



Policy considerations for enhancing online learning according to assessments of its quality by instructors and students

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Abstract

Objectives: This policy reviews factors affecting remote education quality, including technology access, digital literacy, learning environment, and motivation, and suggests actionable solutions.

Methods: A search of PubMed, Scopus, and Web of Science identified relevant studies from 2020 to 2023 in medical and health sciences. We assessed strategies or interventions meant to raise the standard of distance learning in the medical and health sciences.

Results: The review of studies showed that while faculty and students share some views, they differ on the importance of certain factors. Students emphasized technology access, motivation, and evaluation methods.

Conclusion: Addressing these dimensions is essential for virtual education quality in medical and health courses with implications for improving teaching and learning practices and actionable solutions.

Keywords: Remote Education, Equity, Policy Solutions, Health Sciences

Introduction

As more Iranian universities use virtual learning strategies, concerns have been raised about the quality of distance learning in the medical and health sciences. The COVID-19 pandemic increased online learning, emphasizing the need to understand the factors influencing its effectiveness. The shift to remote learning has presented challenges in maintaining instruction quality and student engagement ^[1].

Studies reported differences in technology access, with students facing unreliable internet connectivity and inadequate devices ^[2-4]. About 40% of Iranian medical students reported frequent disconnections during virtual lectures, directly impacting clinical skill acquisition. Faculty and students often lack training in digital tools, leading to ineffective use of learning systems and reduced engagement ^[5].

Scientific evidence, including findings from our recent study, demonstrates that several factors significantly influence the quality of remote education in health

sciences. These factors include technology access, basic skills, learning environment, learner motivation, course content and design, teaching quality, evaluation processes, and institutional support. The study revealed that course content, technology access, motivation, and evaluation processes are important in virtual education quality. Data from both faculty and students identified course content as crucial; faculty members rated this aspect slightly higher than students ^[5]. Studies show that success, satisfaction, availability, effectiveness, and engagement are the main components of e-learning. The absence of in-person interaction can prevent effective learning in medical education ^[6, 7].

A study reported differences in technology access among students influenced their engagement and academic performance in remote learning environments ^[8]. Additionally, research has emphasized the importance of digital literacy and effective online teaching strategies to ensure quality remote education in health sciences ^[9].

Additionally, the studies found significant differences in how students and faculty perceived the importance of

learner motivation, teaching quality, and evaluation processes, indicating the need for interventions [5, 7, 10]. Quality in remote education can affect the competence of healthcare professionals and the quality of healthcare delivery in Iran. Effective remote education can contribute to a more skilled workforce and economic productivity [11]. Financial limitations, however, limit Iranian universities' ability to make investments in high-quality virtual learning infrastructure.

Aims

This study addressed eight domains affecting remote education quality, including technology access, basic digital literacy, learning environment adequacy, learner motivation, course content and design, teaching quality, evaluation processes, and institutional support.

Methods

Databases such as PubMed, Scopus, Web of Science, and the Iranian databases IranMedex and Magiran were searched. Keywords used included "remote education," "online learning," "virtual education," "medical education," "health sciences education," "quality," "policy," "faculty development," "assessment," and their Persian equivalents. The search was limited to publications from 2020 to 2023.

Inclusion criteria selected systematic reviews, meta-analyses, and experimental studies that evaluated interventions or strategies aimed at improving the quality of remote education in medical and health sciences, especially in the Iranian context.

Data extracted from the sources included study design, characteristics of participants, description of interventions, key findings, and policy consequences. The results of the research and the JBI Manual for Evidence Synthesis (2024) for textual evidence were combined using a narrative synthesis approach.

The study analyzed factors influencing virtual education quality as identified in our previous exploratory study [5], specifically technology access, basic skills, facilities and educational environment, learner motivation, course content and lesson plan features, teaching quality, evaluation processes, and institutional support.

We combined data from studies by identifying factors influencing virtual teaching and learning methods as particularly perceived by students and faculty members.

Through a comparison analysis, contradictory data about how students and instructors perceive motivation, the level of instruction, and evaluation procedures were methodically reconciled. The results of research pertaining to instructor perspectives were examined independently from those pertaining to student perceptions.

We evaluated the applicability and relevance of evidence to the Iranian context. The process involved

challenges and opportunities influencing remote education quality identified in the authors' initial exploratory study of Iranian medical and health sciences institutions.

Results

The review of studies showed that while faculty and students share some views, they differ on the importance of certain factors. Students emphasized technology access, motivation, and evaluation methods [Table 1].

Table 1. Faculty and student priorities in relation to factors affecting the quality of virtual education

Factors	*Priority	
	Faculty	Student
Course Content and Design	High	High
Technology Access	Medium	High
Learner Motivation	Medium	High
Teaching Quality	High	Medium
Evaluation Processes	Medium	High

*The comparative emphasis that each group provided in the examined research is used to classify priorities as high, medium, or low.

Policy Options and Recommendation

Some policy options and Recommendations in this regard include the following:

1. Technology access:
 - 1.1. Challenges: 40% of students in Iran face unreliable internet [5].
 - 1.2. Policy solution: Successful models from Brazil and India demonstrated how government support for students could improve access [4].
 - 1.3. Learning Infrastructure: Iranian universities could establish or renew facilities as e-learning centers.
 - 1.4. Recommendation: Prioritize rural and low-income students in funding allocations. Within five years, the goal should be to raise the number of medical and health sciences students in disadvantaged areas by 50%, and within three years, 75% of students should have internet access for online learning activities.
2. Basic digital knowledge:
 - 2.1. Challenges: Faculty and students lack training in digital tools. Only 30% of Iranian medical faculty reported receiving any formal training in online teaching methods. Regression analysis indicated a significant positive correlation between faculty training hours and self-reported confidence in online teaching ($\beta = 0.72, P = 0.05$) [5].
 - 2.2. Policy options: Within three academic years, at least 80% of faculty members should receive training in digital skills through faculty development initiatives.
 - 2.3. Recommendations: Integrate digital knowledge modules into medical and health higher education

- programs.
3. Appropriate learning environment:
 - 3.1. Challenges: Around 60% of Iranian students report inadequate study spaces at home ^[5].
 - 3.2. Policy options: Design and develop effective virtual learning environments.
 - 3.3. Recommendations: Provide library hours and quiet zones on campus in Iranian universities.
 4. Learner motivation:

A study from Iran reported 65% of medical students reported decreased motivation during remote learning, consistent with global trends ^[5]. Factors reported contributing to this decline include insufficient interaction, challenges in concentration, and a disconnect between their online studies and real-life practice ^[7].

 - 4.1. Policy options: Engage students to participate in small online study groups. These groups are designed to facilitate students collaborating and studying together online.
 - 4.2. Recommendation: Encourage teachers to hold online hours by offering them some form of reward.
 5. Course content and design:

According to the analysis, 70% of Iranian courses rely on resources like PowerPoint presentations and PDFs ^[5]. Some universities use interactive content when teaching fields like medicine and health that require practical skills ^[10].

 - 5.1. Policy options: Developing interactive learning design methods such as simulations and video demonstrations that facilitate better skills and encourage critical thinking.
 - 5.2. Recommendation: Developing interactive learning design to enhance skill development and critical thinking. Although simulations and video demonstrations can be effective, their implementation should consider Iran's net limitations. We suggest using optimized video formats and compression techniques, providing alternative resources for those with limited access, and promoting asynchronous learning. We recommend research into interactive learning technologies that are specifically suited for the Iranian context.
 6. Teaching quality:

Faculty surveys indicated inadequate preparation for online teaching. Only 25% of Iranian medical educators felt confident in their ability to engage students in online courses ^[7].

 - 6.1. Policy Option: Provide faculty training and professional development in online teaching for 80% of faculty within three academic years.
 - 6.2. Recommendation: It is advised that systems for ongoing assessment and enhancement of online teaching methods be put in place, taking into account feedback from students. Set a three-year goal of 100% teacher engagement. In all online courses, reach a high average student satisfaction rating (4 out of 5) in four academic years.
 7. Evaluation processes:

Academic evaluation was significantly hampered by the assessments conducted online ^[1, 11]. The literature suggests that diverse assessment strategies can enhance student learning and engagement in online courses.

 - 7.1. Policy option: Develop and implement effective online assessment strategies.
 - 7.2. Recommendation: Use assessment methods in online courses, including formative and summative assessments.
 8. Institutional support:

Institutional support is essential for the success of online education courses. Only 20% of Iranian universities have specific units that support online learning. In contrast, 65% of medical universities in other countries have such support ^[1, 7]. A problem is the financial constraints within Iranian universities, which often limit their investment in online learning facilities and personnel.

 - 8.1. Policy option: Provide resources for online education, including funding, personnel, and infrastructure. by a 20% increase within three years.
 - 8.2. Recommendation: Encourage government agencies to collaborate with educational institutions to develop reliable internet access, targeting a 20% increase within a year.

Discussion and Implementation Considerations

Our analysis of faculty and student perceptions showed challenges in virtual education in Iran, including limited technology access, inadequate digital literacy, and concerns about teaching quality and evaluation processes. For improving the quality of virtual education, we suggest phased policy solutions by urgency, resource availability, and impact [Table 2].

The need to improve technological access is highlighted by the result that 40% of students have poor internet connectivity. This approach, inspired by successful models in Brazil and India ^[4], directly deals with the issue of unequal access and aims to ensure that a greater percentage of students have access to online learning.

Setting quantifiable goals enables us to assess the success of the suggested policies and enhance our tactics. Data on teaching effectiveness and student satisfaction will be obtained through the use of student evaluation of instruction, enabling us to continuously improve our strategies.

However, the implementation of these policies in Iranian universities faces significant barriers, particularly financial constraints. Universities in Iran have difficulty

funding new technological infrastructure, software licenses, and technical support. This financial pressure can hinder the establishment of online learning units.

Addressing these financial limitations is crucial for the success of virtual education.

Table 2. Policy suggestions and implementation actions for virtual education improvement

Phase	Policy Solutions	Implementation actions	Interested participants	Potential Barriers
Short-Term	Addressing needs and basic support	Training programs for faculty and students on online learning platforms aim for 80% faculty training within three years. - Support students to access necessary technology (laptops, internet), targeting a 20% increase within a year.	Institutions, policymakers, faculty, and students	Insufficient funding. - No access to technology. - Lack of digital skills.
Medium-Term	Integrating online courses into the curriculum and infrastructure development	Integrate skills and online teaching methods into the curriculum, considering Iran's infrastructure limitations, targeting 80% faculty participation within three years. - Improve internet and access to advanced learning technologies for 20% of students within a year.	Curriculum developers, educational institutions, technology providers, policymakers	- Resistance to change. - Poor connectivity.
Long-Term	Evaluation and development	Develop a digital education, including standards, guidelines, and funding. - Invest in research and development for innovative remote education technologies and training. - Establish centers for faculty development in online teaching and learning for all universities within a year.	Policymakers, research institutions, faculty development centers, and funding bodies	Time limitations for faculty.

Conclusion

The study concludes that several dimensions affect the quality of virtual education. It emphasizes the importance of factors such as course content and design, technology access, student motivation, and appropriate evaluation methods. The study suggests that considering these factors in teaching and learning can improve the quality of virtual education in medical universities.

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Competing interests

The authors declare that they have no competing interests.

Abbreviations

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None

Availability of data and materials

The data utilized in this study are available from the corresponding author upon request.

Ethics approval and consent to participate

The study received ethics approval for its implementation from the Ethics Committee of Semnan University of Medical Sciences, with the ethics code IR.SEMUMS.REC.1401.011.

Consent for publication

By submitting this document, the authors confirm their consent for the final accepted version of the manuscript to be considered for publication.

References

- Rajab MH, Gazal AM, Alkattan K. Challenges to Online Medical Education During the COVID-19 Pandemic. *Cureus*. Epub ahead of print 2 July 2020; doi: [10.7759/cureus.8966](https://doi.org/10.7759/cureus.8966); PMID: [32766008](https://pubmed.ncbi.nlm.nih.gov/32766008/); PMCID: [PMC7398724](https://pubmed.ncbi.nlm.nih.gov/PMC7398724/).
- Turnbull D, Chugh R, Luck J. Transitioning to E-Learning during the COVID-19 pandemic: How have Higher Education Institutions responded to the challenge? *Educ Inf Technol* 2021; 26: 6401–6419; doi: [10.1007/s10639-021-10633-w](https://doi.org/10.1007/s10639-021-10633-w); PMID: [34177349](https://pubmed.ncbi.nlm.nih.gov/34177349/); PMCID: [PMC8220880](https://pubmed.ncbi.nlm.nih.gov/PMC8220880/).
- Faturoti B. Online learning during COVID19 and beyond: a human right based approach to internet access in Africa. *Int Rev Law, Comput Technol* 2022; 36: 68–90; doi: [10.1080/13600869.2022.2030027](https://doi.org/10.1080/13600869.2022.2030027).
- Soares AA, Upadhyay NK, Bazhina MA, et al. A Study of Legal Education Systems in Russia, India and Brazil: Issues and Suggestions for Global Education. *Asian J Leg Educ* 2023; 10: 63–73; doi: [10.1177/23220058221105255](https://doi.org/10.1177/23220058221105255).

5. Hosseinabadi, S., Dehdashti, A., Saleh, E., Askaripour, T., Yousefzadeh, S., Fatemi, F., & Damyar N. Analyzing Related Factors and Dimensions of Quality Education Virtual: Perspectives from Students and Faculty. *Koomesh*; 15; doi: [10.69107/koomesh-151697](https://doi.org/10.69107/koomesh-151697).
6. Sarkar M, Liu K, Kumar A, et al. Student and Educator Perspectives of Adapting to Remote Health Professions Education: A Mixed-Methods Study. *Front Med*; 9. Epub ahead of print 30 May 2022; doi: [10.3389/fmed.2022.834228](https://doi.org/10.3389/fmed.2022.834228); PMID: [35712112](https://pubmed.ncbi.nlm.nih.gov/35712112/); PMCID: [PMC9196894](https://pubmed.ncbi.nlm.nih.gov/PMC9196894/).
7. Mahdavi Ardestani SF, Adibi S, Golshan A, et al. Factors Influencing the Effectiveness of E-Learning in Healthcare: A Fuzzy ANP Study. *Healthcare* 2023; 11: 2035; doi: [10.3390/healthcare11142035](https://doi.org/10.3390/healthcare11142035); PMID: [37510477](https://pubmed.ncbi.nlm.nih.gov/37510477/); PMCID: [PMC10379776](https://pubmed.ncbi.nlm.nih.gov/PMC10379776/).
8. Garlinska M, Osial M, Proniewska K, et al. The Influence of Emerging Technologies on Distance Education. *Electronics* 2023; 12: 1550; doi: [10.3390/electronics12071550](https://doi.org/10.3390/electronics12071550).
9. Schmidt LJ, DeSchryver M. The Role of Digital Application Literacy in Online Assessment. *J Educ Technol Syst* 2022; 50: 356–378; doi: [10.1177/004723952111052644](https://doi.org/10.1177/004723952111052644).
10. Kalantarion M, Ahmady S, Kallestrup P, et al. How to create a successful mobile learning strategy for medical education during lockdowns? *J Educ Health Promot*; 13. Epub ahead of print 2024. doi: [10.4103/jehp.jehp_167_23](https://doi.org/10.4103/jehp.jehp_167_23); PMID: [38559490](https://pubmed.ncbi.nlm.nih.gov/38559490/); PMCID: [PMC10979768](https://pubmed.ncbi.nlm.nih.gov/PMC10979768/).
11. Tabatadze S, Chachkhiani K. COVID-19 and Emergency Remote Teaching in the Country of Georgia: Catalyst for Educational Change and Reforms in Georgia? *Educ Stud - AESA*; 57. Epub ahead of print 2021. doi: [10.1080/00131946.2020.1863806](https://doi.org/10.1080/00131946.2020.1863806).

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