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Lessons from the Frontline: A Phenomenological Study into Faculty Members' Experiences with Challenges of Remote Online Exams in Medical Sciences Universities

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ABSTRACT

Background: The rapid shift to remote online examinations in medical sciences universities during the COVID-19 pandemic posed unprecedented challenges for faculty worldwide. This study aimed to explore faculty experiences with the challenges of remote online examinations at Rafsanjan University of Medical Sciences, Iran.

Methods: This qualitative inquiry utilized a phenomenological framework to conduct an in-depth exploration of faculty perspectives. Conducted at Rafsanjan University of Medical Sciences between September 2022 and February 2023, it involved 18 faculty members representing 15 various disciplines, with professional experience spanning four to thirty years. Purposeful sampling was implemented to ensure maximum diversity. Data were gathered through comprehensive, semi-structured interviews lasting between 60 to 90 minutes, conducted either face-to-face or through online platforms. All interviews were analyzed using the seven-step thematic content analysis approach developed by Diekelmann and colleagues, utilizing MAXQDA software.

Results: The thematic analysis of the interviews yielded four primary dichotomous concepts, eight principal themes (components), and 24 sub-themes. The four dichotomies identified were: online examination versus in-person examination, fundamental ultimate action versus constrained immediate action, resources versus impediments, and alleviating stress versus exacerbating stress. The eight principal components delineated were: essential substitution, unavoidable invalidity, fundamental ultimate action, constrained immediate action, online examination resources, online examination impediments, alleviation of stress, and exacerbation of stress. Faculty views on online exams varied, with some seeing them as a valuable alternative and others concerned that they negatively impact education because of cheating and reduced feedback. Benefits mentioned included quick results and cost savings, while worries focused on technical issues and fairness.

Conclusion: Faculty experiences reveal a nuanced balance between the advantages and limitations of remote online examinations. While online assessments can improve logistical efficiency and reduce certain stressors, ongoing concerns about academic integrity, technical preparedness, and educational value persist. Addressing these issues requires investment in reliable infrastructure, comprehensive faculty training, and innovative valid assessment methods.

Keywords: Faculty, Educational Measurement, Phenomenology, Distance, Education, Computer-Assisted Instruction

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Introduction

Online learning can be defined as the use of digital technology to deliver educational content—a practice that began with teaching machines in the 1920s and has evolved significantly over the past century (1). Initially, this approach served as a supplement to traditional classroom instruction, but following the COVID-19 pandemic, it became the primary method of teaching worldwide (2, 3). As a result, methods for assessing the effectiveness and quality of all components within the education system changed dramatically (4). The COVID-19 crisis triggered a rapid and widespread transition to online learning, and at its height, UNESCO reported that school closures impacted 1.5 billion students globally (5).

Recent studies indicate that many academic institutions are increasingly using web-based tools to improve teaching, learning, and assessment processes (6-8). With the rapid shift in educational methods, electronic assessment has become central to pedagogy and a key element in evaluating and monitoring students' understanding. Despite the simplicity and speed that these online methods offer—thanks to better communication between students and instructors—universities continue to face significant challenges in conducting electronic exams (9, 10). Although online learning provides numerous advantages, it also introduces new difficulties in assessing student performance. Issues such as maintaining academic integrity, replicating practical exams virtually, and the potential for heightened student stress have all been highlighted as concerns (11, 12).

Online assessment, which involves using computers or electronic devices to measure various dimensions of student learning, has become increasingly important as higher education has evolved and technology has become more widespread in the 21st century (10). As highlighted by numerous studies, online tests can track student progress through formative and summative processes and need to be practical, dependable, and valid (11, 12). This approach can deliver useful feedback that reflects how well students have met learning objectives, encourages their motivation to learn, provides insight into their progress, and evaluates their accomplishments to enhance problem-solving skills and develop new ways to apply knowledge independently in educational challenges. Additionally, it clarifies the actual development of the curriculum (13, 14). When well-designed, e-assessment can boost student engagement, offer prompt feedback, and improve learning results (15, 16). Furthermore, the types of online assessment strategies used by educators greatly affect student outcomes such as connectedness, satisfaction, learning effectiveness, and academic success (17).

Equipping instructors with proper training and support in creating effective online assessments is crucial for the successful adoption of e-assessment (18, 19). The use of online assessments to gauge student learning during pandemic-related university closures has prompted various concerns. Electronic assessments present numerous advantages, such as being user-friendly, providing immediate results, and enabling students to take exams remotely. Nevertheless, ensuring security remains the primary challenge for institutions and educators (20). Accordingly, understanding the perceptions of both students and teachers can provide valuable insights into the benefits and challenges of this expanding assessment method. Numerous researchers have examined students' perspectives on online learning, particularly focusing on online assessments (21-25), and have identified challenges like instructors and students being unfamiliar with the online education system and educational institutions not providing sufficient preparation or timely support for effective execution. They also emphasized multiple advantages, such as improved direct learning and communication, a focus on a holistic learning approach, the development of a learner-centered rather than teacher-centered system, flexible learning options, and the adoption of innovative and suitable teaching methods (23-25). However, research

on teachers' views about online education and assessment remains limited, highlighting the need for additional studies.

Amid the worldwide move to online learning and evaluation during the COVID-19 pandemic, Rafsanjan University of Medical Sciences in Iran also adopted this change (26). Earlier research has pointed out both advantages and disadvantages of remote online exams. Benefits include quick access to results and feedback, easier learning processes, time and cost savings, fewer grading errors, and a calmer testing environment due to the removal of some external distractions. On the downside, electronic exams can lead to cheating risks, technical and infrastructure challenges, issues like flawed questions or poor-quality images, and require students to have computer skills (26).

Given these positive and negative perspectives regarding remote online examinations, exploring the experiences of faculty members at Rafsanjan University of Medical Sciences can help highlight the advantages and drawbacks of these assessments. This insight can support educational administrators in enhancing the management of electronic testing.

Methods

Study Design and Setting

This study employed a qualitative approach and phenomenological method to explore the lived experiences of faculty members at Rafsanjan University of Medical Sciences in southeast Iran, focusing on the challenges they faced with online exams during the COVID-19 pandemic. Between September 2022 and February 2023, an expert from the Educational Deputy and a faculty member conducted interviews. These interviews took place either in the office of the Deputy Education or at the Center for Medical Education Development.

Participants and Sampling

Participants consisted of faculty members from Rafsanjan University of Medical Sciences who had at least one year of work experience and had administered a minimum of three online exams. Using purposeful sampling, the study selected 18 faculty members, in line with phenomenological research norms which generally suggest between 5 and 25 participants. Data collection continued until saturation was achieved. To ensure diversity, maximum variation sampling was used to include faculty members differing in gender, years of experience, and academic disciplines.

Tools/Instruments

In-depth interviews ranging from 60 to 90 minutes were carried out with the participants. All interviews were recorded with the participants' permission, and key points were noted during the sessions. The recordings were then fully and carefully transcribed. The interview protocol comprised two types of questions: core questions and probing questions. The core questions addressed participants' experiences with the electronic test, its advantages and disadvantages, as well as their recommendations for improvement. Specifically, the core questions were: What do you consider the strengths of this type of exam based on your experience with the online exam? What were its weaknesses? What strategies would you propose to enhance the strengths and minimize the weaknesses? Probing questions were employed to obtain further details or clarifications, such as requesting examples or more in-depth explanations.

Trustworthiness - To ensure an accurate representation of the structure and meaning of the phenomenon (credibility), the study included academic instructors with experience in administering online exams. Additionally, to enhance the applicability of the findings to other contexts (transferability) and to make the phenomenon clearer for other researchers (confirmability), the results were aligned with existing research literature. To verify the accuracy of the findings from the viewpoints of the researchers, participants, and readers (credibility), member checking was conducted by sharing the results with participants, who also contributed to the real-time analysis and interpretation of the data.

Data Collection

The interviews were conducted either in person or online based on the participants' preferences to help them prepare more effectively. The question form was sent to participants via email one day prior to the interview. In-person sessions were audio recorded with the participants' consent. For online interviews, Adobe Connect software was utilized, and the audio was later transcribed. The interviews typically lasted between 60 and 90 minutes.

Data Analysis

The data were analyzed using qualitative thematic content analysis with an inductive approach. The analysis followed the approach developed by Dieckelmann and colleagues (27) using MAXQDA software. This method involves seven steps: initially reading the interview transcripts to develop an overall understanding; creating interpretive summaries and coding the emerging themes; conducting a group review of all summaries to determine the main themes; consulting the original interview texts or participants to detect any inconsistencies or disagreements with the interpretations and composing a combined analysis for each interview; comparing and contrasting interview transcripts to identify and characterize shared activities and meanings; recognizing patterns that connect different themes; gathering feedback and suggestions from the research team and other experts familiar with the content and methodology on the final draft; and, finally, composing the final report.

Ethics - This qualitative study protocol received ethical approval from the Ethics Committee of Rafsanjan University of Medical Sciences. Prior to participation, all participants were fully informed about the study objectives and procedures, and provided their written informed consent in accordance with ethical standards for research involving human subjects.

Results

A total of 18 faculty members took part in this study, comprising 8 women and 10 men, representing 15 distinct disciplines, with tenure ranging from 4 to 30 years. Among them, 8 were affiliated with the School of Medicine, 4 with the School of Dentistry, 2 with the School of Paramedical Sciences, 2 with the School of Nursing and Midwifery, and 2 with the School of Public Health. Details regarding the participants' academic qualifications, areas of expertise, and years of professional experience are summarized in Table 1.

Table 1: Demographic characteristics of the participants

Code	Gender	Degree/ Area of expertise	Experience (year)
001	Male	Ph.D. / Physiology	25
002	Male	Ph.D. / Medical Physics	22
003	Male	MD / General Physician	21
004	Female	Ph.D. / Pediatric Dentistry	5
005	Female	Ph.D. / Neuroscience	7
006	Male	Ph.D. / Neurology	18
007	Male	Ph.D. / Physiology	4
008	Male	Ph.D. / Restorative Dentistry	12
009	Female	Ph.D. / Rheumatology	14
010	Female	Ph.D. / Biostatistics	10
011	Male	Ph.D. / Nursing	20
012	Male	Ph.D. / Physiology	6
013	Male	Ph.D. / Health Education and Promotion	4
014	Female	Ph.D. / Oral and Maxillofacial Radiology	11
015	Female	Ph.D. / Pharmacology	5
016	Female	M.Sc. / Nursing	30
017	Female	M.Sc./ Biochemistry of Biology	15
018	Male	Ph.D. / Endodontics	12

Data were primarily collected through in-depth interviews with the participants. During the initial coding stage, multiple themes were identified, which were later grouped into broader themes as the data analysis progressed. Thematic analysis of interviews with 18 faculty members resulted in the identification of four dichotomies (key concepts), eight main themes (components), and 24 sub-themes (subcategories). Table 2 summarizes these themes and sub-themes, illustrating the participants' lived experiences in relation to the identified dichotomies of the online exam.

A) Online Exams vs. In-person Exams

This dimension reflects instructors' overall perspectives on online exams compared to traditional in-person tests. Some instructors viewed online exams as a direct rival to in-person assessments rather than a complementary option, with opinions varying from highly positive to strongly negative. For instance, a few considered online exams as a valuable or future-oriented alternative, suggesting they could benefit certain students and provide new opportunities.

Conversely, other instructors perceived online exams as detrimental to education. One referred to them as "awful" and "negative." Another expressed support for e-learning in general but refused to endorse online exams. Some saw online exams as a practical necessity during the COVID-19 crisis, rather than a meaningful educational tool, stating, "We conduct these mandatory, worthless exams only because of the pandemic."

Some respondents believed online exams

Table 2: Themes and sub-themes extracted from the interviews

Dichotomy / Theme	Sub-theme
Online exams vs. in-person exams	
Essential replacement	1. Necessity to replace online exams with in-person exams 2. Suitability of online exams for students' future
Inevitable but less valid	3. Online exams as a forced necessity, despite limited educational value 4. Invalid exam due to cheating
Fundamental actions vs. quick actions	
Fundamental final action	5. Importance of robust hardware and software infrastructure 6. Providing infrastructure, albeit with a lot of time 7. Preventing the negative consequences of arbitrary tests
Short-Term, limited measures	8. Conducting electronic exams with only basic infrastructure 9. Not postponing the online exam
Facilities vs. bottlenecks	
Online exam facilities	10. Paper savings and reduced printing costs 11. Excluding in-person proctors 12. Instant feedback for multiple-choice results 13. Quick and precise scoring, especially for multiple-choice 14. Diverse exam tools provided by university e-learning systems
Online exam bottlenecks	15. Dependence on Internet and related tools 16. Requirement for digital supervision 17. Lack of meaningful feedback for instructors 18. Confusion using e-learning platforms
Reducing stress vs. heightened tension	
Reducing stress	19. Exams taken in a relaxed home setting 20. Less anxiety without attending exam centers
Heightened Tension	21. Feeling that technology controls the process 22. Cheating taking place 23. Stricter limitations during exams 24. Honest students feel unfairly treated due to tighter regulations

lacked educational value, arguing that they "have no validity due to the higher risk of cheating." As a result, they emphasized stopping this mode of education, stating that "students should return to university in person; otherwise, e-learning cannot be improved."

B) Fundamental Actions vs. Quick Actions

In this dichotomy, some instructors argued that online exams require a solid hardware and software infrastructure; without it, the exams may not deliver the intended educational outcomes. As one instructor explained, "We must ensure, for instance, that every student can access the internet, and whether their connection speeds are the same. Do they have backup internet options in case they lose their connection? Additionally, instructors uploading exam questions to the electronic system need the ability to identify and fix any errors or issues during the process."

One instructor shared his experience at the university regarding the swift implementation of online exams. He remarked, "Unfortunately, we were not given clear guidance about setting exam times, allowing students to review multiple-choice questions, or whether to randomize the questions. I only learned about these aspects from colleagues and followed suit. It would have been much better if we had received more thorough training." He stressed that, even though establishing these infrastructures is naturally time-consuming, it is an essential and foundational step that must not be ignored. Failing to do so turns the exam into an arbitrary process—essentially undermining its purpose. As one instructor put it, this results in "complete unfairness toward capable students," and, according to another, "It's not a test we can rely on to assess if our teaching goals have been met."

Conversely, some instructors believed that simply providing the basic hardware and software was sufficient for conducting online exams, and that these assessments, as a crucial part of the educational process, should not be delayed while waiting for all ideal infrastructure standards to be met. As long as the minimum needed to hold exams exists, they felt there was no reason to hesitate. For instance, participants noted, "During COVID-19, since we couldn't see students in person, holding online exams with limited resources was essential so students wouldn't fall behind." This appears to reflect the university's chosen approach. Some instructors noted that "the university's ability to organize online exams with limited resources in such a short time was a significant accomplishment." Another instructor added, "Being able to independently manage during the pandemic was a success. Any limitations will be gradually addressed through ongoing use, and the online exam system will eventually be fully developed."

C) Facilities vs. Bottlenecks

Interview participants highlighted both the advantages and disadvantages of online examinations. On the positive side, online exams eliminate the need for paper, reducing printing and duplication costs as well as removing the necessity for physical proctoring. However, they require an active internet connection, appropriate technical infrastructure, and online supervision—factors that can be both expensive and time-consuming. Another key benefit mentioned was the automatic and prompt grading of exams, which instantly delivers results to students, especially for multiple-choice tests in the e-learning system. This automation saves instructors the time and effort traditionally spent on marking papers. In the words of one instructor: "We don't have to grade exams anymore, and there's no risk of calculation errors. Plus, students receive their scores much faster, whereas manual grading could take a month or two."

On the other hand, some educators raised concerns about not receiving useful instructional feedback from online exams. This issue was particularly noted by instructors who use these exams largely because the university's e-learning platform makes them convenient. Some equated the online exam format to the university entrance

exam, expressing skepticism about its efficacy. As one instructor explained: "Multiple-choice questions aren't a reliable indicator of student knowledge. It's impossible to tell if a student chose an answer thoughtfully, guessed, or cheated, so we can't really assess whether they understood the material. While online tests do provide immediate results, they don't reveal anything about the quality of our teaching, and thus, don't help improve it."

Other technological features of the university's e-learning system, such as the ability to schedule tests, randomize questions and answer choices, accurately grade responses, and allow students to challenge specific questions, were also recognized as strengths by several interviewees. Despite these benefits, some instructors noted difficulties with the system. For instance, one reported, "The system allowed students to revise 10% of their answers, but they weren't sure how to do it, leading to confusion and repeated questions about navigating the test." Another instructor encountered a technical error that disrupted the exam timing and prevented student logins.

4) Reducing Stress vs. Heightened Tension

Not requiring students to be physically present in an exam hall can decrease their stress levels. Some instructors noted that "students can take exams at home without feeling stressed." These students have the freedom to select a testing environment that suits them best. However, the inability of instructors to directly monitor students and concerns about technological limitations—especially after cases of cheating in previous online exams—has prompted instructors to use various online system features to try to prevent dishonesty. Their aim is to ensure fairness and protect hardworking students, but these measures often place additional mental strain on everyone taking the test.

Instructors provided examples of increased cheating during online exams. They explained, "Some students form groups to share answers during exams." Students who typically fail were now achieving high scores, and their grades were sometimes raised by 3 to 4 points compared to before. There were even admissions from students that this improvement was due to cheating. These suspicions led some instructors to implement stricter measures in online exams. According to them, "Reducing exam time brought students' results closer to their true abilities, as they had less opportunity to confer with each other." Even so, instructors noticed cheating persisted, even after introducing measures like randomizing questions, preventing returning to previous questions, and shortening exam durations.

As a result, some instructors felt they should focus on making questions more challenging. A few adopted this strategy, setting more complex tasks for students. One instructor observed, "There are two kinds of students: those who don't cheat and complain about stricter rules, and those who cheat and find the process easier. Some students are clever enough to find new ways to cheat and get good grades effortlessly without much studying." For this reason, according to several participants, imposing strict restrictions is unfair to honest students, as it increases their stress. Restrictions like forcing students to move quickly from one question to the next or forbidding them from revisiting previous questions would not normally apply in traditional, in-person exams. In certain subjects, such as pharmacology, students sometimes need a moment to recall specific information. Yet, the added pressure of these rules can significantly elevate students' anxiety, making the restrictions a double-edged sword.

Except for individuals who were entirely opposed to e-learning, other participants offered recommendations for enhancing the university's online exam process, with the main themes and sub-themes drawn from the interviews and summarized in Table 3.

Organizing Exams in Designated Exam Centers

The instructors who suggested this idea argued that because students perceive in-

Table 3: Main themes and sub-themes identified from feedbacks on enhancing the online exam

Theme	Sub-theme
Organizing exams in designated exam centers	• Setting up a centralized digital exam center for student testing • Allowing students to attend exams at educational centers of different universities
Continuous professional development for educators	• Enhancing the technological infrastructure for online examinations • Providing training and skill development for instructors
Incorporating various materials into educational assessment	• Utilizing a wider range of evaluation tools • Implementing descriptive or essay-based exams • Assigning grades based on course-related educational activities

person exams as fairer and prefer them over online exams, setting up an exam center within the university—where students can attend while following health protocols—or allowing students to take exams at educational centers of other universities could help minimize cheating. Additionally, by utilizing these centers with the necessary infrastructure, issues like power outages and poor internet connectivity will be eliminated, removing common excuses related to online exam problems.

Continuous Professional Development for Educators

Based on feedback from some instructors regarding the second dichotomy (fundamental actions vs. quick actions), it is essential to enhance the software infrastructure for conducting online exams at the university by providing ongoing training for instructors. One instructor commented, "The most effective approach is to train faculty members on how to upload questions, prioritize them, choose question types, determine the optimal exam duration, allow returning to previous questions, enable viewing questions and answers, and use question randomization, as we are currently unaware of the benefits and drawbacks of these features."

Incorporating Various Materials into Educational Assessment

Another suggestion to enhance the online exams at the university was to diversify the types of materials used in educational assessments. This includes an e-testing system that enables instructors to create a wide range of question formats easily and without complications. One method of assessment mentioned was the descriptive exam. An instructor noted, "During a descriptive exam, when correcting the test papers, the instructor can observe that students are grasping each topic as they grade, but with online exams, only raw scores are received, preventing the instructor from understanding students' academic progress." Beyond the descriptive exam, alternative approaches to evaluating students were also recommended. For instance, one instructor proposed, "Final exam scores should be reduced while increasing the weight of class activities. I created a scoring table with eight categories, including attendance, presenting articles during online classes, asking questions throughout lessons, and so on. For example, I assign questions related to the content uploaded for the fourth session, requiring students to engage with that material, which promotes deeper learning."

Discussion

The objective of the present investigation was to examine the lived experiences of academic faculty concerning the challenges and opportunities associated with online assessments at Rafsanjan University of Medical Sciences amidst the COVID-19 pandemic. Through the meticulous analysis of comprehensive interviews, this research aimed to elucidate the strengths, limitations, and suggested improvements for electronic evaluations, with the goal of informing the advancement of future educational policies and practices. The thematic analysis of interviews with 18 faculty members revealed four main dichotomies, eight key themes, and 24 distinct sub-themes:

Online exams vs. in-Person exams: Some instructors were skeptical about the effectiveness of online exams, viewing them as mere replicas of traditional in-person tests that inherently conflict with educational goals. Consequently, they opposed the use of online exams and only accepted them due to the COVID-19 pandemic and the university's enforced transition to remote learning. It is important to acknowledge that experiences with online assessments can differ widely depending on the academic discipline. For instance, educators in STEM fields might view online exams differently than those in the humanities, underscoring the need for a more nuanced perspective on these differences. Additionally, other studies have reported instructors' negative attitudes toward online assessments, which may stem from difficulties in implementing online exams or limited student access (28-30).

On the other hand, some instructors viewed the online exam as a dependable alternative to traditional in-person exams, especially useful during the COVID-19 pandemic for promoting educational objectives. Numerous studies have reported faculty members' positive attitudes toward online assessments and their satisfaction with virtual exams, highlighting the benefits of this format (31, 32). Additionally, prior to the COVID-19 pandemic, research had already indicated some advantages of online exams and favorable opinions from both instructors and students, with some students even recommending the adoption of online exams for all intra-university and national Olympiad assessments (33, 34).

urthermore, qualitative studies involving higher education students reported a decrease in cheating, greater student accountability, and strong acceptance of online exam formats. Students and teachers also noted that remote learning offered benefits such as increased inclusivity, flexibility, access to recorded lectures, and efficiency (35-37). The impact of technology on the online exam experience is significant, with challenges like internet accessibility and the digital divide affecting both faculty and students (38). The future incorporation of advanced technologies, including artificial intelligence, holds potential to improve the assessment process further. Other research found that students were satisfied with the quality of online assessments and recognized their effectiveness in formative evaluation, though proficiency with computers influenced students' acceptance of electronic exams (39, 40). Additionally, qualitative studies revealed generally positive attitudes and high satisfaction with online exams among medical university faculty (41, 42).

Similar dichotomies have been reported worldwide, with some educators embracing the innovation while others express skepticism about assessment integrity (43). Discrepancies in findings may relate to differences in institutional preparedness and cultural attitudes toward technology.

Fundamental actions vs. quick actions: Within the basic distinction between comprehensive long-term measures and limited immediate responses, one group of instructors argued that online exams would not result in effective education unless a complete hardware and software infrastructure is in place. Conversely, many other instructors viewed having the minimum necessary infrastructure as sufficient to conduct online exams, believing that holding such exams would enable educators to maximize the benefits of e-testing in the future. During a crisis, however, the optimal approach should be chosen based on the resources available; otherwise, education may come to a halt. A similar conditional perspective on the effectiveness of online exams was previously reflected in feedback from students and staff at certain Australian universities. Their studies indicated that these groups would be hopeful about online exams becoming widely accepted, provided the e-testing systems are adequately enhanced and upgraded (32, 44). While some studies highlighted the benefits of online exams, students involved in other research recommended several enhancements, such as addressing ongoing internet connectivity

issues at the university, clearly specifying the overall duration of the test and time allocated per question, fixing technical glitches that caused some questions to not display, and increasing the frequency of online exams during training to help students become more familiar with the format (33, 36).

Facilities vs. bottlenecks: Considering the distinction between facilities and bottlenecks, some instructors recognized several benefits of electronic exams. These included removing the need for paper and the expenses associated with printing and copying, eliminating the requirement for in-person supervision, enabling prompt and precise grading, providing students with instant feedback—especially for multiple-choice questions—and utilizing various features of the university's e-learning platform to administer exams. Conversely, other instructors noted several drawbacks to online assessments, such as dependence on internet access and related technologies, the necessity for electronic supervision, a lack of meaningful feedback from instructors, and difficulties some educators experienced while navigating the e-learning system. Research indicates that although online exams can enhance efficiency, their overall success relies heavily on dependable technology and adequate user support (45). According to the studies, instructors also highlighted additional advantages: the flexibility to use diverse question types, a user-friendly interface, unique page designs, robust exam security through camera monitoring, and straightforward result display (20, 46, 47). From the perspective of students participating in the scientific Olympiad, advantages included the ability to create suitable questions, high test quality, engaging test format, strong institutional support for conducting online exams, and the opportunity to work with a variety of questions (33).

Reducing stress vs. heightened tension: Some instructors observed that switching to online exams during the COVID-19 pandemic reduced students' stress by removing the need to be physically present in exam halls. Conversely, other instructors noted that online exams actually heightened psychological pressure, particularly for capable, hardworking, and conscientious students. Believing that students might cheat more easily with online testing—a concern supported by some studies (48, 49)—these instructors responded by making exams harder and imposing stricter controls within the university's e-learning platform. This approach left conscientious students feeling dissatisfied and more stressed. Research from UAE University also showed students experienced increased stress during online assessments, with their attitudes toward learning varying by course and discipline. Preferences leaned toward synchronous lessons, and cultural factors influenced how students interacted with, accepted, and accessed remote education (35). These mixed outcomes reflect broader global patterns, where online exams can either reduce or increase stress depending on the context and available support.

The variation in faculty experiences can be explained by several factors:

- Institutional Readiness: Differences in available infrastructure and technical support.
- Faculty Training: Levels of digital skills and comfort with e-assessment technologies vary.
- Cultural Factors: Diverse perspectives on technology use and assessment honesty.
- Disciplinary Nature: Hands-on or practical subjects encountered more difficulties adapting to online formats.

These findings correspond with a broad range of research highlighting that the success of online assessments depends on a complex interplay of technological, educational, and organizational elements (15, 50).

Conclusion

The study found that some faculty members hold a negative view of remote online exams, believing they conflict with educational objectives. Their main concerns include diminished test credibility due to higher cheating risks, infrastructure issues,

and inadequate assessment of students' true knowledge and skills. Conversely, other faculty members highlighted benefits such as faster results, time and cost savings, fewer human errors, and enhanced learning processes, illustrating diverse attitudes among staff.

In light of these varying perspectives, universities are urged to create comprehensive policies that support both faculty and students in addressing the challenges posed by online exams.

Participants suggested several improvements to enhance remote exams in medical education, including conducting exams in specialized centers with infrastructure to monitor and minimize cheating, providing ongoing technical training for faculty, employing diverse assessment methods beyond solely online exams, allowing the use of other universities' exam centers for remote testing, and improving software infrastructure to address technical issues reported by faculty. These insights are vital for educational policymakers and administrators striving to improve the quality, equity, and effectiveness of remote assessments.

Limitations and Suggestions

One of the limitations of the current study was that it did not include the perspectives of students. Therefore, future research could address this gap by evaluating the satisfaction levels of both instructors and students with the effectiveness of the online exam system, drawing on the suggestions provided in this study. Incorporating student viewpoints would offer a more comprehensive assessment of the system's strengths and areas for improvement.

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Authors' Contribution

MH, MA, FI, AF, and JH were responsible for conceptualizing the study. MH handled the methodology and analyzed the data. AA conducted the interviews. The initial draft was written by MA and AF. All authors contributed to the review and revision of the manuscript. FI obtained funding and oversaw the project. All authors approved the final version of the manuscript.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Ethical Considerations

This study was approved by the Ethics Committee of Rafsanjan University of Medical Sciences (approval number IR.RUMS.REC.1399.239). Prior to participation, all individuals were thoroughly briefed on the purpose, methods, and processes involved in the study. Written informed consent was obtained from each participant, ensuring that their agreement to take part was in line with recognized ethical principles for studies involving human subjects. Additionally, strict measures were implemented throughout the stages of data analysis, result reporting, and publication to safeguard the privacy and confidentiality of all participant information.

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Availability of Data and Materials

The data supporting the findings of this study are available from the corresponding author, upon reasonable request.

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