



Post-COVID ICT Adoption and Future Prospects in Higher Education

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Abstract

The COVID-19 pandemic accelerated the use of Information and Communication Technologies (ICTs) in higher education and transformed digital tools from supplementary resources into important mechanisms for educational continuity. This study examines the post-COVID prospects of ICT adoption among students sampled from across Kathmandu Valley, Nepal. A descriptive cross-sectional survey design was used with responses from 54 students selected from different educational settings in the Valley through a random-selection approach. The analysis focuses on perceived benefits, ICT tools used during the pandemic, expected continuity of ICT use, the preferred role of technology in post-COVID education, the reported level of ICT integration, and anticipated future directions. Increased flexibility was the most frequently reported benefit (20 of 54; 37.0%), followed by enhanced access to educational resources (12; 22.2%). Video-conferencing platforms were the dominant tools used during the pandemic (44; 81.5%). A substantial majority of respondents (40; 74.1%) believed that increased ICT use would become the new normal, while more than half (28; 51.9%) identified hybrid learning as the most important future role of ICT. Reported adoption remained transitional: 50.0% indicated only some integration, compared with 28.8% reporting extensive integration and 11.5% reporting full integration. Future expectations were distributed across online/blended learning, virtual and augmented reality, and deeper classroom integration. The findings indicate that post-COVID ICT use among students in Kathmandu Valley has moved beyond emergency remote learning toward a sustained but uneven model of digital and hybrid education.

Keywords: ICT in education, post-COVID education, higher education, hybrid learning, digital learning, technology adoption, Kathmandu Valley, Nepal

1. Introduction

The COVID-19 pandemic produced an abrupt disruption of conventional education and forced higher education systems worldwide to adopt remote and digitally mediated forms of teaching. More recent evidence shows that the legacy of this shift has persisted through blended learning, digital course platforms, online collaboration, and technology-supported assessment. In Nepal, post-pandemic studies continue to report both strong student acceptance of digital learning and persistent concerns about infrastructure, instructional support, digital skills, and the quality of online interaction ^[1, 5].

The post-pandemic period therefore raises a different question from the emergency phase: which digital practices should remain embedded in routine higher education, and under what conditions. Recent studies of blended learning emphasize that continued adoption depends on perceived usefulness, facilitating conditions, learner confidence, course design, and sustained institutional support rather than technology availability alone ^[6, 9].

In Nepal, recent research conducted in 2024 provides a clearer post-pandemic picture. Studies involving university students in Kathmandu Valley and other Nepalese higher education settings report that online and blended learning can improve flexibility and access, but effectiveness is strongly shaped by internet quality, instructor readiness, digital literacy, course organization, and technical support ^[1, 5]. These findings make Kathmandu Valley a relevant setting for examining whether students now perceive ICT as a durable component of higher education rather than only as an emergency response.

The broader research on which this article is based investigated both the prospects and challenges of ICT implementation among students. To produce a focused publishable article, the present paper concentrates specifically on the prospect and adoption dimension: the benefits students associate with ICT, the technologies they used, the extent to which ICT is currently integrated into their learning environments, and the forms of digital education they expect to continue.

Accordingly, this article asks: (1) what benefits of ICT are most strongly perceived by students across Kathmandu Valley; (2) which ICT tools dominated their pandemic learning experience; (3) whether students expect ICT use to persist in the long term; (4) what role they expect ICT to play in future teaching and learning; and (5) how they perceive the current level and future direction of ICT integration.

1.1. Contributions

This paper makes four main contributions:

- It provides survey evidence on post-COVID ICT adoption among students sampled from across Kathmandu Valley, Nepal.
- It separates the prospect and adoption dimension from the broader challenge dimension, allowing a clearer interpretation of how students value flexibility, access, collaboration, and hybrid learning.
- It documents the gap between positive expectations for continued ICT use and the still-partial level of institutional integration reported by respondents.
- It identifies the forms of digital learning that students expect to expand, including blended learning, deeper classroom integration, and immersive technologies.

2. Literature Review

2.1. ICT and the Transformation of Teaching and Learning

ICT in education encompasses computers, mobile devices, internet services, learning management systems, videoconferencing, online collaboration tools, digital assessment systems, and multimedia resources. Recent post-pandemic literature has shifted from asking whether technology can support learning to examining how digital and blended environments can be integrated sustainably into routine higher education. Contemporary studies indicate that the effectiveness of such environments depends on course design, instructor support, student self-efficacy, access conditions, and the fit between technology and learning activities [6, 10].

The transition from exclusively physical learning spaces to digitally supported environments can increase flexibility, broaden access to resources, and support asynchronous interaction. However, recent evidence shows that positive learning outcomes are not automatic. Students' acceptance and satisfaction are influenced by platform usability, instructor facilitation, feedback, digital confidence, and the quality of blended-course organization [2, 4, 6, 8].

2.2. From Emergency Remote Learning to Post-COVID Hybrid Education

During the pandemic, institutions adopted videoconferencing, digital course spaces, shared documents, and online communication at unprecedented speed. Current research increasingly distinguishes this emergency remote

teaching from deliberately designed blended learning. Post-COVID blended learning is more structured: it combines face-to-face teaching with purposeful online activities, flexible access to materials, digital collaboration, and technology-supported assessment [1, 6, 9].

One important post-pandemic direction is blended or hybrid learning. Recent higher-education research published in 2024 identifies blended learning as a sustained pedagogical model rather than a temporary crisis arrangement. Adoption is strengthened when students perceive clear benefits, instructors are prepared to facilitate digital activities, and institutions provide reliable systems and support [6, 9].

2.3. ICT Integration in the Nepalese Education Context

Nepal's higher education sector has continued to expand its use of ICT after the pandemic, but recent studies show uneven implementation. Research from Kathmandu and other Nepalese university settings reports improved access, flexibility, and student familiarity with online learning alongside persistent gaps in connectivity, digital skills, instructor support, and systematic course design [1, 5].

These recent Nepal-focused findings suggest that the key post-COVID issue is no longer simple exposure to technology. Instead, the challenge is converting widespread familiarity with video conferencing and digital resources into sustainable, pedagogically coherent, and equitable learning systems. Evidence from Kathmandu Valley is particularly useful because students in the Valley experienced rapid digital expansion while still reporting variation in access, satisfaction, and instructional quality [2, 5].

2.4. Research Gap

Recent Nepal-focused literature has documented barriers, technology acceptance, student satisfaction, and emergency remote teaching experiences. However, fewer studies have simultaneously examined perceived benefits, tools used, expected continuity, preferred post-COVID roles, current integration, and future technological directions among a small cross-sectional student sample drawn across Kathmandu Valley. This article addresses that gap through a focused descriptive analysis of post-COVID ICT prospects.

3. Methodology

3.1. Study Design and Setting

This study used a descriptive cross-sectional survey design. The research setting was Kathmandu Valley, Nepal, and the target population comprised students who had experienced ICT-supported learning during and after the COVID-19 disruption. The present article analyzes the quantitative survey items related to ICT prospects, adoption, and future expectations.

3.2. Participants and Sampling

The study sample consisted of 54 students drawn from different educational settings across Kathmandu Valley. Participants were selected using a random-selection approach across the Valley. Students were informed about the purpose and nature of the study before participation, and consent was obtained. The sample included 28 male respondents (51.9%) and 26 female respondents (48.1%).

3.3. Data Collection Instrument

Primary data were collected using a structured questionnaire. The instrument included demographic questions and items on

the prospects and challenges of ICT in education. For the prospect-focused analysis in this article, the main variables were perceived benefits of ICT, ICT tools used during the pandemic, beliefs about whether increased ICT use will continue, the expected role of ICT in post-COVID education, perceived level of ICT integration, and expectations regarding the future evolution of ICT in education.

3.4. Data Analysis and Consistency Checks

The analysis is descriptive and reports frequencies and percentages. No inferential statistical tests were applied because the objective was to summarize the perceptions of the 54 respondents. Reported frequencies were treated as the primary numerical source. Where narrative percentages differed from the corresponding frequencies because of rounding or internal inconsistency, percentages were recalculated directly from the frequencies using $N = 54$. Percentages available only from figure-based results were

retained as reported. This procedure improves internal consistency without introducing new observations.

4. Results and Analysis

4.1. Perceived Benefits of ICT in Post-COVID Education

Respondents identified several benefits of continued ICT use after the pandemic. Increased flexibility in learning was the most frequently selected benefit, reported by 20 of 54 respondents (37.0%). Enhanced access to educational resources was selected by 12 respondents (22.2%), while improved collaboration and communication and expanded learning opportunities beyond the classroom were each selected by 10 respondents (18.5%). Two respondents (3.7%) selected all of the listed benefits. These findings indicate that the strongest perceived value of ICT was not a single technology but the flexibility it introduced into how and when learning could take place.

Table 1: Perceived Benefits of ICT in Education Post-COVID

Perceived benefit	Frequency	Percentage
Increased flexibility in learning	20	37.0%
Enhanced access to educational resources	12	22.2%
Improved collaboration and communication	10	18.5%
Expanded learning opportunities beyond the classroom	10	18.5%
All of the above	2	3.7%

4.2. ICT Tools Used During the COVID-19 Pandemic

The pandemic learning experience was dominated by video-conferencing platforms. Forty-four respondents (81.5%) reported the use of platforms such as Zoom or Microsoft Teams, far exceeding the use of learning management systems, online collaboration tools, or specialized educational applications. This concentration suggests that the

first phase of digital adoption in the respondents was primarily synchronous and communication-oriented. Learning management systems were used by only two respondents (3.7%), while three (5.6%) reported collaboration tools and four (7.4%) reported educational applications or software.

Table 2: ICT Tools Used for Education During the COVID-19 Pandemic

ICT tool	Frequency	Percentage
Video conferencing platforms (e.g., Zoom, Microsoft Teams)	44	81.5%
Learning management systems (e.g., Canvas, Moodle)	2	3.7%
Online collaboration tools (e.g., Google Docs, Microsoft OneDrive)	3	5.6%
Educational apps or software	4	7.4%
All of the above	1	1.9%

4.3. Expected Continuity and Future Role of ICT

A strong majority of respondents expected the increased use of ICT to persist. Forty respondents (74.1%) believed that ICT would become the new normal in education, compared with eight (14.8%) who expected a return to pre-COVID levels and six (11.1%) who were unsure. This indicates that the pandemic experience was widely perceived as producing a durable shift rather than a temporary interruption. When asked about the most significant future role of ICT, 28 respondents (51.9%) selected support for a hybrid learning

model combining remote and in-person activities. Thirteen respondents (24.1%) expected ICT to become increasingly integrated into teaching and learning methods, eight (14.8%) emphasized personalized and adaptive learning, and five (9.3%) highlighted global collaboration and networking. The dominance of hybrid learning is important because it suggests that students did not necessarily prefer a fully online model; rather, they favored retaining the flexibility of digital tools alongside physical classroom interaction.

Table 3: Expected Role of ICT in Post-COVID Education

Expected role	Frequency	Percentage
Increasing integration into teaching and learning methods	13	24.1%
Supporting a hybrid learning model	28	51.9%
Facilitating personalized and adaptive learning	8	14.8%
Fostering global collaboration and networking	5	9.3%

4.4. Reported Level of Institutional ICT Integration

Students reported that ICT integration in their educational institution was present but uneven. Half of respondents

described the level as “some integration.” A further 28.8% reported extensive integration and 11.5% reported full integration, while 9.6% described only minimal integration.

Taken together, the results show that ICT had moved beyond marginal use for most respondents, but educational institutions had not yet reached a uniformly mature level of digital integration. The 50.0% concentration in the “some

integration” category is especially important: it places educational institutions in a transitional stage between emergency adoption and systematic integration.

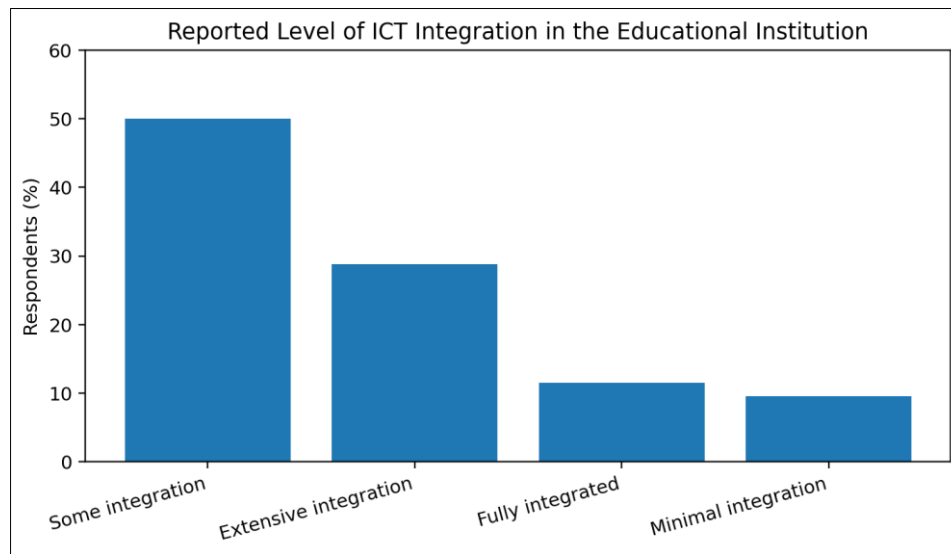


Fig 1: Reported Level of ICT Integration in the Educational Institution

4.5. Future Perspectives on ICT in Education

Respondents also expressed expectations about how ICT may evolve. Sixteen respondents (29.6%) expected increased use of virtual and augmented reality tools, and another 16 (29.6%) expected increased use of online and blended

learning. Fifteen respondents (27.8%) anticipated more extensive classroom integration of ICT, while seven (13.0%) emphasized greater personalization. These findings indicate that students associate the future of ICT not only with online delivery but also with deeper classroom integration and emerging learning technologies.

Table 4: Expected Future Directions of ICT in Education

Future direction	Frequency	Percentage
More extensive classroom integration of ICT	15	27.8%
Increased use of virtual and augmented reality	16	29.6%
Greater emphasis on personalized learning	7	13.0%
Increased use of online and blended learning	16	29.6%

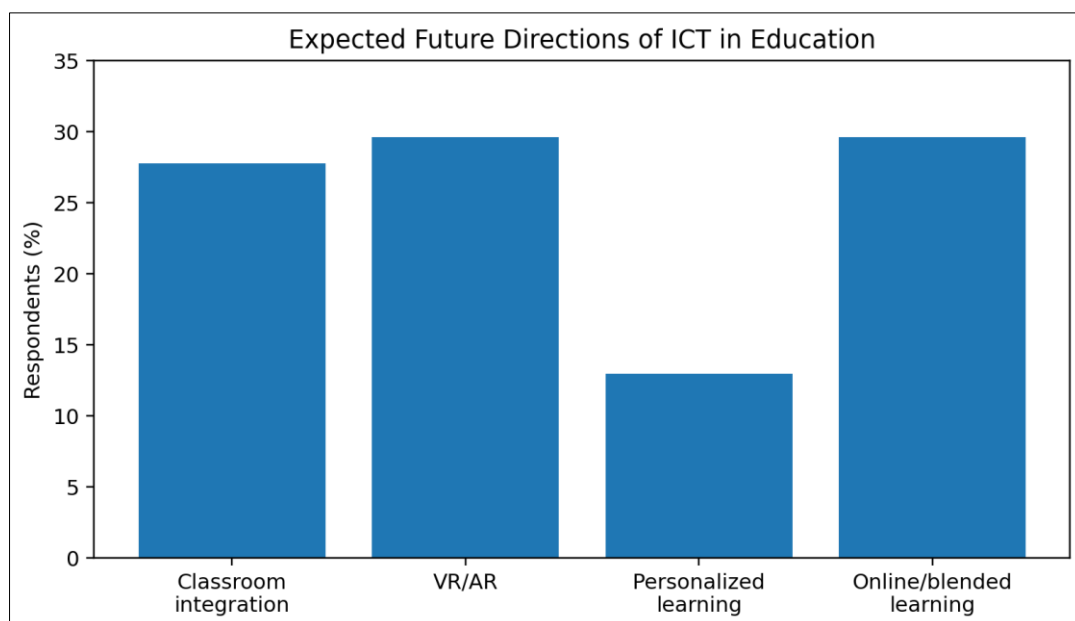


Fig 2: Expected Future Directions of ICT in Education

5. Discussion

5.1. ICT Has Shifted from Emergency Tool to Sustained Educational Component

The strongest overall pattern in the findings is the expectation of continuity. Nearly three-quarters of respondents believed that increased ICT use would become the new normal, indicating that the pandemic produced more than a temporary substitution of online classes for classroom teaching. This interpretation is reinforced by the high reported use of video-conferencing platforms during the pandemic and by the expectation that ICT will continue to influence future teaching methods. The findings are consistent with literature describing COVID-19 as an accelerant of digital educational practices rather than the origin of those practices [2, 5].

At the same time, the results should not be interpreted as evidence that students prefer fully online education. The most frequently selected future role was hybrid learning, chosen by 51.9% of respondents. This points toward a blended post-COVID trajectory in which face-to-face teaching remains important, but digital tools are retained for flexibility, resource access, communication, and supplementary learning. Such a result aligns with the idea that post-pandemic educational design should move beyond emergency remote teaching and toward intentionally structured combinations of physical and digital learning.

5.2. Flexibility Is the Central Perceived Benefit

Flexibility was the most frequently identified benefit of ICT. This is meaningful in higher education because students often need to coordinate academic responsibilities with work, family, commuting, and other commitments. Digital access can reduce dependence on a single time and place for learning and can make educational resources easier to revisit. Recent Nepalese studies similarly emphasize flexibility and access as important strengths of digitally supported learning, while also showing that these benefits depend on the quality of course design, internet access, and instructional support [2, 5]. Access to educational resources was the second most frequently selected benefit, while collaboration and expanded learning opportunities were also reported by substantial groups. Together, these findings support the broader literature that treats ICT as a means of extending educational access and interaction beyond the physical classroom. However, because the survey required respondents to select a principal benefit, the reported percentages should not be interpreted as indicating that flexibility excludes the other advantages. Rather, they identify which benefit respondents considered most salient.

5.3. Synchronous Platforms Dominated Initial Digital Adoption

The overwhelming use of video-conferencing platforms (81.5%) shows that pandemic-era ICT adoption among respondents was centered on synchronous virtual classes. By comparison, structured learning management systems and online collaboration tools were used much less frequently. This pattern is consistent with emergency remote teaching, where institutions often prioritized rapid continuity through live online classes before developing more integrated digital learning ecosystems [1, 12].

A mature digital learning ecosystem generally requires more than a videoconferencing application. It involves organized access to learning materials, communication channels, assessment, feedback, collaboration, and technical support.

The low reported use of LMS platforms in the respondents therefore indicates that the next stage of ICT integration should focus on learning design and platform integration rather than simply maintaining the tools adopted during the emergency.

5.4. Positive Expectations Coexist with Incomplete Institutional Integration

The contrast between students' future expectations and their assessment of current institutional integration is one of the most important findings. While 74.1% expected ICT use to persist, 50.0% described current integration as only "some integration." Extensive and full integration together accounted for about 40% of responses, indicating meaningful progress but not uniform adoption. This gap suggests that student acceptance may be developing faster than institutional systems and pedagogical practice.

The result is consistent with recent Nepal-focused studies, which report positive student acceptance of digital learning alongside uneven infrastructure, instructor preparedness, and support systems [1, 5, 10, 12]. Positive perceptions of usefulness can encourage continued ICT use, but sustainable integration still depends on the learning environment, course organization, and institutional support available to students.

5.5. Future Expectations Extend Beyond Conventional Online Classes

The future-oriented responses are notable because online/blended learning and virtual or augmented reality received similar levels of interest, followed closely by deeper classroom integration. This suggests that respondents associate the future of ICT not merely with continuing Zoom-style online classes but with broader technological evolution. However, these responses represent expectations rather than evidence of current availability or readiness. In a context where even basic integration remains uneven, immersive technologies such as VR and AR should be interpreted as aspirational directions rather than immediate institutional priorities.

A practical progression would therefore be to consolidate foundational digital systems first: reliable connectivity, organized digital course spaces, consistent instructor use, accessible learning materials, and well-designed blended learning. More advanced tools can then be evaluated where they add clear pedagogical value. Recent blended-learning research likewise emphasizes the importance of combining technology adoption with instructional design, learner support, and facilitating conditions [6, 9].

5.6. Relevance to Kathmandu Valley Higher Education

Because the participants were sampled across Kathmandu Valley, the findings are most relevant to the Valley's higher-education context and should not be generalized directly to all students in Nepal. Kathmandu Valley contains a dense and diverse higher-education environment with substantial exposure to digital platforms, but student experiences can still vary according to connectivity, affordability, institutional resources, and digital literacy. The results are therefore useful as exploratory evidence of post-COVID ICT expectations in an urban Nepalese setting.

5.7. Study Limitations

Several limitations should be considered. First, the study is based on a relatively small sample of 54 students from

Kathmandu Valley, so the findings are exploratory and not statistically representative of Nepalese higher education as a whole. Second, the results are based on self-reported perceptions rather than direct observation of platform use or learning outcomes. Third, the study reflects a specific post-COVID period and student expectations may change as technologies and institutional practices evolve. Fourth, the analysis is primarily descriptive and does not test causal relationships between ICT use and educational performance. Finally, some response categories in the original dataset contained minor inconsistencies between recorded frequencies and percentages; where frequencies were available, percentages in this article were recalculated using $N = 54$.

6. Conclusion

This study examined the prospects of ICT adoption in post-COVID higher education through the experiences of 54 students sampled across Kathmandu Valley. The findings show that ICT has acquired a durable role in students' expectations of education. Flexibility emerged as the most salient perceived benefit, video conferencing dominated the pandemic learning experience, and 74.1% of respondents expected increased ICT use to become the new normal. Most importantly, 51.9% identified hybrid learning as the primary future role of ICT, indicating a preference for combining digital flexibility with in-person education rather than replacing the classroom entirely.

The results also reveal an important implementation gap. Although students express strong expectations for continued digital learning, half describe current ICT integration as only partial. This suggests that the post-COVID phase should focus on moving from ad hoc technology use toward systematic digital learning design. Priorities include consistent digital course organization, effective blended-learning practice, broader use of learning management and collaboration platforms, instructor development, and reliable technical support.

Within the limits of a small Kathmandu Valley survey, the evidence indicates that post-COVID ICT adoption is best understood as an ongoing transition. The pandemic established familiarity and perceived usefulness; the next phase is to convert that experience into sustainable, purposeful, and inclusive educational practice. Future research should use larger multi-institutional samples, compare different student groups and locations, and examine how perceptions relate to measurable learning outcomes and actual patterns of technology use.

References

1. R. K. Baral, L. Bhatta, and S. N. Ghimire, "Emergency remote teaching in Nepali higher education institutions during COVID-19," *Distance Education*, vol. 45, no. 1, pp. 6–22, 2024, doi: 10.1080/01587919.2024.2303490.
2. A. Gyawali and D. P. Subedi, "Satisfaction of management students towards online classes during COVID-19 pandemic in T.U.," *The Nepalese Management Review*, vol. 20, no. 1, pp. 1–14, 2024, doi: 10.3126/tnmr.v20i1.64735.
3. G. Malla, "Nepalese students' perception towards the online learning during COVID-19 lockdown phase," *Swarnadwar*, vol. 4, no. 1, pp. 58–70, 2024, doi: 10.3126/swarnadwar.v4i1.71152.
4. B. Adhikari, P. Lawaju, K. Adhikari, and S. Bohaju, "Graduate student's perception on effectiveness of virtual education during COVID-19: Evidence from structural equation modelling in Nepal," *Quest Journal of Management and Social Sciences*, vol. 6, no. 2, pp. 360–379, 2024, doi: 10.3126/qjmss.v6i2.69105.
5. G. K. Sah, "Digital learning, mediating effect of instructor facility on student satisfaction at universities," *Journal of Digital Learning and Education*, vol. 4, no. 3, pp. 237–256, 2024, doi: 10.52562/jdle.v4i3.1345.
6. A. Istenič, "Blended learning in higher education: the integrated and distributed model and a thematic analysis," *Discover Education*, vol. 3, art. 165, 2024, doi: 10.1007/s44217-024-00239-y.
7. F. Hamad, A. Shehata, and N. Al Hosni, "Predictors of blended learning adoption in higher education institutions in Oman: theory of planned behavior," *International Journal of Educational Technology in Higher Education*, vol. 21, art. 13, 2024, doi: 10.1186/s41239-024-00443-8.
8. B. Anthony Jnr, "Examining blended learning adoption towards improving performance in institutions of higher education," *Technology, Knowledge and Learning*, vol. 29, pp. 1401–1435, 2024, doi: 10.1007/s10758-023-09712-3.
9. C. V. Harper, L. M. McCormick, and L. Marron, "Face-to-face vs. blended learning in higher education: a quantitative analysis of biological science student outcomes," *International Journal of Educational Technology in Higher Education*, vol. 21, art. 2, 2024, doi: 10.1186/s41239-023-00435-0.
10. S. Pokhrel and P. Acharya, "Factors influencing university students' behavioral intention and use of eLearning in Kathmandu Valley," *Journal of Advances in Education and Philosophy*, vol. 8, no. 5, pp. 364–376, 2024, doi: 10.36348/jaep.2024.v08i05.005.
11. T. Acharya and G. K. Dhungana, "Impact of technology in classrooms in the colleges of Kathmandu: Challenges and policy recommendations," *International Journal of Higher Education*, vol. 13, no. 4, p. 10, 2024, doi: 10.5430/ijhe.v13n4p10.
12. Y. N. Adhikari and K. Rana, "Sustainability challenges of universities' online learning practices," *International Journal of Technology in Education and Science*, vol. 8, no. 3, pp. 430–446, 2024, doi: 10.46328/ijtes.558.

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