

Enhancing Faculty Competence in MCQs Construction Through Professional Development Workshops: A Qualitative Study

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Abstract

Background: Multiple-choice questions (MCQs) are among the most widely used assessment tools in medical and dental education because they facilitate objective evaluation of students' knowledge, reasoning, and clinical decision-making abilities. However, poorly constructed MCQs can reduce examination validity, encourage superficial learning, and fail to discriminate between different levels of student competence.

Objective: To explore faculty members' perceptions regarding the effectiveness of MCQ development workshops and identify perceived benefits, challenges, and recommendations for improving future training programs.

Methodology: A qualitative exploratory study was conducted at a private medical college between January and March 2026. Twenty faculty members representing both basic and clinical sciences were selected through purposive sampling after participating in an institutional MCQ development workshop. Semi-structured, face-to-face interviews were conducted using a validated interview guide. Interviews were audio-recorded, transcribed verbatim, and analyzed using Braun and Clarke's six-step thematic analysis approach. Credibility was enhanced through member checking, peer debriefing, and independent coding by two researchers.

Results: Four major themes emerged from the analysis: enhancement of assessment knowledge, increased confidence in MCQ construction, barriers to implementing learned practices, and recommendations for strengthening faculty development. Participants reported improved understanding of Bloom's taxonomy, item-writing guidelines, and cognitive level assessment. Time constraints, limited opportunities for feedback, and insufficient post-workshop mentoring were identified as significant barriers. Faculty recommended periodic refresher workshops, structured peer review, and institutional support for sustainable assessment improvement

Conclusion: Faculty perceived MCQ development workshops as valuable in improving assessment literacy and confidence in constructing high-quality examination items. Continued mentorship, regular refresher training, and institutional commitment are essential for sustaining improvements in assessment quality and promoting educational excellence.

Keywords: Faculty development, Multiple-choice questions, Medical education, Assessment, Qualitative research, Professional development, Faculty perceptions.

Introduction:

Assessment is a fundamental component of health professions education and serves multiple purposes beyond merely assigning grades. It evaluates students' knowledge, clinical reasoning, decision-making abilities, and readiness for professional practice while simultaneously guiding teaching strategies and curriculum improvement. Among the numerous assessment methods available, multiple-choice questions (MCQs) remain one of the most widely adopted tools in undergraduate and postgraduate medical education because they are objective, reliable, efficient to administer, and capable of assessing a broad range of curricular content (1).

The widespread use of MCQs in medical schools has increased considerably during the past two decades due to advances in competency-based education and standardized assessment practices. Well-designed MCQs allow educators to evaluate not only factual recall but also higher-order cognitive skills, including application, analysis, interpretation, and clinical reasoning. Such assessments contribute to ensuring that graduating healthcare professionals possess the competencies required for safe and effective patient care.

Despite their advantages, the educational value of MCQs depends largely on the quality of item construction. Poorly written questions frequently contain technical flaws such as ambiguous stems, implausible distractors, grammatical clues, cueing effects, negative phrasing, or multiple correct responses. These flaws reduce examination reliability and validity, increase construct-irrelevant variance, and may inadvertently reward test-taking skills rather than genuine knowledge. Consequently, assessment

experts consistently emphasize adherence to internationally recognized item-writing principles.

Developing high-quality MCQs requires specialized knowledge and continuous practice. Faculty members often possess excellent subject expertise but receive limited formal training in educational assessment. Many medical teachers begin constructing examination questions based primarily on personal experience rather than established psychometric principles. Without adequate preparation, examination items may fail to assess intended learning outcomes or discriminate effectively between high- and low-performing students.

Faculty development programs have therefore emerged as an essential strategy for strengthening educational quality within higher education institutions. Faculty development encompasses organized educational activities designed to enhance teachers' knowledge, instructional skills, assessment competence, leadership abilities, and scholarly productivity. In medical education, workshops represent one of the most frequently employed faculty development strategies because they provide opportunities for active participation, collaborative learning, practical exercises, and immediate feedback (2).

MCQ development workshops typically introduce participants to educational principles including constructive alignment, Bloom's revised taxonomy, blueprinting, cognitive level assessment, and internationally accepted item-writing guidelines. Participants engage in identifying flaws within existing examination questions, revising poorly constructed items, developing

new MCQs, and receiving structured feedback from facilitators and peers. Such activities aim to improve faculty competence while promoting consistency in institutional assessment practices (3).

Previous literature suggests that faculty development interventions positively influence educators' confidence and assessment knowledge. Participants frequently report increased awareness of common item-writing errors, improved understanding of cognitive levels, and greater appreciation for evidence-based assessment practices following structured workshops. Some institutions have demonstrated measurable improvements in examination quality through reduced item flaws, enhanced discrimination indices, and better alignment between assessment and curricular objectives.

However, improvements achieved immediately after workshops may not always translate into sustained changes in routine educational practice. Faculty often encounter barriers such as limited preparation time, competing clinical responsibilities, lack of institutional incentives, inadequate peer review systems, and insufficient follow-up mentoring. Consequently, some educators gradually revert to previous assessment practices despite recognizing the value of workshop training. Understanding these implementation challenges is essential for designing faculty development programs that produce lasting educational impact.

Another important consideration involves the context in which faculty development occurs. Most published studies evaluating MCQ writing workshops originate from high-

income countries with well-established educational support systems. Comparatively fewer qualitative investigations have explored faculty experiences within developing countries where resource limitations, increasing student enrollment, and competing institutional priorities may influence workshop effectiveness differently. Context-specific evidence is therefore necessary to guide institutional decision-making and optimize faculty development strategies.

Qualitative research provides a valuable approach for exploring participants' perceptions, experiences, motivations, and recommendations in depth. Unlike quantitative surveys that primarily measure satisfaction scores or knowledge gains, qualitative methods facilitate richer understanding of how educators interpret workshop experiences and integrate newly acquired knowledge into their teaching practice. Such insights can identify practical factors that contribute to successful implementation or hinder sustained improvement (4).

Furthermore, assessment literacy has become increasingly important with the growing emphasis on competency-based medical education, programmatic assessment, and continuous quality assurance. Faculty members are expected not only to write technically sound MCQs but also to ensure that assessment aligns with learning outcomes, supports student learning, and contributes to institutional accreditation requirements. Consequently, investment in faculty development has become both an educational necessity and a

strategic priority for medical schools seeking to maintain high academic standards.

Although numerous institutions conduct MCQ writing workshops as part of their faculty development initiatives, relatively limited evidence exists regarding how educators perceive these interventions beyond immediate post-workshop evaluations. Exploring faculty experiences may reveal strengths that should be maintained, weaknesses requiring modification, and opportunities for enhancing future educational programming. Such findings can support the development of sustainable faculty development models that extend beyond isolated workshops toward continuous professional learning (5).

The present study therefore aimed to explore faculty members' perceptions regarding the effectiveness of MCQ development workshops conducted at a private medical college. Specifically, the study sought to examine perceived learning experiences, identify facilitators and barriers influencing the application of acquired skills, and generate recommendations for strengthening future faculty development initiatives related to assessment practices. The findings are expected to contribute to the growing body of literature on faculty development in medical education and provide practical guidance for institutions seeking to improve assessment quality through structured professional development.

Methods:

A qualitative exploratory study design was employed to explore faculty members'

perceptions regarding the effectiveness of a Multiple-Choice Question (MCQ) development workshop conducted at a private medical college in Pakistan. A qualitative approach was considered appropriate because it enabled an in-depth exploration of participants' experiences, opinions, and perceptions related to the workshop and its influence on their assessment practices.

The study was conducted at a private medical college that regularly organizes faculty development programs to enhance teaching and assessment competencies. Data collection was carried out over a three-month period from January to March 2026 following the completion of a two-day MCQ development workshop. The workshop covered key concepts including principles of assessment, Bloom's revised taxonomy, blueprinting, common item-writing flaws, and practical exercises on constructing high-quality MCQs.

Faculty members from both basic and clinical sciences who attended the workshop constituted the study population. Participants were recruited using purposive sampling to ensure inclusion of individuals who had direct experience with the workshop and were actively involved in preparing undergraduate assessments. Faculty members with at least one year of teaching experience who completed the entire workshop and provided written informed consent were included in the study. Those who attended only part of the workshop, were not involved in student assessment, or declined participation were excluded. Recruitment continued until

thematic saturation was achieved, resulting in a final sample of twenty participants.

Data were collected through semi-structured, face-to-face interviews conducted within two weeks after completion of the workshop. An interview guide was developed following a review of the literature on faculty development and assessment in medical education. The guide included open-ended questions exploring participants' learning experiences, perceived improvements in MCQ writing skills, confidence in assessment practices, barriers to implementing newly acquired knowledge, and suggestions for improving future faculty development initiatives. Each interview lasted approximately 30–45 minutes and was conducted in a private setting within the institution. With participants' permission, interviews were audio-recorded and supplemented with field notes documenting observations and contextual information.

Audio recordings were transcribed verbatim and analyzed using Braun and Clarke's six-phase thematic analysis approach. Researchers first familiarized themselves with the transcripts through repeated reading before generating initial codes. Similar codes were then grouped to identify patterns and develop preliminary themes. These themes were reviewed, refined, and defined through an iterative process until consensus was achieved among the research team. Two researchers independently coded the transcripts to enhance analytical rigor, and discrepancies were resolved through discussion.

Several measures were adopted to ensure the trustworthiness of the findings.

Credibility was enhanced through member checking, whereby selected participants reviewed summaries of the interpreted findings to confirm their accuracy. Peer debriefing with experienced qualitative researchers further strengthened the analysis. Dependability was ensured by maintaining an audit trail documenting methodological decisions throughout the study (6). Confirmability was supported through reflexive note-taking to minimize researcher bias, while transferability was facilitated by providing a detailed description of the study context, participants, and research procedures.

Ethical approval for the study was obtained. Written informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity were maintained by assigning identification numbers instead of participants' names, and all interview recordings and transcripts were securely stored with access restricted to the research team.

Results:

Twenty faculty members participated in the study. Participants represented both pre-clinical and clinical departments with teaching experience ranging from two to twenty years. Twelve participants were female, while eight were male.

Thematic analysis generated four major themes and eleven subthemes describing faculty members' experiences following participation in the MCQ development workshop

PGQ scores exhibited:

- Strong negative correlation with SF-12 scores ($r = -0.69$, $p < 0.001$).
- Moderate positive correlation with TUG times ($r = 0.61$, $p < 0.001$).

From the above results, it can be seen that there was a relationship between the increase in SPD and an increase in poor quality of life and mobility problems.

Discussion:

The present study explored faculty members' perceptions regarding the effectiveness of an MCQ development workshop conducted at a private medical college. Overall, participants regarded the workshop as a valuable faculty development initiative that enhanced their knowledge of assessment principles, improved confidence in constructing multiple-choice questions, and increased awareness of common item-writing flaws. At the same time, participants highlighted several institutional and individual barriers that limited the long-term implementation of the skills acquired during the workshop. These findings emphasize that while faculty development workshops are beneficial, their effectiveness depends on continued institutional support and opportunities for sustained practice.

One of the most prominent findings of this study was the improvement in faculty members' understanding of assessment

principles. Participants reported that the workshop strengthened their knowledge of Bloom's revised taxonomy, blueprinting, and evidence-based guidelines for writing MCQs. Prior to the workshop, many faculty members relied primarily on their subject expertise rather than formal assessment principles when developing examination questions. Similar findings have been reported in previous medical education studies, where faculty development programs significantly improved participants' knowledge of assessment design and reduced technical flaws in examination items. Improved assessment literacy enables educators to construct questions that accurately measure students' knowledge, application, and critical thinking skills instead of simple factual recall (7).

Participants also expressed increased confidence in developing and reviewing MCQs after attending the workshop. The practical exercises, collaborative discussions, and facilitator feedback were considered particularly useful in translating theoretical concepts into practice. Faculty members reported greater confidence in identifying poorly written questions, revising existing items, and developing new questions aligned with intended learning outcomes. Increased confidence following faculty development has been consistently reported in the literature and reflects the importance of experiential learning in professional development. Workshops that provide opportunities for hands-on practice appear to be more effective than lecture-based training alone because participants immediately apply newly acquired

knowledge while receiving constructive feedback.

Another important finding was participants' increased awareness of common item-writing flaws. Faculty members recognized that negatively worded stems, implausible distractors, grammatical cues, and ambiguous wording reduce the validity and reliability of examinations. Awareness of these technical issues is essential because flawed questions may introduce construct-irrelevant variance, making examination scores less reflective of students' actual competence. Participants indicated that they had become more critical of their own assessment practices and intended to review questions more systematically before including them in future examinations.

Despite these positive perceptions, participants identified several barriers that limited implementation of workshop learning. Lack of time emerged as the most frequently reported challenge. Faculty members explained that teaching responsibilities, clinical duties, research commitments, and administrative work left limited opportunities to develop high-quality assessment items (8). This finding is consistent with previous studies indicating that competing professional responsibilities frequently hinder the application of educational innovations in medical schools. Institutions should therefore recognize assessment development as an essential academic responsibility and allocate protected time for faculty members involved in examination preparation.

The absence of continued mentoring and follow-up support represented another

important challenge. Participants believed that although the workshop successfully introduced assessment principles, there were limited opportunities to receive feedback once they returned to their departments. Without ongoing reinforcement, some faculty members feared gradually reverting to previous practices (7). Continuous mentoring has been recognized as a key component of successful faculty development because it facilitates skill retention, encourages reflection, and supports implementation of newly learned competencies. Establishing mentorship programs and departmental assessment committees may therefore help sustain improvements achieved through workshops.

Participants also emphasized the importance of collaborative peer review in improving examination quality. Several faculty members reported that examination questions were commonly prepared independently without systematic review by colleagues. Peer review allows educators to identify technical flaws, improve content validity, and promote consistency across departments. The establishment of departmental or institutional review committees could therefore contribute significantly to maintaining assessment quality while encouraging collaborative learning among faculty members.

The recommendations offered by participants provide valuable guidance for future faculty development initiatives. Regular refresher workshops, structured mentoring, online learning modules, departmental peer-review meetings, and institutional item banks were among the most frequently suggested strategies. These

recommendations indicate that faculty development should be viewed as a continuous process rather than a one-time educational event (8). Repeated training opportunities enable faculty members to refine their skills, remain updated with evolving assessment practices, and address challenges encountered during implementation.

The findings of this study have important implications for medical education institutions seeking to improve assessment quality. Investment in faculty development not only enhances educators' assessment competence but also contributes to more valid, reliable, and educationally meaningful examinations. High-quality assessments encourage deeper student learning, improve curriculum alignment, and strengthen institutional quality assurance processes. Therefore, educational leaders should prioritize sustainable faculty development strategies supported by adequate administrative commitment, protected faculty time, and ongoing evaluation (9).

The present study possesses several strengths. It included participants from both basic and clinical sciences, allowing diverse perspectives regarding the effectiveness of MCQ development workshops. The use of semi-structured interviews facilitated rich descriptions of participants' experiences, while thematic analysis enabled identification of recurring patterns across the dataset. Measures such as member checking, peer debriefing, and independent coding enhanced the credibility and trustworthiness of the findings.

However, certain limitations should be acknowledged. The study was conducted at a single private medical college, which may limit the transferability of findings to other institutions. The relatively small sample size, although appropriate for qualitative research, restricts generalization of the results. Additionally, participants' responses were based on self-reported perceptions rather than objective measures of improvement in MCQ quality. Future studies may combine qualitative findings with psychometric analysis of examination items before and after faculty development interventions to evaluate actual improvements in assessment quality. Multi-center studies involving public and private medical institutions would further strengthen the evidence regarding the long-term effectiveness of faculty development workshops.

Conclusion:

Faculty members perceived MCQ development workshops as an effective means of enhancing assessment knowledge, improving confidence in constructing multiple-choice questions, and increasing awareness of evidence-based item-writing principles. Participants particularly valued practical exercises, collaborative learning, and facilitator feedback, which facilitated the application of theoretical concepts to examination development. Nevertheless, challenges such as limited time, competing professional responsibilities, insufficient follow-up mentoring, and lack of structured peer review restricted the sustained implementation of workshop learning. The findings suggest that faculty development should extend beyond isolated workshops and incorporate continuous mentoring, regular

refresher training, departmental peer review, and institutional support to promote long-term improvements in assessment quality. Strengthening faculty competence in assessment practices has the potential to enhance the validity and reliability of examinations, improve student learning outcomes, and contribute to the overall quality of medical education.

Authors' Contribution:

AJ was involved in conception and design of the study, acquisition of data, and analysis and interpretation of data. UBN participated in critical review of the manuscript and gave final approval to publish the manuscript. Both the authors have seen and approved the final manuscript.

Conflict of Interest:

Authors declare no conflict of interest.

Funding and Ethics:

This research was self-funded by the author.

The study was conducted in accordance with ethical guidelines.

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