RESEARCH ARTICLE

Lessons Learned from Online Cheating during COVID-19: Implications for Nepali Higher Education Institutions

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Abstract: This article examines Nepali higher education (HE) teachers' and students' experiences and perceptions of online exams and students' cheating on online assessments during the COVID-19 pandemic, when HE course cycles–including assessments–were conducted online. The study data were collected using semi-structured interviews with HE teachers and students. The study findings illustrate that while both teachers and students expressed positive perceptions of online exams, the increasing prevalence of cheating on online assessments imposed an added layer of challenges to academic integrity and assessment validity for Nepali HEIs in the wake of the COVID-19 pandemic. The findings offer new insights into the existing body of knowledge on academic dishonesty in Nepal and reveal significant differences between teachers' and students' attitudes towards proctored online exams, as well as the underlying reasons behind students' academic misconduct. We argue that the validity of assessments during the pandemic was more questionable than cheating on online exams itself.

Keywords: COVID-19, online cheating, academic dishonesty, higher education, Nepal

1 Introduction

In early 2020, when the COVID-19 pandemic imposed prolonged health threats, higher education institutions (HEIs) worldwide were forced to move their in-person academic activities to online delivery as an emergency response mechanism (Baral et al., 2024; Slade et al., 2021). In particular, the pandemic-induced university course cycle, such as student enrolment, teaching and learning, and assessment practices, in some forms, continued with remote delivery for almost 2 years (Almossa & Alzahrani, 2022; Ghimire et al., 2022; Baral, 2023; Karakose et al., 2021). More importantly, since it was entirely unlikely to conduct traditional summative assessments, most notably in-person invigilated exams during the pandemic, many universities around the world shifted to online exams with certain measures such as remote proctoring software and available online conferencing tools (*e.g.* Zoom, Google Meet). While the sudden and rapid shift to emergency remote delivery brought about significant disruptions to the functioning of HE systems, safeguarding both academic integrity and assessment validity was one of the biggest challenges for HEIs (Eaton, 2020; Roe et al., 2023). Research has documented that academic misconduct, such as exam cheating, plagiarism, contract cheating, and other forms of assessment fraud, which had already been a significant concern in higher education (HE) systems (Ghimire et al., 2023, 2024), was further aggravated in the wake of COVID-19 pandemic (Hollis, 2024; Navidinia et al., 2024; Smith et al., 2022). Numerous reports indicate that since administrators and educators were forced to keep their business as usual under pressure during the pandemic, the mechanism they developed for remote teaching and assessment practices without adequate preparation consequently led to students' increased cheating behaviors (Lee & Fanguy, 2022). While research has been conducted on online exam cheating in countries such as the United States and Australia, most of the studies have primarily focused on cheating behaviors that took place in normal situations. Moreover, most studies focused on online cheating behaviors, particularly centered around students' self-reported narratives (Navidinia et al., 2024; Noorbehbahani et al., 2022). Although assessment fraud is not an entirely new phenomenon, limited knowledge surrounding the exacerbation of cheating in online environments warrants further examination (Hancock et al., 2022; Nicola-Richmond et al., 2023).

Within the South Asian context, while much research has focused on either the effectiveness of emergency remote teaching or the challenges faced by teachers and students due to a lack of

technological preparedness on the part of HEIs, teachers and students amidst the COVID-19 pandemic, a limited body of research has delved into online exams and cheating behaviors (Abeywickrama & Thasneen, 2022; Dayal, 2023; Tahsin et al., 2022). More importantly, in technologically under-resourced countries like Nepal, where online exams were entirely uncharted territory before the pandemic, it is crucial to document both teachers' and students' experiences and attitudes towards online exams and underlying factors associated with online exam cheating to broadly understand the extent and severity of online cheating as emerging challenges of assessment fraud. In addition, exploring these issues is equally important to critically reflect on the validity and effectiveness of online assessment practices during difficult times like the COVID-19 pandemic. With this rationale in mind, this study addresses three major questions:

(1) What are Nepali university teachers' and students' experiences and perceptions of online exams?

(2) How do Nepali university teachers and students perceive cheating on online exams?

(3) In teachers' and students' experiences, what factors have led to online exam cheating and what are the ways to deter them within Nepali HEIs?

2 Review of literature

2.1 Cheating as violation of academic integrity, its factors, and deterrent mechanisms

Academic integrity is broadly defined as a commitment to moral behaviors that fundamentally constitute the values of honesty, trust, fairness, respect, responsibility, and courage in academic activities, most notably in learning, teaching, research, and assessment practices (International Center for Academic Integrity, 2021). In contrast, academic integrity scholars emphasize that the violation of these fundamental moral values in any form can be conceptualized as academic dishonesty, including cheating on assessments (Davis et al., 2009; Ives & Giukin, 2019). The intentional act of cheating through unfair means, such as accessing prohibited information and materials and taking assistance from other individuals, including examinees and third parties, whether in offline or online environments, is referred to as moral wrongness in educational systems (Barnhardt, 2015). However, assessment scholars like Dawson et al. (2024) view that cheating deteriorates the pragmatic value of assessment validity as such behaviors not only rob students of learning opportunities but also compromise and prevent them from achieving learning outcomes, particularly mastering skills, knowledge, and capabilities that HE envisions.

Studies have demonstrated that diverse forms of academic dishonesty, such as assessment fraud (cheating on exams, plagiarism, contract cheating, and file sharing, among others), in particular, continue to plague HE systems worldwide (McCabe, 2024). In the context of the COVID-19 pandemic, some students reported that there were no significant differences in online cheating compared to face-to-face exams before the pandemic, whereas teachers held the opposite views since they believed cheating was more likely in online assessments as opposed to onsite exams (Amzalag et al., 2021; Reedy et al., 2021). Surprisingly, other studies have produced largely worrisome results, with more and more students normalizing academic dishonesty and reporting an increased frequency in cheating practices, including first-time cheating, in online assessments during the pandemic (Henderson et al., 2022; Ives & Cazan, 2023; Janke et al., 2021; Jenkins et al., 2022; Walsh et al., 2021). For example, in a study conducted among 214 undergraduate psychology students (Jenkins et al., 2022), 74.8% of students reported cheating online across various types of graded materials (exams, quizzes, homework, and project/paper), whereas 46% of students reported cheating for the first time due to increased stress and pressure caused by the unprecedented circumstances in the wake of the COVID-19 pandemic.

Although there is no straightforward explanation for what determines students' temptation to cheat, a plethora of research has broadly documented some commonalities in reasons why students continue to engage in academic dishonesty. For example, scholars like Yang et al. (2013), Waltzer and Dahl (2023), and Ghimire et al. (2024) have highlighted that students' perceptions about cheating, peer influence, naturalization of their cheating behaviors, lack of preparation for the exam, and the fear of failing, along with increased stress and pressure to achieve or compete for higher grades, are key drivers of academic cheating. Other studies have shown that students' attitudes toward cheating, exam conditions, and personality traits can significantly affect students' cheating behaviors (Henderson et al., 2022; Yu et al., 2017). Noorbehbahani et al. (2022), in their review of 58 research papers published from 2010 to

2021, concluded that students cheating on online exams can be associated with four major factors—teacher-related (unfair favoritism for students, low interest in students' learning, poor pedagogical styles), institutional (weak cheating policies and enforcement, lack of proper supervision), internal (unwillingness to follow good practices, low value placed on knowledge and learning), and environmental (fear of falling behind academically compared to peers, pressure to achieve high grades, technological advancements).

Additionally, studies conducted in the context of online assessment during the COVID-19 pandemic, to a certain extent, have produced similar findings. These factors involved learning difficulties and learning loss, students' unwillingness to fail, perceived benefits of cheating (Amzalag et al., 2021), perceived ease and opportunity to cheat, lack of proper supervision (Newton & Essex, 2023; Reedy et al., 2021), assumption of their peers cheating more frequently online (Roe et al., 2023; Walsh et al., 2021), and psychological stresses during the pandemic (Ives & Cazan, 2023; Janke et al., 2021; Jenkins et al., 2022).

Existing knowledge on academic dishonesty suggests that teachers and students continue to express their concerns that exam cheating is a serious violation of moral behaviors in education systems, which not only deteriorates HE credibility (Ghimire et al., 2024; McCabe, 2024) but also adversely affects the capability of the future workforce and their perception of workplace misconduct (Mulisa & Ebessa, 2021). However, how faculties view handling cheating as a burdensome process (Coren, 2011; Keith-Spiegel et al., 1998; MacLeod & Eaton, 2020) and how students rationalize cheating as an effort that yields more benefits than costs have persistently imposed challenges to maintaining academic integrity in HE systems (Amzalag et al., 2021; Chala, 2021; Ghimire et al., 2024).

In light of research findings that offer insights into students' temptation to cheat, attitudes toward cheating, and factors affecting students' cheating behaviors whether in offline or online environments, scholars have continuously recommended some major strategies as impactful deterrents towards exam cheating. These anti-cheating strategies broadly entail improving monitoring mechanisms (Gudiño Paredes et al., 2021; Nugroho et al., 2023), implementing honor codes (Tatum, 2022), designing valid assessments, disseminating clear instructions regarding what counts as cheating and compromises assessment validity (Dawson et al., 2024), and imposing severe punishments as liabilities (Chirikov et al., 2019). More notably, concerning online exam, scholars have proposed implementing an effective proctoring system as an assessment security design within learning management systems to verify the users, lockdown browsers, and automatically counter students' potential cheating behaviors (Gudiño Paredes et al., 2021; Nugroho et al., 2023). However, it is interesting to note that there is a lack of evidence in support of the efficacy and effectiveness of these anti-cheating strategies. In this regard, studies have raised concerns not only about the ineffectiveness of anti-cheating online proctoring systems in detecting and reducing cheating behaviors (Bergmans et al., 2021; Burgess et al., 2022; Dawson, 2024) but also about their questionable usage since such proctoring systems and technologies have rather begun to violate human values of privacy, data protection, autonomy, and trust (Coghlan et al., 2021; Lee & Fanguy, 2022). In addition, assessment researchers like Nguyen et al. (2020) and Dawson et al. (2024) share different perspectives. As such, for online exams, Nguyen et al. (2020) proposed the adoption of a "cheat-resistant" assessment design, such as open-book exams or knowledge-based assessments that prioritize higher-order thinking skills and critical abilities. Dawson et al. (2024), on the other hand, contended that binary notions of closed/open book and concepts of open web exams have gradually become obsolete in the age of online exams and generative artificial intelligence. Since in online exam conditions, they argue, unauthorized information, people, and tools can be easily manipulated by the examinees to accomplish their exam tasks, assessment designers should now shift their attention toward specifying and imposing clear restrictions (on information, people, and tools) keeping in mind five major criteria—learning outcomes, feasibility, consequential validity, authenticity, and values—in HE systems.

2.2   Cheating on online exams in South Asia during COVID-19

While existing scholarship on academic dishonesty in South Asian contexts is sparse (Arab & Orfan, 2023; Ghimire et al., 2024; Sivasubramaniam, 2024), empirical investigations into online cheating remain largely insufficient. Studies conducted within higher education in India (Dayal, 2023), Bangladesh (Tahsin et al., 2022), and Sri Lanka (Abeywickrama & Thasneen, 2022), highlight that although online learning and assessment provided continuity to university course cycles during the pandemic, students' cheating on online exams called into question the fairness, reliability, and integrity of assessment practices. These studies have particularly pointed out that the lack of digital preparedness, weak proctoring mechanisms, infrastructural

gaps, students' disengagement in learning, and perceived ease and opportunity to cheat as the prominent factors behind online cheating.

For example, in Sri Lanka, both teachers and students expressed their concerns about the effectiveness, reliability, and validity of online examinations due to multifaceted reasons, such as students' disengagement in learning, pressure to score better grades, high propensity to cheating behaviours, and lack of an effective supervision mechanism in place (Abeywickrama & Thasneen, 2022). Similarly, in Bangladesh, students attributed their cheating behaviours to pressure and stress during the pandemic, increased greed and expectation to score better grades, disengagement in online learning, inefficient proctoring mechanisms, and perceived ease of cheating on online exams (Tahsin et al., 2022). In another study (Dayal, 2023) conducted among teachers from schools through HE and private coaching institutions in India, teachers not only expressed dissatisfaction with the effectiveness and transparency of online assessment due to widespread cheating on exams and poor internet connectivity, or students' deliberate disconnection of internet cable. Interestingly, the teachers acknowledged their powerlessness to prevent widespread online cheating, as even parents were found assisting their children despite the teachers' efforts to enforce online proctoring measures, such as requiring a mirror behind the students. In the same study, these teachers lamented that their digital skills gaps had adverse impacts on the creation of worksheets, assessment designs, and teaching materials, which, they indicated, had direct or indirect impacts on students' cheating practices.

In many ways, the literature makes it clear that cheating on online assessments during the COVID-19 pandemic across the globe, including South Asian contexts, exposed HEIs to new forms of integrity and validity challenges, most notably associated with assessment practices. While the issue of cheating on online assessments, its factors, and countermeasures continues to draw attention from global scholarship, it remains an underexplored phenomenon in the context of technologically under-resourced countries like Nepal. Therefore, exploring these issues in the context of Nepal, where academic dishonesty has long been a pervasive concern (Ghimire et al., 2024), is even more important to have a critical understanding of what needs to be considered to effectively combat the integrity and validity threats associated with online assessment practices.

3   Methodology

3.1   Research context

There are thirteen universities, five medical academies, and their 1,458 constituent and affiliated campuses in Nepal and these HEIs offer a variety of academic programs across different faculties (UGC, 2023). While some programs in these HEIs are offered in annual systems, many programs are delivered through semester and trimester modalities. As in other countries, when the government of Nepal enforced physical distancing measures nationwide in the wake of the COVID-19 pandemic, few HEIs, particularly those in urban areas, gradually adopted emergency remote teaching to continue the university course cycle. However, although uncertainty prevailed for many months for a large number of Nepali HEIs that were technologically under-resourced and HE courses were postponed for a certain period, they gradually moved to emergency remote teaching in the mid-2020. While some HEIs in Nepal switched their formative assessment to online and entirely canceled the summative assessments that earlier used to be conducted face-to-face by employing in-personal invigilation, very few universities (that were somehow technologically resourced) conducted both summative and formative evaluations online (mid-semester exams, semester exams, term papers, quizzes, project works). As such, these universities conducted summative assessments by deploying certain measures that involved remote proctoring mechanisms or available video conferencing tools such as Zoom, Google Meet, and Microsoft Teams.

3.2   Materials and methods

This study was extensively designed to investigate HE teachers' and students' experiences and perceptions of online exams, academic dishonesty, and factors leading to exam cheating during the COVID-19 pandemic. Therefore, the data for the study were gathered from HE teachers (12), and students (30) from three Nepali universities that conducted a range of summative assessments online during the COVID-19 pandemic. These universities, which we have anonymized as Uni 1, Uni 2, and Uni 3 transitioned from their face-to-face teaching and traditional invigilated exams into online exams as an emergency response mechanism during the COVID-19 pandemic. All the participants involved in this study were approached either through phone calls or emails using snowball sampling, in which researchers' colleagues (who

were teaching at these three universities) facilitated as gatekeepers. As suggested by Biernacki and Waldorf (1981), the choice of snowball sampling as the data collection technique was dictated by the nature of the study, which aimed to investigate sensitive issues like students' online cheating practices during the COVID-19 pandemic. While snowball sampling through colleagues' involvement as gatekeepers could cause bias in participant selection, we considered this approach appropriate for this study, as it could conveniently facilitate us to build trust and rapport with the participants to draw authentic narratives of online cheating as a sensitive issue, for which it is hard to find participants who would openly discuss the issue. In this, early participants helped in recruiting the voluntary participants in this study. Informed consent was obtained from all the participants prior to data collection. All the participants' real names have been anonymized as detailed in Table 1 to maintain confidentiality, anonymity, and research ethics in this study.

Table 1 Respondents' profile

Universities	Teachers	Students	
		Undergraduate/Bachelor's	Graduate/Master's
Uni 1	T1, T3, T7, T9, T11	S1, S4, S11, S14, S19, S20, S26, S27	S3, S9, S29, S30
Uni 2	T2, T5, T8	S8, S13, S16, S21, S25	S5, S10, S12, S22, S23
Uni 3	T4, T6, T10, T12	S2, S6, S17, S24	S7, S15, S18, S28
Total	N = 12	N = 16	N = 14

After we received informed consent from all the participants involved in this study, an interview schedule was used to interview them individually on video conferencing tools such as Zoom, Google Meet, and Facebook Messenger at their convenience. An average of half an hour of semi-structured interviews were conducted to elicit the study data from the participants. Consulting existing literature on academic dishonesty both during and before the COVID-19 pandemic and utilizing Galletta's (2013) ideas, we initially designed 10 primary open-ended interview questions and other probes both to guide the interview and generate a thick description from HE teachers and students. All the interviews were audio-recorded on laptops and subsequently were transcribed verbatim. Once the data were transcribed, the researchers systematically coded, collated, and categorized them under potential emergent themes by following the six stages of the inductive coding scheme (Braun & Clarke, 2006). To ensure the trustworthiness and consistency of the coding and the potential themes, the researchers first analyzed the verbatim transcript independently to familiarize themselves with the data and then had regular meetings to discuss, collate, and agree on the codes and the emergent themes. In so doing, we transcribed the audio interviews and read the verbatim transcribed multiple times in the first stage. Second, we coded the verbatim transcribed following an inductive process. Third, we identified the themes from the repetitive codes in the data set. During this stage, we reread the data multiple times to ensure the inter-coder reliability for analysis. Our disagreement on codes was regularly discussed until we reached consensus by collaboratively reinterpreting and redefining codes to maintain reliability and consistency in our codes.

In the fourth stage, we reviewed the emergent themes for three major purposes such as to avoid potential biases, merge the overlapping themes, and ensure participants' meaning adequately. In this fifth stage, we defined the themes and named them based on research question themes. Finally, we presented the themes in the form of a report through critical analysis.

4   Results

4.1   Teachers and students' experiences and perceptions toward online assessment and its effectiveness

Both teachers and students have mixed perceptions vis-à-vis online assessment and its efficacy during the pandemic. The majority of teachers appreciated the efficiency of online exams, as these fit well with the virtual classroom format that they conducted throughout the semesters/years and avoided any disruption in the academic calendar (T1, T3, T4, T8, T11). This transition ensured that students' academic sessions continued without pause, which students also valued for maintaining the continuity of their education (S2, S8, S10, S16, S28, S30). The majority of students found those virtual exam settings convenient because they could take their exams from their homes whereas teachers' concerns were mainly related to the grading process.

Though they thought 'standardized rubrics' (T2) simplified the grading process, increased clarity and made assessments more transparent for both teachers and students (T9, T10, T12), the online evaluation of the answer sheets, in the early days of pandemic, became a challenge for the teachers. Moreover, this shift into the virtual space for assessment purposes familiarized both teachers and students with new technologies and developed their digital skills and adaptability (T1, T5, T11, S2, S6, S12, S17, S23). But this shift was not devoid of challenges. One major challenge the teachers faced was on question setting. T3, for instance, responded:

> [. . .] *setting the questions for the exam was challenging so that no one could cheat, receive help from the seniors or the experts of the subject matter, and copy from the open internet source.*

It indicates that the teachers were aware of the likelihood of academic misconduct in online settings and recognized one of the effective ways to discourage it is by designing those kinds of questions that are difficult to copy or answer with outside help. Adding to this point another teacher shared his effort in crafting questions that 'tests criticality and creativity of the students' (T10). But one of the respondents, a Statistics teacher (T5), expressed their limitations in this approach because expecting only creative or critical responses from the students did not always align with the course objectives.

In line with this argument, other teachers expressed concerns about the validity of such assessments. While screening answer sheets of students, teachers were bewildered to see identical responses, and after the students' results were summarized, they noticed that, while no students failed, those who had scored high marks in their previous assessments found their results averaging out with their classmates (T1, T4, T8, T12). This raised concerns about grade inflation and the true measure of students' abilities. On the other hand, students faced their own set of challenges, such as with the 'digital interface and the lack of proper supervision' (S3).

In addition, the significant weightage placed on the final sit-in exams (S2, S5, S26, S29), technical difficulties while accessing the question paper (S4, S8, S14, S24) and problems with online submission of answer sheets (S6, S7, S18, S27), as students responded, affected their ability to perform consistently.

The data showed that teachers and students recognized that online cheating behavior was a serious issue, no matter how it was done (S2, S19, S25, T1, T2, T4, T7, T9): using traditional tools like paper and calculators to modern technology such as smartphones, smartwatches, social media, and AI. While some of the students admitted to participating in online cheating, the majority of the students expressed awareness of its negative consequences. They acknowledged that although cheating might help in passing exams and obtaining high marks (S1, S15, S22, S30), it has a long-term impact as it 'undermines true learning, capacity building through education, and personal growth' (S3).

4.2   Exam proctoring and institutional efforts

As in many other universities throughout the world, online exam proctoring was a new practice in Nepali universities. The universities developed exam protocols to facilitate exams in a virtual environment (T6, T7, T8). While sharing links to the question papers, the universities attached 'exam guidelines with instructions [that mentions] . . . Dos and Don'ts activities' (T3), the rules for 'during exams and the submission procedures after exam' (T1, T2). The students were instructed to 'remain visible on video' (T4) during the exam and show 'clear evidence of scanning the answer sheets within the exam time' (T3), then only the invigilator allowed them to submit their answer sheets and helped them in the submission process.

While universities implemented proctoring software to monitor students during exams, track eye movements, check their screens, and make sure their surroundings were visible (S3, S4), they were not uniformly applied among institutions. Two students (S4, S10) shared almost similar experiences they heard about cheating incidents when the examinees were using a second screen and 'their behavior was flagged' (S10).

The narrations shared by students raised questions about the validity of online assessment. For some of their friends, the online exam was a 'collective effort' (S5). As they stated, those friends used to 'solve questions collectively' (S3) being gathered in a house during the exam hours. This collective effort gave them an unfair advantage, affecting the grading curve and impacting individual grades (S12, S20, S21). The use of 'proctoring software' on the one hand and the incident of mass cheating on the other hand showed that online exam proctoring was not equally effective in all circumstances and institutions.

4.3 Motivating factors for online cheating

In an online exam setting, students noted that while the absence of their friends in the surroundings reduced peer influence of cheating, the indirect pressure to perform well still remained strong. As a result, group chats, online forums, and social media (S2, S3, S10, S13) became popular 'spaces' for sharing answers, turning cheating into a 'virtual collective effort.' Furthermore, the 'anonymity' (S3) and 'lack of effective supervision in an online setting' (S4) made cheating more tempting, as the 'perceived risk of getting caught is lower' (S12). It showed that many students rationalized their behavior by thinking that everyone else was doing it or that they realized the playing field was already uneven although these students seemed aware of the negative consequences of cheating practices.

In the early days of the pandemic, assessments were conducted using basic virtual platforms such as Zoom, Google Meet, and Microsoft Teams. Without the presence of effective monitoring technologies (S2, S13, S19, S25), students found themselves in an environment with fewer constraints, which provided opportunities for academic dishonesty. The absence of strict oversight in these early stages of online assignments encouraged some students to engage in cheating.

As the need for effective monitoring became apparent, educational institutions began to implement proctoring software to enhance exam security. However, teachers admitted to struggling with the effective use of these technologies (T5, T6, T7, T9, T10). The unfamiliarity with proctoring tools and their proper deployment meant that these measures were not as effective as intended. Furthermore, T2 pointed out the growing challenge academia faced with the advent of new technology like advanced chatbots.

Students' perspectives further highlighted the factors that motivated online cheating. Six students openly admitted to cheating for the first time in an online setting, citing the ineffectiveness of exam monitoring and pandemic-induced stress as key reasons (S6, S8, S11, S13, S20, S29). The student respondents also noted that in some courses, the assignment questions were designed to assess general concepts based on mere recall rather than challenging students with high-order thinking skills and critical analysis (S1, S2, S10, S24, S28).

4.4 Ways to minimize online exam cheating

Although teachers and students had various opinions about what could deter cheating behaviors on online examinations, they repeatedly highlighted that all the stakeholders (universities, teachers, and students) needed to devise and implement two major deterring mechanisms: the internal deterrent mechanism (associated with students' character, belief, and psychology) and external deterrent mechanism (associated with universities, administrators, and teachers). For instance, some students (S1, S22, S25) highlighted the external factors such as the fair use of technology and strong administrative monitoring, as deterrents to cheating in online settings. But some teachers and students emphasized on internal changes. Their opinion suggested building character traits and promoting integrity could have a lasting impact to address the issue. For instance:

Until and unless students consider [cheating] as an ethical issue related to integrity, they may continue to rationalize their behavior [. . .] (T8)

Among other teacher respondents, two of them (T2, T10) stated the effective use of modern technology and setting creativity-testing questions would help decrease the occurrences in online cheating while the majority others pointed out the negative consequences and suggested long-term solutions, that is, to change evaluation system itself; two teachers proposed to practice 'continuous assessment' (T1, T5) and two others (T7, T12) shared how 'labor-based-grading contract' and 'engagement-based grading contract' could be useful to minimize the psychological pressure created by heavy-reliance on final sit-in exams. For T3 and T4, 'open book exams' and 'take-home exams' if practiced throughout the academic sessions, and for T11 'developing educational honesty' among students could help minimize this problem of Nepali academia.

5 Discussion and conclusion

This article investigated the experiences and perceptions of Nepali HE teachers and students about online assessment practices during the impact of the COVID-19 pandemic. It also explored motivating factors of online cheating based on the experiences of those who administered and participated in online exams and some ways to minimize cheating in academia. The findings of

the study revealed that both teachers and students faced significant challenges such as adapting to technology, ensuring reliable internet access, engaging students remotely, and managing time effectively among others during the initial transition to online assessment practices. However, over time, they gradually adapted to the online format and became more familiar with the new methods of teaching, learning, and evaluation (Lavidas et al., 2022). This acclimatization shows the resilience and adaptability of the academic community in Nepal and demonstrates their ability to overcome technological barriers and continue educational activities despite the constraints imposed by the pandemic and 'digital divide'. These experiences, if compared to the contexts of Sri Lanka, where universities introduced institutionally coordinated online examinations supported by centralized policies (Abeywickrama & Thasneen, 2022), Nepal's dependence on self-learning and limited initiatives reveals institutional weakness and a lack of systemic preparedness.

Our findings on teachers' and students' perceptions toward online assessment and its effectiveness revealed their mixed feelings. While teachers appreciated the seamless integration of exams with online classes, which ensured the continuity of academic activities, they also noted some limitations of online assessments (Lavidas et al., 2022). Their stories of how they struggled with the use of technology highlighted the need for training to handle the 'specific circumstances' of online exams. This resonates with the experience of Bangladeshi teachers, who reported a lack of sufficient training in online assessment design and called for more sustainable capacity-building programs (Hasnat & Kabir, 2024). In contrast, though large-scale digital initiatives were introduced, many teachers reported inadequate orientation and insufficient professional development for online examinations (Dayal, 2023).

Moreover, the ease of taking exams from home, though convenient for students, raised critical questions about the integrity of the exam process. The anonymity and ineffective supervision associated with online exams further created opportunities for cheating that undermined the reliability of assessment results, as Rüth et al. (2024) noted. In particular, against the university guidelines, the students gathered in a place and (mis)used social media and online platforms for assessment purposes; as a result, they not only produced identical answers but also breached university exam policy and problematized assessment validity. In addition, as many students' responses to exam questions were identical, they affected the grading process by confusing examiners about the originality of the answers, which seemed to have undermined the fair evaluation of HE students' personal learning outcomes such as knowledge and skill, thereby impairing the validity of online assessments. Regionally, similar findings emerged in Bangladesh, where cheating became normalized under weak proctoring and infrastructural gaps (Tahsin et al., 2022). This suggests that in Nepal, too, students' rationalization of misconduct cannot be understood solely as individual moral failure but also as a coping mechanism shaped by structural fragility and peer assumptions.

This tension between 'convenience' and 'integrity,' as reflected in the responses, demands for a balanced approach. At this point, our findings offer a ground to recommend to the concerned authorities in Nepali HEIs to invest in online exam infrastructures, including an effective proctoring system (Gudiño Paredes et al., 2021), and establish clear guidelines to uphold academic standards. Our finding here coincided with Nguyen et al. (2020), who recommended designing 'cheat-resistant' assignments that require higher-order thinking and problem-solving skills to minimize cheating on online assessments. However, unlike in Sri Lanka, where proctoring and exam integrity measures were embedded at the institutional level (Abeywickrama & Thasneen, 2022), and in India, where universities provided institutional training for teachers (Dayal, 2023), Nepali universities need to prioritize low-cost, feasible solutions such as mobile-friendly platforms, randomized question banks, and phased teacher training workshops. Similarly, drawing from Bangladesh, structured peer-moderation and formative assessments could reduce dependence on high-stakes exams and discourage academic misconduct (Hasnat & Kabir, 2024).

The findings also suggest that reducing online cheating requires more than technological tools; it demands a behavioral change that develops a culture of academic honesty where integrity becomes part of students' identities and life values. Similarly, the finding revealed that a significant concern was the increased cheating behavior, which was exacerbated by the unfamiliarity with the online space. Teachers acknowledged the difficulties in designing exam questions to deter dishonesty, while students attributed their misconduct to the perceived ease of cheating in online exams weak monitoring/supervision system pandemic-induced psychological pressure and assumption about their peers cheating and the nature of the exam questions as key motivators. This pattern mirrors the Afghan context where students often justified misconduct by pointing to peer behavior and weak monitoring systems and treated cheating as a normalized

and low-risk act (Arab & Orfan, 2023).

The use of proctoring software was a step toward addressing these issues, but its inconsistent application and the rapid evolution of cheating methods, including the use of AI, added to the ongoing challenges. Some students misused the loopholes by using second screens or collaborating in groups. Some others accepted that they cheated on internal exams/mid-term exams, quizzes, and homework, and coinciding with the argument of Jenkins et al. (2022), they even admitted cheating for the first time in their life under the psychological pressure of the pandemic. In this sense, it can be plausibly argued that due to technological limitations and human factors, the transition to online assessments during the pandemic revealed significant gaps in ensuring academic integrity and assessment validity. The use of basic virtual platforms without effective monitoring, combined with unfamiliarity with new proctoring technologies, further exacerbated this issue. When compared with Sri Lanka and Bangladesh, where at least minimal institutional support and systematic exam regulations existed (Abeywickrama & Thasneen, 2022; Tahsin et al., 2022), Nepal's case highlights how institutional fragility and limited preparedness worsen misconduct risks. This makes the Nepali case significant for global readers, as it shows the role of systemic readiness in shaping integrity outcomes during crises.

By acknowledging these issues and taking proactive steps, HEIs can better prepare for the future, even in the face of unprecedented challenges. For Nepali HEIs, feasible steps could include developing national-level policy frameworks that move beyond surveillance, introducing teacher training modules specifically for online exam design, and adopting context-sensitive low-cost monitoring alternatives (*e.g.*, periodic viva checks or oral defenses). Such interventions, already piloted in regional neighbors (Hasnat & Kabir, 2024; Abeywickrama & Thasneen, 2022), can guide immediate reforms in Nepal.

This research presents a general overview of the perceptions of teachers and students vis-a-vis online assessments and cheating behavior, assessment proctoring mechanisms, factors that led to online cheating during the COVID-19 pandemic and probable ways (short-term and long-term) of minimizing online cheating behavior. While we do not claim the absolute validity from the limited samples of informants (12 teachers and 30 students) provided in this study, the insights contribute to higher education systems in identifying and implementing different strategies to uphold academic integrity and ensure the validity of online assessments. This means that while our study, which is largely exploratory and is based on limited samples, has limitation for generalizability, it still offers in-depth insights into participants' lived experiences and offers important lessons for the academic future, as online teaching, learning, and student evaluation have become integral to university course cycles and assessment systems. At this point, HEIs must prioritize digital preparedness, establish psychological support systems during crises, and critically engage with the evolving role of GenAI vis-à-vis academic integrity. Yet more importantly, HEIs must recognize that promoting academic integrity in a post-pandemic, AI-augmented world is more than a matter of enhanced monitoring as it requires mentorship, institutional readiness, and pedagogical foresight.

Data availability statement

The data that support the findings of this study are not publicly available due to privacy issues.

Conflicts of interest

No potential conflict of interest was disclosed by the authors.

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