Int J Ethics Soc 2025; 7(2): 35-47

10.22034/ijethics.7.2.35

INTERNATIONAL JOURNAL OF Ethics & Society

Original Article

Phenomenology of the Ethical Dimensions of Electronic Educational Evaluation

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Received 29 Jan 2025 **Accepted** 11 Mar 2025 **Online Published** 13 Aug 2025

Abstract

Introduction: With the paradigm shift in education, assessment methods will inevitably change as well. To conduct ethically grounded assessments, addressing ethical considerations is essential. Recognizing the importance of this issue, the present study was conducted with the aim of exploring the lived experiences of ethics in electronic educational evaluation.
Material and Methods: This study employed a qualitative approach of the phenomenological type. The research population included all faculty members of the Department of Educational Sciences at Bu-Ali Sina University who had teaching experience, as well as all master's students of Educational Sciences (2019 and 2020) who had experience with virtual learning. Purposeful sampling was used, with the criterion of having completed two semesters virtually and being accessible. The data collection tool was in-depth semi-structured interviews. All accessible faculty members of the department were interviewed, and student interviews continued until theoretical saturation was achieved, which occurred after 10 interviews. The data collected were coded and categorized using MAXQDA software.
Results: Analysis of the findings resulted in 28 sub-categories and 6 main categories.
Conclusion: To conduct ethically grounded assessments, instructors need to understand the essence of electronic education in order to develop a better perspective on electronic assessment. Instructors with pedagogical competence utilize a variety of tools for electronic assessment. According to faculty perspectives, a constructivist approach to electronic assessment emphasizes attention to the process. From the students' perspective, a learner-centered approach in assessment serves as a means for self-awareness, skill development, and critical thinking enhancement. From both faculty and student perspectives, a process-oriented approach and designing questions at higher cognitive levels reduce the challenges of assessment.
Keywords: *Ethics, Educational Evaluation, Electronic Learning*

How to Cite: Muhammadi Pouya F, Rezaei Keramat A, Khabaz A. Phenomenology of the ethical dimensions of electronic educational evaluation, Int J Ethics Soc. 2025; 7(2): 35-47. doi: 10.22034/ijethics.7.2.35

INTRODUCTION

E-learning refers to all forms of teaching–learning that are conducted and supported electronically [1]. In e-learning systems, the assessment and evaluation of learners' performance constitute a crucial part of the curriculum process. Evaluation is one of the most important tasks in the learning process, and its purpose is to determine the extent to which educational objectives have been achieved [2]. Evaluation is a systematic process of collecting and interpreting evidence that ultimately leads to a value judgment regarding a specific action, ensuring how well e-learning programs have met required standards [3]. With the expansion of e-learning in universities and higher education institutions, the issue of evaluation becomes significant in terms of quality assurance of teaching–learning processes, justification of e-learning programs, and the necessity of meeting

relevant standards in the design, development, and implementation of e-learning [4]. The greatest concern of educational systems regarding evaluation in e-learning environments is the issue of ethics in evaluation and, consequently, making fair judgments about the level of learners' acquired competencies [5]. Ethics is a systematic body of knowledge that determines patterns of communicative behavior of individuals and organizations toward themselves and others, based on respect for the rights of both parties [6]. Attention to ethical issues and adherence to ethics in educational organizations is one of the organizational imperatives [7] and has become one of the most accepted topics in organizations [8]. Due to its multifaceted nature, evaluation requires adherence to ethical principles in order to obtain valid results and make decisions aimed at improving existing programs and organizations [9]. It is evident that failure to adhere to ethical principles in electronic academic evaluation hinders the achievement of goals and may pose its own specific opportunities and threats [10].

Given the importance of ethics and the aim to align ethical principles within the higher education system, the Educational Ethics Charter was developed by the Education Deputy of the Ministry of Science, Research, and Technology in February 2021. In its third section, titled Professional Processes and Systems, and the subsection Ethics in E-learning, 17 articles are presented. Article 8 addresses the optimization and alignment of curricula with e-learning, and article 10 refers to the establishment of a continuous, fair, and scientific process of academic evaluation in e-learning. Furthermore, the same section addresses the topic of Ethics in Academic Evaluation in 16 articles, categorized based on the twelve general ethical principles of education outlined in the Ethics Charter and framed within the foundations of the educational system of science and technology. These fall under the principles of: quality and sustainability, fairness and justice, continuity, evaluation as learning, transparency and openness to critique, attention to privacy, confidentiality, and human dignity [11].

With the expansion of virtual education in the past decade-especially after the outbreak of COVID-19-and the increased importance of ethics in academic evaluation, ethical considerations have gained heightened importance. It is therefore necessary to identify various dimensions of ethical academic evaluation in virtual learning environments, in order to offer a deeper understanding of the lived ethics of academic evaluation experienced in online education to both graduate students and faculty members, ultimately contributing to the enhancement of ethical evaluation practices in virtual learning environments. Prior research shows that the few studies conducted on the ethics of electronic evaluation have mostly focused on privacy, integrity, and technical issues. Broad topics related to electronic assessment in theoretical frameworks are generally not addressed under ethical titles. Thus, a comprehensive study is needed to investigate the dimensions of electronic evaluation based on ethical principles as outlined in the Educational Ethics Charter. Accordingly, this study aims to examine the ethical dimensions of electronic evaluation from the perspectives of faculty members and master's students in the field of Educational Sciences. The purpose of examining both faculty and graduate student perspectives simultaneously is to compare the obtained data and determine the validity of the viewpoints.

Below, previous research findings are briefly mentioned. In line with realizing the principle of quality and sustainability in electronic evaluation, the results of some studies indicate that: among the key principles of evaluation in virtual curricula [12], the best strategies for virtual evaluation [13], and for conducting

comprehensive evaluation in e-learning environments [14] which lead to improved and enhanced learning [15], increased educational interaction, improved efficiency and depth of learning [16], and reduced unethical behaviors in electronic evaluation [17] the use of diverse assessment strategies and tools is essential. Relying on a single method for evaluation reduces its validity and results in failure to uphold the ethical standards of evaluation [18, 19]. Self-assessment, by maximizing learner participation in evaluation, creates opportunities for learning improvement [20]. Evaluation methods are not a predetermined process but must be aligned with curriculum components [5], content, and objectives, and should employ multiple assessments [14, 18, 19], while also aligning with Bloom's cognitive levels [14]. Lack of instructors' familiarity with evaluation objectives, failure to develop higher-order skills, and the absence of emphasis in evaluation methods on various domains of learning are among the major challenges in online assessment [21]. Process-oriented teaching strategies have enabled greater interaction between instructors and students [22]. Research findings indicate that academic procrastination is significantly lower in process-based evaluation compared to outcome-based evaluation [23]. The quality and accessibility of virtual testing platforms play a decisive role in conducting exams; the greatest challenge in electronic assessment lies in technical issues [24], generally stemming from the absence of proper infrastructure and platforms [21, 25], and limited access to technology [26]. In alignment with the principle of fairness in electronic evaluation, ensuring equity among learners with diverse characteristics is one of the manifestations of justice in virtual education [27]. Issues such as unfair evaluation [28], and challenges of diversity and equity [29], raise significant concerns. Given the number and diversity of learners, it is important to take actions that balance expectations [30]. Research findings show instances of neglecting fair and just evaluation practices [27, 31]. Individual differences, such as access to hardware, physical disabilities, lack of access to high-speed internet, and learners' learning styles [32], must be taken into consideration. In line with the principle of continuity, studies show that evaluation with feedback positively affects learners' academic progress [33], as providing feedback guides learning interactions and makes learning more meaningful [16]. However, the lack of infrastructure for continuous assessment remains a challenge [21]. In pursuit of the principle of evaluation as learning, research indicates that instructors generally hold a positive attitude toward the implementation of e-learning systems [31, 34, 35]. However, the lack of skill and preparedness among some instructors in conducting virtual education has led to negative attitudes among faculty [31]. Regarding the principle of transparency and openness to critique, studies show that providing sufficient information about final exam conditions, grading methods, and the timing and location of the test has been evaluated as high quality [36]. In relation to the principle of privacy and human dignity, it is essential to protect student information and avoid intrusion into their personal matters [31]. Trust is one of the key components in improving the teaching-learning process. However, some ethical challenges in virtual evaluation [24, 29], including cheating [13, 17, 37, 38], have undermined the credibility of virtual educational evaluation [25, 39] and led to doubts about evaluation results [40]. A major reason for this is students' low level of awareness regarding adherence to computer ethics [40-42], which has caused a decline in instructors' trust toward students. Therefore, strategies to combat cheating and academic dishonesty [36], including preventive approaches [43], must be considered. Understanding this necessity, some studies have

investigated the ethical compliance of learners in evaluation [10]. Moreover, certain psychological challenges in virtual assessment [24]-such as lack of trust in students during evaluation, absence of feedback, and disruption of students' mental calm-have been identified as significant concerns [31].

MATERIAL AND METHODS

The present study is qualitative in nature and was conducted using a phenomenological method. The statistical population includes all faculty members of the Department of Educational Sciences who have teaching experience, as well as all master's students in Educational Sciences who have experienced virtual learning at Bu-Ali Sina University. The purpose of simultaneously examining the perspectives of both faculty members and students is to compare the obtained data and determine the validity of the viewpoints. The research field includes all faculty members of the Department of Educational Sciences and all Educational Sciences master's students from the 2019 and 2020 intakes (as listed in Table 1). Purposeful sampling was carried out based on two criteria: accessibility and having taught two semesters virtually for faculty members, and accessibility and having studied two semesters virtually for students. The data collection tool was in-depth semi-structured interviews. Interviews were conducted with all accessible Educational Sciences faculty members who had taught at least two semesters virtually at Bu-Ali Sina University. A total of 10 face-to-face interviews were conducted with 10 faculty members from the Department of Educational Sciences at Bu-Ali Sina University. Interviews with master's students of the 2019 and 2020 entrance who were accessible were also conducted. Interviews with students were conducted by phone, except for interview number 9, which was conducted in person. According to the principle of theoretical saturation, saturation was reached with the tenth student interview. In this study, efforts were made to demonstrate the credibility of the research through coding and categorization. To ensure the validity and accuracy of the findings, the member check technique was used: the transcribed interview texts were sent to the participants so that their agreement or disagreement could be identified.

Table 1: Demographic characteristics

Demographic characteristics of the interviewed professors									
Interviewee	Age	Gender	Position	Major	Interviewee	Age	Gender	Position	Major
1	47	Female	Associate	Educational technology	6	44	Male	Associate	Educational technology
2	44	Male	Assistant	Educational technology	7	58	Male	Assistant	Educational administration
3	40	Male	Assistant	Philosophy of education	8	57	Male	Professor	Curriculum
4	42	Male	Assistant	Educational technology	9	49	Male	Professor	Curriculum
5	40	Female	Assistant	Curriculum	10	44	Male	Assistant	Curriculum
Demographic characteristics of the interviewed students									
Interviewee	Entrance	Gender	Major		Interviewee	Entrance	Gender	Major	
1	99	Female	Educational technology		6	98	Female	Educational technology	
2	99	Female	Curriculum		7	99	Male	Educational technology	
3	98	Female	Curriculum		8	99	Female	Educational technology	
4	99	Female	Educational technology		9	99	Female	Educational technology	
5	99	Female	Philosophy of education		10	99	Male	Curriculum	

RESULTS

In this section, data from interviews with professors and students were analyzed. Coding

was done using MAXQDA software [12]. 28 subcategories and 6 main categories were identified, which are listed in Table 2.

Table 2: Overview of the subcategories and main categories of the research

Main Categories	Subcategories
Observing the principle of quality and sustainability in electronic evaluation	Relevance of evaluation to other elements of the curriculum
	Quality and access to virtual systems
	Use of synchronous and asynchronous evaluation tools
	Emphasis on process rather than product
	Need to conduct three-way evaluations
	Need to conduct ethical evaluation
	Improving learners' skills and thinking
	Paying attention to Bloom's cognitive levels in designing questions
	Modifying evaluation methods over time
Observing the principle of justice and fairness in electronic evaluation	Respecting individual differences
	Conducting evaluations appropriate to the lesson
	No bias and gender discrimination in evaluation
	Having flexibility in evaluation
	Fairness and justice in grading and educational activities
Observing the principle of continuity in e-learning	Providing continuous and effective feedback
	Conducting continuous evaluations appropriate to the content
Observing the principle of evaluation as learning in electronic evaluation	Paying attention to the use of learner-centered methods
	Promoting an electronic evaluation attitude (electronic evaluation culture)
	Paying attention to self-knowledge discussion
	Paying attention to participation and group activities
Observing the principle of transparency and criticality in electronic evaluation	Explanation of grading and evaluation methods
	Handling student criticism and objections
Observing the principle of attention to privacy and human dignity in electronic evaluation	Confidentiality of evaluation results
	Providing feedback as required
	Professors' trust in students
	Providing conditions to reduce student anxiety
	Respecting the student's right to choose
	Paying attention to the student's mental, physical, and emotional preparation

Research findings in line with the first sub-question of the research

What are the experiences of professors and students of the field of educational sciences at Bu-Ali-Sina University of observing the principle of quality and sustainability in electronic academic evaluation? After analyzing the interview data, 9 sub-categories and 1 main category were obtained, which are shown in Figure 1.

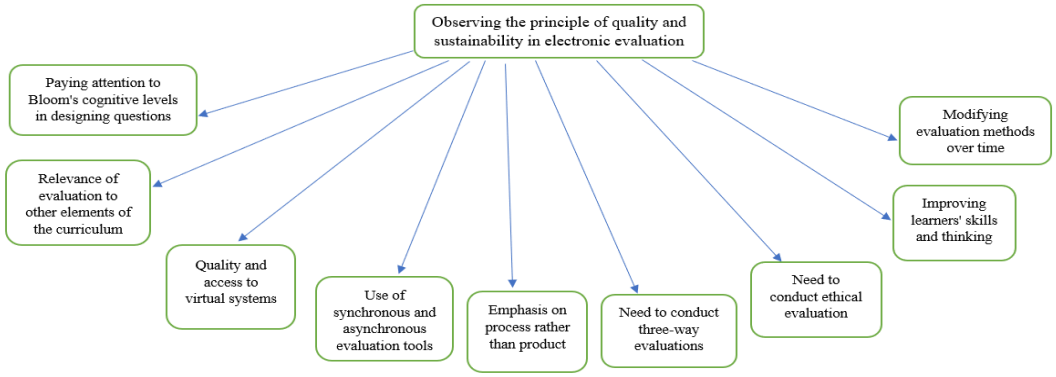

Figure 1: Schematic view of the findings of question 1

Research findings in line with the second sub-question

What are the experiences of professors and students of the field of educational sciences at Bu-Ali-Sina University of observing the principle of fairness and justice in electronic academic evaluation? After analyzing the interview data, 5 sub-categories and 1 main category were obtained, which are shown in Figure 2.

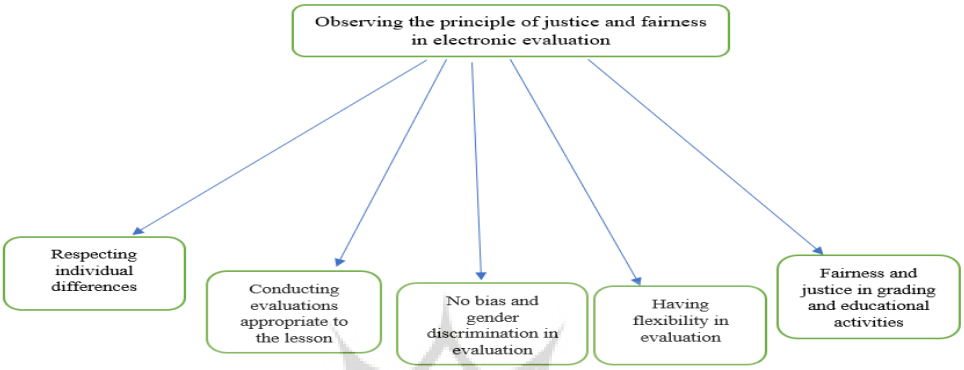

Figure 2: Schematic view of the findings of question 2

Research findings in order to achieve the third sub-question

What are the experiences of professors and students of the Department of Educational Sciences at Bu-Ali-Sina University of observing the principle of continuity in e-learning? After analyzing the interview data, 2 sub-categories and 1 main category were obtained, which are shown in Figure 3.

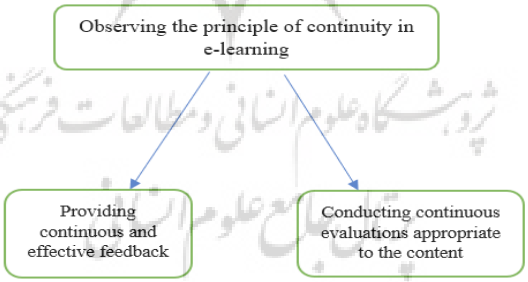

Figure 3: Schematic view of the findings of question 3

Research findings in line with the fourth sub-question

What are the experiences of professors and students of the field of educational sciences at Bu-Ali-Sina University of observing the principle of evaluation as learning in electronic evaluation? After analyzing the interview data, 4 sub-categories and 1 main category were obtained, which are shown in Figure 4.

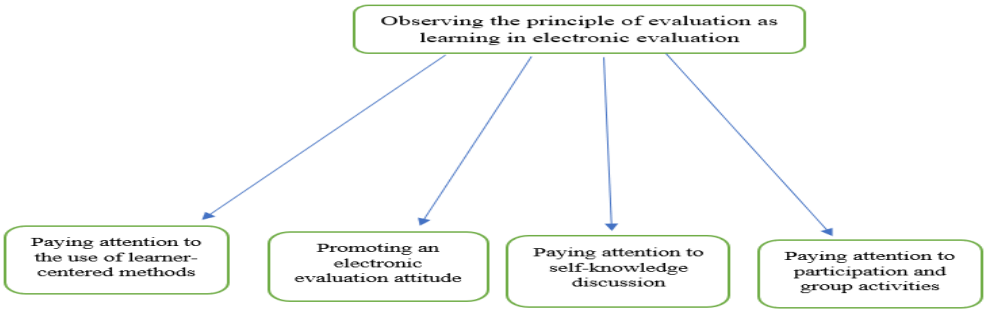

Figure 4: Schematic view of the findings of question 4

Research findings in line with the fifth sub-question

What are the experiences of professors and students of the field of educational sciences at Bu-Ali-Sina University of observing the principle of transparency and criticality in electronic academic evaluation? After analyzing the interview data, 2 sub-categories and 1 main category were obtained, which are shown in Figure 5.

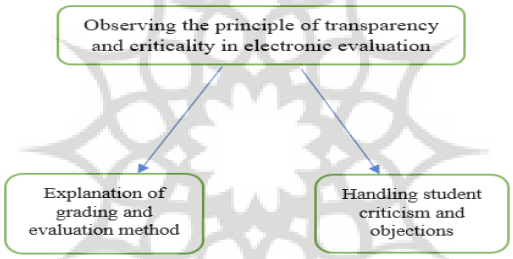

Figure 5: Schematic view of the findings of question 5

Research findings in line with the sixth sub-question

What are the experiences of professors and students of the field of educational sciences at Bu-Ali-Sina University of observing the principle of transparency and criticality in electronic academic evaluation? After analyzing the interview data, 6 sub-categories and 1 main category were obtained, which are shown in Figure 6.

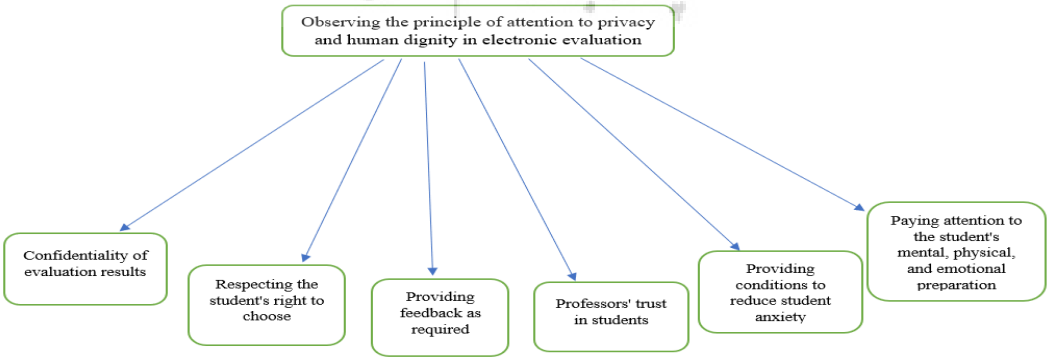

Figure 6: Schematic view of the findings of question 6

DISCUSSION

The present study explores the lived experiences of faculty members and students regarding the ethics of electronic educational evaluation, based on the sixteen ethical principles of academic evaluation outlined in the Educational Ethics Charter.

Findings related to the realization of the principle of quality and sustainability indicate that faculty members perceive evaluation through a systemic lens—assessment as a loop that covers all course elements and is part of the learning process. In line with prior research [5, 14, 18, 19], evaluation should be aligned with other elements of the curriculum. Regarding the quality of virtual platforms, assessments were conducted via Adobe Connect, Darsafzar, and Faradid systems. These systems were found to be adequate, which contrasts with the findings of other studies [21, 24, 25]. One of the challenges in this context is the development of necessary hardware to enable students' participation in the virtual learning environment, which aligns with the findings of [26] on the issue of technology access. Self-assessment aimed at improving cognitive and metacognitive skills [20], group projects to support collaborative learning, and the use of diverse tools and strategies for evaluation were considered part of ethical assessment practice by instructors, contributing to improved learning [12-16, 36] and reducing unethical behavior in online assessments [17]. Reliance on a single assessment method was noted to reduce validity [18, 19]. Process-oriented evaluation, rooted in constructivist theories, was prominent, and academic procrastination was found to be less frequent in such evaluations [23]. Diagnostic assessment (e.g., instant quizzes) was used to determine entry points for instruction and identify peer tutors. Formative assessment helped track learning progress, motivated learners, and engaged them in the learning process, enhancing their critical and analytical skills. Summative assessments were used to provide overall feedback and help learners address learning gaps. Peer assessments enabled students to review each other's work, fostering critical thinking. Designing inferential questions improved learners' skills, and higher-order cognitive questions reduced assessment challenges. From the students' perspective, assessment was generally aligned with other curriculum elements. However, some students attributed misalignment to instructors' lack of software proficiency. Faculty used various virtual platforms, including Darsafzar, Adobe Connect, and Exam One, and reported that the infrastructure was adequate. Students mentioned both synchronous and asynchronous assessments and observed that assessment methods improved over time. Learner-centered activities like peer assessment promoted critical thinking and critique skills. Higher-order question design improved students' abilities and reduced assessment challenges. Assessments focusing on lower-order cognitive skills were more susceptible to cheating and made it difficult to identify strengths and weaknesses.

Findings related to the realization of the principle of fairness and justice reveal that instructors considered individual differences [32], physical disabilities (e.g., use of various tools for students with special needs), appointment of representatives to identify students facing challenges, and assessment design tailored to students' learning styles [30]. Use of diverse assessment methods, flexibility in submitting responses, and acceptance of answers based on understanding all reflected instructor flexibility. Efforts to train students in using electronic tools aimed at bridging the digital divide and promoting equality. Proper project design and problem-based tasks ensured accurate performance evaluation, with grades reflecting

individual effort and the best performance selected as the final score—an embodiment of fairness. Grades were allocated based on official syllabi, and project types were tailored to whether the course was theoretical or practical, a finding that contrasts with previous research [21]. Gender bias and discrimination were minimal; faculty emphasized recognizing individual differences rather than practicing discrimination, as equality among diverse learners is a manifestation of justice in virtual education [27]. Though the potential influence of class-based cognitive schemata on grading existed, using student ID numbers instead of names minimized faculty bias. From the students' perspective, attention to personal, physical, and communication-related challenges was seen as recognition of individual differences. Assessments aligned well with course content. Students clearly reported minimal gender bias and discrimination. Flexibility in evaluation included the option to choose individual or group projects and submit responses via various platforms. Fairness in peer assessment, diversity of assessment methods, and score alignment with individual effort were viewed as manifestations of fairness and justice. However, not assigning grades for class attendance and participation, misalignment between effort and grade, and perceived unfairness [27, 28, 31] were cited by some students as examples of unjust grading. These students attributed such unfairness to instructors' lack of familiarity with them, leading to inequity in grading and instructional practices. The findings of the present study regarding the realization of the principle of continuity indicate that, from the instructors' perspective, feedback functions as a loop that encompasses all elements of the curriculum, creating motivation and enhancing learners' sense of presence. Instructors emphasized the need to use various types of feedback to sensitize learners to course topics. They stated that feedback serves learning by identifying students' strengths and weaknesses and should account for both its positive and negative aspects. Some instructors considered delayed feedback appropriate as a means of challenging learners and developing their thinking skills to the point of cognitive disequilibrium.

Assessment was carried out according to the approved syllabus and aligned with in-class discussions. Challenges related to continuous assessment included students' low technical skills in using platforms and the lack of strong protocols for effective implementation [21]. Students highlighted the importance of feedback as a crucial component of learning. When provided in a timely and appropriate manner, it served as a motivator and encouraged further learning [16, 33]. Feedback on assessment results was generally timely and helped identify students' strengths and weaknesses. In some cases, lack of feedback was attributed to the absence of teaching assistants and the time-consuming nature of the process. Formative assessments aligned with course content were regularly conducted in class through student questioning, critique, and reasoned defense. Feedback on assignments was also provided continuously in online classes and tailored to the presented content.

The findings regarding the realization of the principle of assessment as learning show that, according to instructors, institutionalizing a culture of electronic assessment over time leads to the implementation of high-quality assessments. The effectiveness of virtual education led to the acquisition of knowledge and experience, which in turn influenced instructors' attitudes. These shifts in attitudes and evaluation methods helped reveal student learning levels and became a path to learner self-awareness. Self-assessment and peer assessment were also seen as tools for promoting student self-awareness. In learner-centered assessments, group activities were aligned with the type of task and course

content, and automatic student grouping was possible. According to students, peer assessment fostered a positive view of virtual assessment. Faculty competence and sufficient knowledge contributed to positive attitudes toward this type of assessment [31, 34, 35], while negative attitudes stemmed from limited instructor familiarity with students and lack of skill [24, 31]. A process-oriented approach promoted group collaboration and helped shift student perspectives on learning, especially in peer assessment. It also facilitated learner self-awareness by clarifying strengths and weaknesses, building self-confidence, and supporting self-regulation through learner-centered assignments. However, learner-centered activities were less prominent due to instructors' limited skills and students' hardware limitations.

The findings regarding the realization of the principle of transparency and openness to critique show that instructors took actions such as explaining assessment principles to students, providing constructive feedback, and clarifying assessment standards [36]. They also responded to assessment results responsibly and showed openness to critique. The reduced space for critique was attributed to limited virtual interactions and the decline in social presence in online education. Instructors acknowledged that communication in the four key dimensions (transmission, behavior, interaction, and exchange) remained at the level of transmission, with few opportunities for feedback and critique. Students reported that instructors not only explained assessment methods and expectations but also responded to student objections responsibly. Faculty attention to critique was evident in student surveys about teaching methods, classroom management, and re-evaluation of assessment outcomes.

Regarding the realization of the principle of respect for privacy and human dignity, instructors noted that one of the characteristics of virtual education was the confidential delivery of feedback, which students received individually through learning platforms [31, 38]. Feedback played a key role in motivating students and identifying their strengths and weaknesses and was adapted to the context. Some instructors directly addressed the use of feedback, stating that it enabled collaborative learning, encouraged classroom competition, and had a motivational effect—while also maintaining students' confidence and dignity. Methods of building trust differ between in-person and virtual settings. Instructors attempted to prevent cheating through appropriate strategies, including preventive measures [43] such as preparing the groundwork for valid assessment, using diverse methods, designing higher-order questions, distributing assessment weights, and promoting the idea that students are responsible for their own learning. Trust as a foundation of assessment was emphasized by the majority of instructors. From some instructors' perspective, self-assessment and peer assessment are expressions of trust in students. However, others reported instances of dishonesty (cheating) during exams [10, 13, 17, 24, 25, 29, 36-42]. Using diverse assessment methods, maintaining transparency in behavior, understanding students' conditions, fostering instructor–student rapport, considering student preparedness in continuous assessments, implementing self-assessment, applying a process-oriented evaluation approach, and avoiding over-reliance on final exams all contributed to reducing student anxiety. Some instructors referred to arousal theory, noting that stress should remain moderate and within a normal range. They also highlighted the importance of considering students' emotional states in assessment, with prior notification to students when necessary.

According to the students' statements, in the peer assessment method, instructors provided feedback during the online class, but feedback on

assignments and projects was delivered individually through the platform. Students also reported instances of breaches of privacy by instructors [26]. In the assessment process, instructors based their approach on trust, helping reduce instances of academic dishonesty by creating a sense of trust and avoiding explicit mention of cheating. By adopting an "assessment for learning" approach and clearly defining learning objectives, they fostered a sense of confidence and assurance among students. Different evaluation styles including assignment-based assessment, project-based assessment, close monitoring of practical research activities, and designing conceptual questions at higher cognitive levels, served as ways to uphold students' academic integrity. A learner-centered approach, peer assessment, allocating grades to practical activities, fairness in evaluation, cordial relationships with instructors, assessments targeting higher-order cognitive skills, and awareness of the evaluation process [31] all contributed to students' psychological comfort. Among the major stress-inducing factors for students were lack of familiarity between instructors and students, absence of feedback [24, 31], excessive focus on final evaluations, and disregard for students' physical conditions during assessments. Respecting students' freedom of choice was evident in actions such as surveys on evaluation methods and offering the option to select individual or group projects. Attention to students' mental, emotional, and physical preparedness was seen in instructors' flexibility with midterm scheduling based on students' situations. Students attributed lack of consideration for their problems to instructors' insufficient familiarity with them.

Based on the study's findings regarding the realization of the six aforementioned principles, the following are recommended: Use of modern tools and strategies to ensure valid assessment, Provision of continuous feedback for improving assessment methods, Attention to individual differences among learners in evaluation, Design of higher-order cognitive assessments to ensure validity, Changing instructors' attitudes toward electronic assessment, Enhancing instructors' skills, Creating a space to foster learners' critical thinking, Respecting students' right to choose, and Safeguarding learners' privacy.

CONCLUSION

The overall results indicate that a paradigm shift in education leads to a change in assessment methods. When instructors truly understand the spirit of electronic education, they develop a more favorable attitude toward electronic assessment, which contributes to the development of an ethical assessment culture. The constructivist approach in online education improves teaching quality. In constructivist evaluation, the focus is on process over product, with an emphasis on developing critical thinking and learner skills. Instructors' learner-centered assessment approaches enhance students' analytical abilities and reduce the challenges of virtual assessment. Pedagogy is the most critical element in evaluation. Instructors with strong pedagogical competence use a variety of tools and techniques to conduct ethically sound assessments. In the early stages of virtual education, technical and software issues and a lack of digital literacy posed significant challenges to assessment. However, over time, evaluation methods have improved. According to students, process-oriented and learner-centered approaches foster self-awareness and increase critical thinking and skill development. One key challenge of virtual assessment remains the lack of familiarity between instructors and students, which can result in unfair evaluations. According to both faculty and students, adopting process-oriented approaches and designing questions at higher-order cognitive levels help alleviate assessment-related challenges.

ETHICAL CONSIDERATIONS

Ethical issues (such as plagiarism, conscious satisfaction, misleading, making and or forging data, publishing or sending to two places, redundancy and etc.) have been fully considered by the writers.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interests.

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