows that most of the students thinkonline learning systemsis difficult to do. It indicates to the researchers that the students have a positive attitude towards online learning systems.

"Using computer systems require a lot of mental effort." A total 11% of students are strongly disagreed and 33.5% of student disagrees and 22% of students are undecided and 18.5% of students are agree and only 15% of students strongly agree about this statement. The chi square value 6.17 at 0.05 level of significance. The mean score of the statement is 2.84 and the standard deviation is 1.28. It indicates to the researchers that the students have a positive attitude towards online learning systems.The findings from the various statements indicate that students generally hold a positive attitude toward online learning systems. A significant proportion of students (56%) preferred using a computer to prepare their lessons, as reflected in a high mean score of 3.49, suggesting comfort and familiarity with digital tools. Similarly, over half of the respondents found working and studying with computers exciting (M = 3.35), and many recognized the usefulness of online learning systems for self-learning (M = 3.41). Although some students expressed that online learning could be boring (M = 2.98) or mentally demanding (M = 2.84), the overall responses show more agreement than disagreement, indicating that students are adapting to and valuing online learning despite minor challenges. These results reinforce the growing acceptance and integration of digital platforms in education.

Figure 5: Mean result of students' attitude towards user friendly activitieson the basis of gender



Source: Based on data collected by researcher, 2023

Figure 5 shows gender-wise differences in students' attitudes toward the user-friendliness of online learning systems. Both male and female students showed generally positive attitudes, with females reporting slightly higher mean scores across most items. This suggests that female students may find online platforms slightly more accessible and easier to use.

Table 7

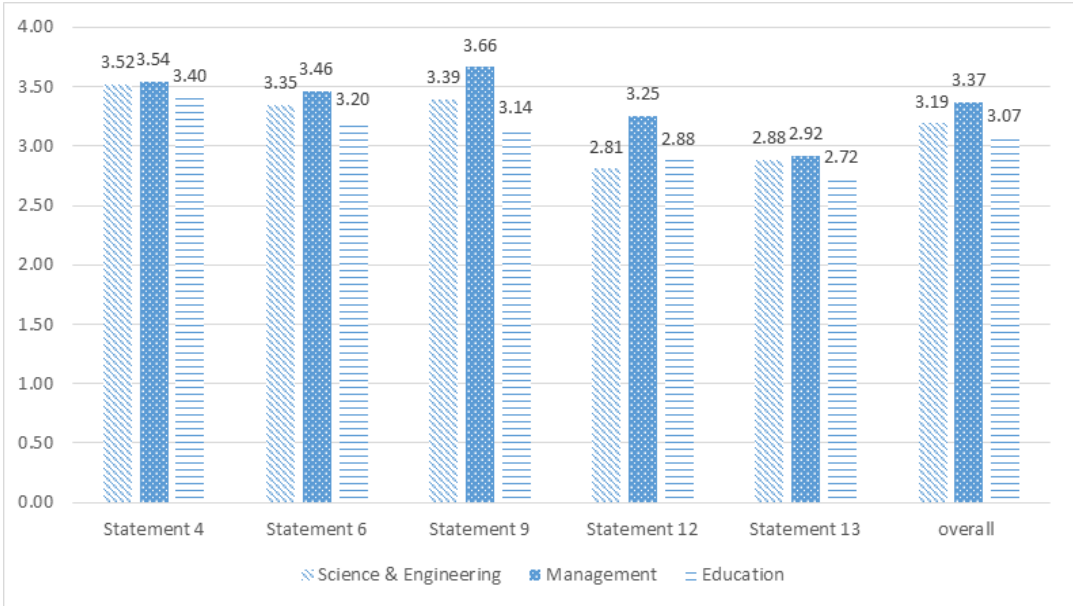
Mean result of online learning systems user-friendly

Statement	Gender		Faculty			Total
	Male	Female	Science & Engineering	Manage-ment	Educa-tion	
4- I prefer using a computer to prepare my lessons.	3.34	3.68	3.52	3.54	3.40	3.49
6- Working and studying with computers is exciting.	3.35	3.35	3.35	3.46	3.20	3.35
9- Online learning systems are useful for self-learning.	3.45	3.36	3.39	3.66	3.14	3.41
12- Using ofonline learning systems is boring.	2.98	2.97	2.81	3.25	2.88	2.98
13- Using computer systems requires a lot of mental effort.	2.76	2.94	2.88	2.92	2.72	2.84
Overall mean Result of Online learning systems Us-er-Friendly attitudes.	3.18	3.26	3.19	3.37	3.07	3.21

Source; Based on data collected by researcher, 2023

Table 7 presents the mean scores of students' attitudes toward the user-friendliness of online learning systems, analyzed by gender and faculty. Female students reported slightly higher overall mean scores (3.26) than male students (3.18), suggesting they found online systems somewhat more user-friendly. Among faculties, Management students showed the highest average score (3.37), indicating greater comfort and engagement with digital platforms, while Education students had the lowest (3.07), reflecting comparatively more challenges. Despite some variation, the overall mean score (3.21) suggests that students generally perceive online learning systems as user-friendly, with positive attitudes toward using computers for learning and preparation.

Figure 6: Mean result of students' attitude towards user friendly activities on the basis of gender



Source: Based on data collected by researcher, 2023

"I prefer using a computer to prepare my lessons." In this statement, the mean score is 3.34 for male students and 3.68 for female students, and the t-test value is 0.444 and the significance level is 0.05. We cannot see a significant difference in the attitudes of male and female students regarding this statement. According to the data, science and engineering students have a mean score of 3.52, management students have a mean score of 3.54, education students have a mean score of 3.40, and the t-test value is 0.842 and the significance level is 0.05. Therefore, we can conclude that there is no significant difference in students' attitudes towards the statement based on faculty. The total mean score of the statement is 3.49 and the standard deviation is 1.33.

"Working and studying with computers is exciting." In this statement, the mean score is 3.35 for male students and 3.35 for female students, and the t-test value is 0.325 and the significance level is 0.05. We cannot see a significant difference in the attitudes of male and female students regarding this statement. According to the data, science and engineering students have a mean score of 3.35, management students have a mean score of 3.46, education students have a mean score of 3.20,

and the t-test value is 0.438 and the significance level is 0.05. So we can conclude that there is no significant difference in students' attitudes towards the statement on the basis of faculty. The total mean score of the statement is 3.35 and the standard deviation is 1.29.

"Online learning systems is useful for self-learning." In this statement, the mean scores are 3.45 for male students and 3.36 for female students, and the t-test value is 0.854, with a significance level of 0.05. We cannot see a significant difference in the attitudes of male and female students regarding this statement. According to the data, science and engineering students have a mean score of 3.75, management students have a mean score of 3.57, education students have a mean score of 3.84, and the t-test value is 0.259, and the significance level is 0.05. Therefore, we can conclude that there is no significant difference in students' attitudes towards the statement based on faculty. The total mean score of the statement is 3.41 and the standard deviation is 1.36.

"Using of online learning systems is boring." In this statement, the mean scores are 2.98 for male students and 2.97 for female students, and the t-test value is 0.099, with a significance level of 0.05. We cannot see a significant difference in the attitudes of male and female students regarding this statement. According to the data, science and engineering students have a mean score of 2.81, management students have a mean score of 3.25, education students have a mean score of 2.88, and the t-test value is 0.018 and the significance level is 0.05. So we can conclude that there is a significant difference in students' attitudes towards the statement on the basis of faculty. The total mean score of the statement is 2.98 and the standard deviation is 1.35.

"Using computer systems require a lot of mental effort." In this statement, the mean score is 3.76 for male students and 2.94 for female students, and the t-test value is 0.422 and the significance level is 0.05. We cannot see a significant difference between male and female students' attitudes on this statement. According to the data, science and engineering students have a mean score of 2.88, management students have a mean score of 2.92, and education students have a mean score of 2.72. The t-test value is 0.575, and the significance level is 0.05. So we can conclude that there is no significant difference in students' attitudes towards the statement on the basis of faculty. The total mean score of the statement is 2.84 and the standard deviation is 1.28.

Doonline learning systems technology used by students are user-friendly? What was the reaction of students towards the use of online learning systems related technologies? Does it affect students' concept about online learning systems? There were five user-friendly statements, of which three were positive and two were negative. On three positive statements, the percentage of agreement is higher, and on two negative statements, the percentage of disagreement is higher. Based on the data, we can conclude that students have a positive attitude towards user-friendly activities. On the basis of the overall percentage, the agree percentage is higher in the user-friendly statement, so the attitudes of the students can be said to be positive. The total mean score is 3.21, which is much higher than the average, and the standard deviation is 0.68. The mean scores for male students and female students are 3.18 and 3.26, respectively. The t-test value is 0.994, and the significance level is 0.05. We cannot see the significant difference between male and female student's attitudes on this theme. According to the data, science and engineering students have a mean score of 3.19, management students have a mean score of 3.37, and education students have a mean score of 3.07. The t-test value is 0.003, and the significance level is 0.05. So we can conclude, there is significant difference in students' attitude towards the theme on the basis of faculty and on the basis of resources students have positive attitude towards online learning systems.

Student Attitudes towards Online learning systems Feedback

To determine the attitude of students toward online learning systems, it is necessary to gather their views and reactions regarding online learning system-related activities. Five statements were proposed to students by the researcher, of which two statements were positive and three statements were negative and the following are the detailed responses of students:

"Using online learning systems increase my creativity." In this statement, 25.50% of students strongly agree, 26% of students agree, 15.75% of students are undecided, 17% of students disagree, and only 15.75% of students strongly disagree with this statement. The chi-square value is 6.84 at the 0.05 level of significance. The total mean score of the statement is 3.29 and the standard deviation is 1.42. It shows that most of the students believe that using online learning systems increases their creativity. It indicates to the researchers that the students have a positive attitude towards online learning systems.

"Online learning systems are a very efficient way of learning." A total of

27% of students strongly agree, 25.75% of students agree, 21.75% of students are undecided, 12.75% of students disagree, and only 12.25% of students strongly disagree with this statement. The chi-square value is 5.61 at the 0.05 level of significance. The total mean score of the statement is 3.43 and the standard deviation is 1.34. It indicates to the researchers that the students have a positive attitude towards online learning systems.

Table 8

Student attitudes towards online learning systems feedback

Statement	S.T.	S.A.	A.	N.	D.A.	S.D.A	Mean	**S.D.**	**χ2test**
2- Using online learning systems increases my creativity.	P	25.50%	26%	15.75%	17%	15.75%	3.29	1.42	6.84
10- Online learning systems are a very efficient way of learning.	P	27%	25.75%	21.75%	12.75%	12.25%	3.43	1.34	5.61
14- Online learning systems have no peripheral benefits.	N	33%	16%	20%	13%	18%	3.18	1.39	4.4
16- Online learning systems reduce quality of knowledge attained.	N	19%	20%	20%	26%	15%	2.9	1.35	3.37
19- I never complete my online learning systems chapter because of notification's distraction.	N	12%	17%	23.50%	22.50%	25%	2.69	1.34	2.31
Average		23.30%	20.95%	20.20%	18.25%	17.20%	3.21		

Source: Based on data collected by researcher, 2023.

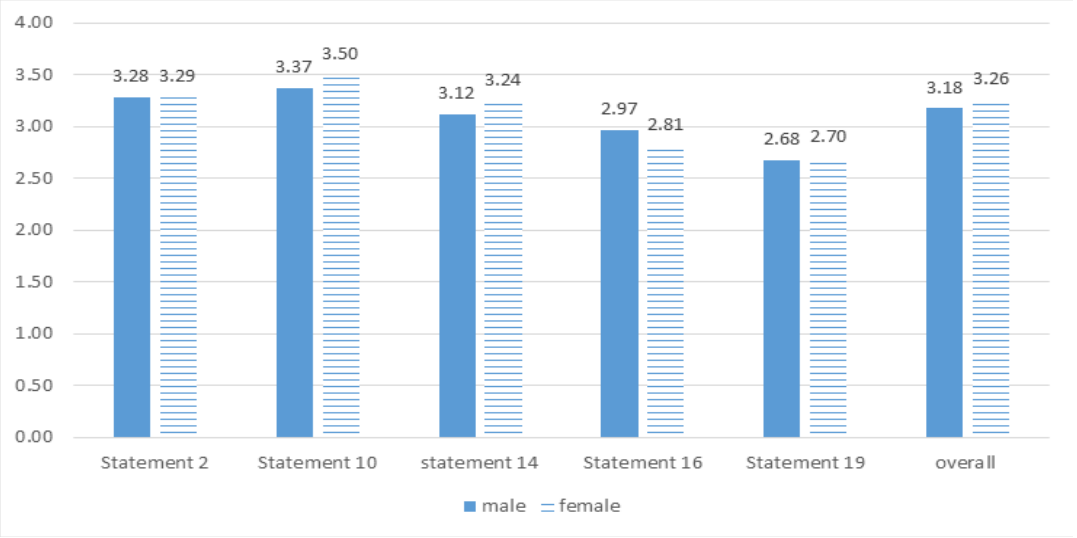
The analysis reveals nuanced students' perceptions regarding potential drawbacks of online learning systems. For the statement "Online learning systems have no peripheral benefits," responses were polarised, with 33% strongly agreeing versus 31% disagreeing (M=3.18, SD=1.39, χ^2=4.4). This significant divergence

($p < 0.05$) suggests substantial disagreement among students about the ancillary benefits of digital learning platforms, potentially reflecting varying experiences with supplemental resources such as discussion forums or multimedia materials (Gillett-Swan, 2017).

Regarding knowledge quality, most students rejected the notion that online learning reduces educational value (41% disagreed, vs. 39% agreed/undecided; M = 2.90, SD = 1.35). This finding aligns with contemporary research demonstrating comparable learning outcomes between online and traditional modalities when properly implemented (Zhang et al., 2021). The chi-square value (3.37) indicates moderate variation in responses, possibly correlating with differences in course design quality across programs.

Digital distractions emerged as a notable concern, with 47.5% of students acknowledging that notifications frequently disrupt their completion of online materials (M = 2.69, SD = 1.34). This substantiates growing literature on the challenges of self-regulation in digital learning environments (Dias et al., 2014). The relatively low mean score and significant dispersion (χ^2=2.31) highlight this as a key area for intervention, suggesting the need for institutional strategies to minimise technological distractions and enhance students' focus (Shakya et al., 2018).

Figure 7: Mean result of students' feedback towards online learning systemson the basis of gender.



Source: Based on data collected by researcher, 2023

Figure 7 presents gender-wise differences in students' feedback on the perceived limitations of online learning systems. While both male and female students expressed mixed views, female students reported slightly higher mean scores on statements related to peripheral benefits and educational value, suggesting a more critical stance. Notably, both genders acknowledged the issue of digital distractions, though male students reflected a slightly lower tolerance toward interruptions from online notifications.

Table 9

Mean result of online learning systems feedback

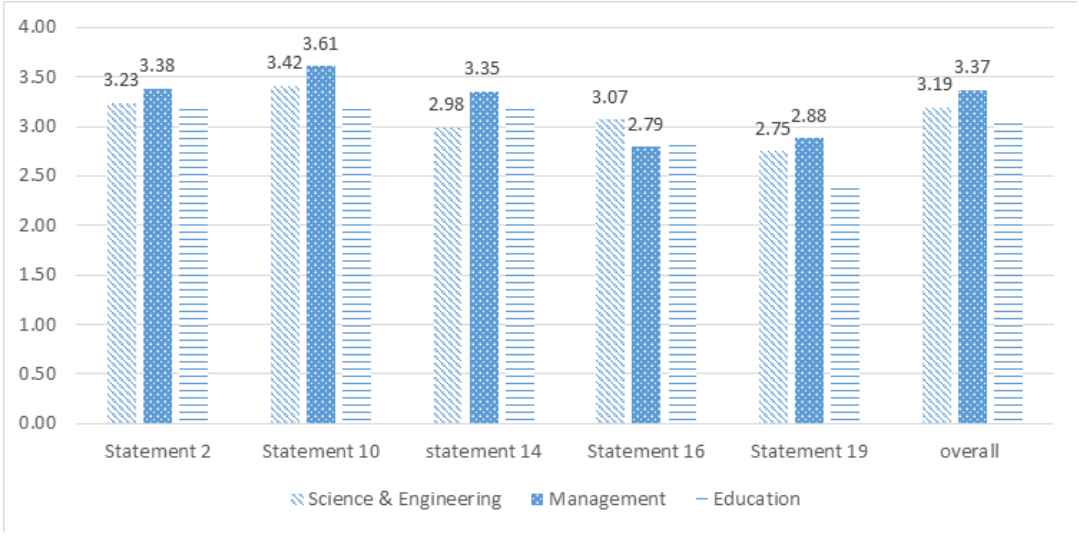
Statement	Gender		Faculty			Total
	Male	Female	Science & Engineering	Management	Education	
2- Using online learning systems increases my creativity.	3.28	3.29	3.23	3.38	3.22	3.29
10- Online learning systemsis a very efficient way of learning.	3.37	3.50	3.42	3.61	3.21	3.43
14- Online learning systemshas no peripheral benefits.	3.12	3.24	2.98	3.35	3.20	3.18
16- Online learning systems reduce quality of knowledge attained.	2.97	2.81	3.07	2.79	2.85	2.90
19- I never complete my online learning systems chapter because of notification's distraction.	2.68	2.70	2.75	2.88	2.37	2.69
Overall mean Result of Online learning systems Feedback	3.18	3.26	3.19	3.37	3.07	3.21

Source: Based on data collected by researcher, 2023.

Table 9 summarizes students' feedback on various aspects of online learning systems by gender and faculty. Female students generally reported slightly higher overall mean scores (3.26) compared to males (3.18), indicating a marginally

more positive perception of online learning's impact on creativity and efficiency. Management students showed the most favorable feedback (3.37), while Education students had the lowest overall mean (3.07), reflecting some faculty-based differences in experience and satisfaction.

Figure 8: Mean result of students' feedback towards online learning systemson the basis of faculty



Source: Based on data collected by researcher, 2023

"Using online learning systems increase my creativity." In this statement, the mean score is 3.28 for male students and 3.29 for female students, and the t-test value is 0.029, and the significance level is 0.05. We can see a significant difference between male and female students' attitudes on this statement. According to the data, science and engineering students have a mean score of 3.23, management students have a mean score of 3.38, education students have a mean score of 3.38, and the t-test value is 0.746 and the significance level is 0.05. So we can conclude that there is no significant difference in students' attitudes towards the statement on the basis of faculty. The total mean score of the statement is 3.29 and the standard deviation is 1.42.

"Online learning systems are a very efficient way of learning." In this statement mean score is 3.37 for male students and 3.50 for female students and t-test value is 0.214 and significance level is 0.05. We cannot see significant difference

between male and female student's attitudes on this statement. According to the data, science and engineering students have mean score of 3.42, management students have mean score of 3.61, education students have mean score of 3.21 students and t-test value is 0.085 and significance level is 0.05. So we can conclude that there is no significant difference in students' attitudes towards the statement on the basis of faculty. The total mean score of the statement is 3.43 and the standard deviation is 1.34.

"Online learning systems have no peripheral benefits." In this statement, the mean score is 3.12 for male students and 3.24 for female students, and the t-test value is 0.110 and the significance level is 0.05. We cannot see significant difference between male and female student's attitudes on this statement. According to the data, science and engineering students have a mean score of 2.98, management students have a mean score of 3.35, education students have a mean score of 3.20, and the t-test value is 0.185 and the significance level is 0.05. So we can conclude that there is no significant difference in students' attitudes towards the statement on the basis of faculty. The total mean score of the statement is 3.18 and the standard deviation is 1.39.

"Online learning systems reduces quality of knowledge attained." In this statement, the mean score is 2.97 for male students and 2.81 for female students, and the t-test value is 0.729, and the significance level is 0.05. We cannot see a significant difference between male and female students' attitudes on this statement. According to the data, science and engineering students have a mean score of 3.07, management students have a mean score of 2.79, education students have a mean score of 2.85, and the t-test value is 0.331, and the significance level is 0.05. Therefore, we can conclude that there is no significant difference in students' attitudes towards the statement based on faculty. The total mean score of the statement is 2.90 and the standard deviation is 1.35.

"I never complete my online learning systems chapter because of notifications' distraction." In this statement, the mean scores are 2.68 for male students and 2.70 for female students, and the t-test value is 0.674, with a significance level of 0.05. We cannot see significant difference between male and female students' attitudes on this statement. According to the data, science and engineering students have a mean score of 2.75, management students have a mean score of 2.88, education students have a mean score of 2.37, and the t-test value is 0.009 and the significance

level is 0.05. Therefore, we can conclude that there is a significant difference in students' attitudes towards the statement based on faculty. The total mean score of the statement is 2.69 and the standard deviation is 1.34.

Feedback plays important role ononline learning systems. There were five feedback-related statements, of which twowere positive and three were negative. The percentage of agreement on the two positive statements is higher. Regarding three negative statements, one statement has a high agree percentage, and the remaining two statements have a high disagree percentage; therefore, we can say that students have a positive attitude towards online learning systems. On the basis of the overall percentage, the agree percentage is higher in the online learning systems feedback statement, so the attitudes of the students can be said to be positive. The total mean score is 3.21, which is significantly higher than the average. The overall mean score of all the feedback-related statements is 3.21, and the standard deviation is 0.68, which means a higher than the average meanscore. The mean score of male students is 3.18, and the mean score of female students is 3.26. The t-test value is 0.994, and the significance level is 0.05. We cannot see the significant difference between male and female student's attitudes on this theme. According to the data, science and engineering students have a mean score of 3.19, management students have a mean score of 3.37, education students have a mean score of 3.07 students and the t-test value is 0.003, and the significance level is 0.05, we can see there is significant difference in students' attitude towards the theme on the basis of faculty. Therefore, we can conclude that, based on feedback, students have a positive attitude towards online learning systems.

Table 10 represents the overall summary of mean attitudes toward online learning systems across four key dimensions,asactivities, resources, user-friendliness, and feedback, categorised by gender and faculty. The results indicate minimal differences between male and female students, with both groups generally showing moderately positive attitudes across all dimensions. Faculty-wise, management students consistently reported slightly higher mean scores, especially in the areas of user-friendliness and feedback, suggesting they may be more comfortable or familiar with online platforms. In contrast, education students had comparatively lower mean scores, indicating a need for further support or training in digital learning environments.

Table 10

Summary of mean attitudes toward online learning systems by gender and faculty

Domain	Male	Female	Science & Eng.	Management
Activities	2.51	2.57	2.52	2.59
Resources	3.15	3.16	3.18	3.25
User-Friendliness	3.18	3.26	3.19	3.37
Feedback	3.18	3.26	3.19	3.37

Source: Based on data collected by researcher, 2023.

One limitation of this study is the relatively low reliability coefficient (0.63) obtained from the pilot test using the split-half method. While this value indicates moderate internal consistency, it falls slightly below the commonly accepted threshold for internal consistency. Due to time and resource constraints, a larger pilot sample and further validation methods such as Cronbach's alpha or factor analysis could not be employed. Future studies are encouraged to conduct more extensive instrument validation to enhance the reliability and generalizability of the findings.

Conclusion

Graduate students from Kathmandu Valley demonstrated a predominantly positive attitude toward online learning systems. Their potential to boost study performance, promote self-learning, and provide economical, flexible educational opportunities has been highly regarded. To this effect, we have several challenges that need to be addressed, such as unstable internet connectivity, lack of digital skills, insufficient infrastructure, and distractions. Interventions could be, for example, incorporating pedagogy of e-learning in the curriculum; conducting faculty development programs; and providing technical support to ensure an inclusive and quality online learning environment.

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