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Designing a Supervision Model for Internet-Based Remote Examinations to Reduce Student Cheating: A Qualitative Study

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Abstract

The present study was conducted with the aim of designing a monitoring model for internet-based remote examinations in order to mitigate academic dishonesty among students. This qualitative research employed a grounded theory approach, following the systematic procedure proposed by Strauss and Corbin. Data were collected through semi-structured interviews with 23 experts and key stakeholders, including faculty members, managers, and specialists from university examination units. A purposive sampling strategy was adopted, supplemented by the snowball technique. The trustworthiness of the data was established through member checking and expert validation by professors, while dependability was assessed via the test-retest method. Data analysis was performed across three stages—open, axial, and selective coding—using MAXQDA software. The findings revealed that the monitoring model for online examinations is influenced by causal conditions (including weak oversight systems, individual and psychological characteristics, and cheating facilitators), contextual conditions (encompassing cultural and social factors, a deficient educational system, and economic determinants), and intervening conditions (such as poor internet infrastructure, cybersecurity vulnerabilities, limited educational facilities, and cultural-ethical challenges). Proposed strategies to counteract these issues include refining examination procedures, strengthening authentication mechanisms, deploying electronic proctoring systems, ensuring content security, establishing clear regulatory frameworks, and implementing training and awareness programs to foster a culture of academic integrity. Ultimately, a paradigmatic model was put forward to enhance the monitoring of online examinations and effectively reduce cheating behavior.

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Extended Abstract

Introduction

The rapid expansion of virtual education and internet based remote examinations has raised serious concerns about academic dishonesty. While online assessments offer flexibility and efficiency, they also create unprecedented opportunities for cheating, undermining the validity and credibility of evaluation processes. Despite growing reliance on such examinations in Iranian higher education, there is no comprehensive, evidence based, and contextually relevant framework for effective supervision. Existing policies and guidelines remain largely focused on traditional, in person testing, leaving a critical gap in addressing the technological, cultural, and ethical challenges unique to remote proctoring. This study therefore aims to design a systematic supervision model for internet based remote examinations, grounded in the perspectives of educational experts, to reduce student cheating and restore trust in virtual assessment systems.

Method

This qualitative study employed the systematic grounded theory approach developed by Strauss and Corbin. Data were collected through semi structured interviews with 23 participants, including university faculty members and examination unit managers and specialists, all with at least 15 years of relevant experience. Purposive and snowball sampling techniques were used to ensure comprehensive and diverse perspectives. Thematic saturation was achieved after 20 interviews, with 3 additional interviews conducted for confirmation. Trustworthiness was established through member checking, expert peer review, and an inter coder agreement rate of 82% (calculated from three independent coding sessions), which exceeds the acceptable threshold. Data analysis proceeded in three stages—open, axial, and selective coding—using MAXQDA software, leading to the identification of 248 initial codes, 94 subcategories, and finally 19 main categories that form the structural backbone of the paradigmatic model.

Results

The analysis revealed that the supervision model is shaped by three sets of conditions. Causal conditions include weaknesses in existing monitoring systems, enabling factors for cheating (e.g., easy access to online resources, lack of deterrent penalties, inadequate teaching methods, and peer pressure), and individual psychological traits (such as low self esteem, exam anxiety, and instrumental attitudes toward grades). Contextual conditions encompass socio cultural factors (credentialism, parental competition, normalization of cheating, and information-oriented education), a weak educational system (ineffective vocational training, mismatch with labor market needs, and non practical content), and economic pressures (lack of entrepreneurial support, credential-based employment, and disconnection between education and industry). Intervening conditions include poor internet infrastructure (low speed, frequent disconnections, system limitations), cybersecurity vulnerabilities (privacy concerns, weak regulations, distrust in technology), uneven access to educational facilities, and cultural ethical challenges (parental opposition to surveillance equipment, privacy restrictions, and stress induced by monitoring). To address these, participants proposed strategies clustered into six categories: improving test design (e.g., varied question types, formative assessment, project based tasks, time constraints, and creative questioning); enhancing authentication (passwords, biometrics, facial recognition, keystroke dynamics, and blockchain logging); deploying electronic proctoring systems (automated monitoring, video summarization, and behavior analytics); securing content (browser lockdown, randomisation, and plagiarism detection); establishing clear regulations and disciplinary procedures; and implementing training and awareness programs for faculty, staff, families, and

students to foster a culture of integrity. The expected consequences of these strategies are twofold: educational outcomes (improved assessment credibility, reduced misconduct, and enhanced learning quality) and cultural outcomes (reinforced ethical values, increased social trust, and healthier academic competition).

Discussion

The proposed model shifts the view of proctoring from a purely technical control mechanism to a socio cultural and organisational phenomenon. It integrates causal, contextual, and intervening factors into a coherent framework, highlighting that effective supervision requires simultaneous attention to technological infrastructure, pedagogical design, institutional regulations, and individual behaviour. This holistic perspective is a key advancement over previous studies, which often treated cheating as an isolated issue. The model is particularly relevant for Iranian universities facing digital inequality, lack of standardised evaluation practices, and declining trust in online education. However, the findings are context specific and may not be directly generalisable to other settings; future quantitative research using structural equation modelling is recommended to test the model on larger populations. Nevertheless, this paradigmatic framework offers a practical roadmap for policymakers and administrators to redesign proctoring policies, improve assessment authenticity, and ultimately rebuild public confidence in virtual higher education.

Author Contributions: The conceptualization and design of the study were jointly developed by both authors. Abbas Mohammadi supervised the overall research process, conducted the data analysis, and prepared the initial draft of the manuscript. Seyed Mahmoud Haj Akbari contributed to data collection and interview coding. Both authors reviewed, revised, and approved the final version of the manuscript.

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Ethical Approval: All procedures performed in this study adhered to the ethical principles governing research involving human participants. Interviews were conducted only after obtaining informed consent from all participants. Furthermore, all collected data were analyzed strictly confidentially and anonymously to ensure privacy protection.