

Implementation and evaluation of a needs-based faculty development programme in a medical college of Pakistan: A mixed methods action-research

Muhammad Abdullah Qazi, Fatima Aman, Maidha Jadoon, Masooma Rafique, Summara Khan, Raima Bilal Khan

Abstract

Objective: To implement and evaluate a needs-based faculty development programme in a female-only medical college.

Method: The mixed methods study was conducted in 2022-23 at the Women Medical and Dental College, Abbottabad, Pakistan. The faculty needs assessment was conducted in February 2022 using an online questionnaire, followed by identification of institutional needs through consultation in various organisational forums. Faculty development activities were planned and implemented in 2022-23 based on the needs assessment. At the end of each faculty development activity, the participants were asked to fill a feedback questionnaire. At the conclusion of the programme, 10 individual semi-structured face-to-face interviews were conducted, and the data was thematically analysed to evaluate the programme.

Results: Areas including development of multiple choice questions, use of teaching aids, medical education research, curriculum development, leadership in medical education, time management, and small group interactive teaching were identified during the needs assessment phase. The total average feedback score for all activities combined was 4.2 out of 5 (SD=0.17), with positive feedback in open-ended questions. Five core themes emerged from the interview data: teaching skills development, applicable content, needs-based programme, networking opportunities, and learner-centred activities.

Conclusion: Faculty development programmes should be needs-based, and should focus on context-specific content, learner-centred activities and networking opportunities. Continuous evaluation of the programme is an important element.

Keywords: Faculty, Needs assessment, Capacity-building, Education, Medical. (JPMA 75: 1714; 2025)

DOI: <https://doi.org/10.47391/JPMA.20922>

Introduction

Faculty development (FD) in medical education is a crucial aspect of enhancing the effectiveness, skills and overall growth of educators.¹⁻³ FD can be defined as the intentional and systematic process of enhancing the skills, knowledge and capabilities of educators within an academic institution through various initiatives, programmes and activities.^{2,4} These efforts are designed to improve teaching effectiveness, enhance research competencies, foster leadership skills, and promote overall professional growth among faculty members.^{1,2} FD encompasses a wide range of activities, including workshops, seminars, mentoring programmes, research opportunities, and collaborative projects, all aimed at cultivating a vibrant and effective academic community. By investing in FD, institutions can create a learning environment that benefits both faculty members and students.^{5,6} FD programmes contribute to the overall advancement of academic institutions and all stakeholders.^{3,7}

Research has consistently demonstrated that FD has a positive impact on both teaching and learning. Faculty

members who actively participate in FD programmes often report increased job satisfaction and improved teaching effectiveness.⁸⁻¹⁰ This improved teaching effectiveness is closely associated with the adoption of innovative teaching techniques, active learning, and inclusive pedagogical practices. Moreover, FD has been found to enhance student learning outcomes, leading to higher levels of student engagement, better retention rates, and improved academic performance.^{5,6,11} Along with teaching, FD programmes also support scholarly activities and research. Faculty members who participate in these programmes tend to become more engaged in research projects, ultimately contributing to the productivity and growth of their respective fields.^{1,3,6} This is particularly critical for institutions aiming to strengthen their research culture and output.

Due to multiple positive outcomes of FD and the continued growth of educational environments, these programmes have gained attention over the past few years in Pakistan.^{12,13} These programmes aim at enhancing the capabilities of faculty members and empowering them to meet the diverse needs of Pakistani students. A mixed methods study¹² identified the major components of FD in Pakistan, highlighting the importance of research skills development, pedagogical training and mentorship. The faculty participating in these programmes showed improved teaching effectiveness and increased job

Women Medical and Dental College, Abbottabad, Pakistan.

Correspondence: M. Abdullah Qazi. e-mail: abdullah.qazi8@gmail.com

ORCID ID: 0000-0003-2126-5553

Submission complete: 29-06-2024 **1st Revision received:** 03-09-2024

Acceptance: 02-08-2025 **Last Revision received:** 01-08-2025

satisfaction.¹² FD programmes in Pakistan often encourage active learning, innovative teaching practices, and inclusive pedagogical approaches fashioned to the local context.¹²⁻¹⁴ Additionally, FD programmes in Pakistan promote scholarly activities and research. A study¹⁴ highlighted the positive impact of FD in Pakistan on research productivity and the strengthening of research culture within institutions.

Pakistan's academic institutions have the potential for growth and innovation. However, the lack of robust FD initiatives hinders their progress.¹⁵ Despite the work being done on FD programmes, Pakistan is still facing a significant deficit in this area due to several challenges, such as limited funding and resources for these programmes.¹⁶ Various problems in the teaching and learning process of higher education institutions in the country have also been identified.¹⁶ Ensuring that FD programmes meet the specific needs of diverse institutions and faculty across the country is a challenge.¹⁴ It is crucial to plan and customise FD initiatives to address Pakistan's socio-cultural and linguistic diversity. Planning, implementation and evaluation are important components that can make an FD programme successful.^{2,4,17} These should be based on faculty needs and institutional demands.^{2,18} The current study was planned to implement and evaluate a needs-based FD programme in a female-only medical college in Pakistan.

Materials and Methods

The mixed methods study was conducted in 2022-23 at Women Medical and Dental College, Abbottabad (WM&DC) in the Khyber Pakhtunkhwa (KP) province of Pakistan. The principles of action research¹⁹ were used, with a focus on development of a structured, needs-based FD programme, in line with the faculty development needs of academic doctors after identifying the elements that should be incorporated in a faculty development programme, and then to assess the impact of the programme.

The study was divided into three phases; needs assessment, FD activities and feedback, and in-depth evaluation of the programme. Approval was obtained from the institutional Board of Governors (BOGs), the Academic Council, and the ethics review committee.

In the first phase, the needs of the faculty and institutional demands were identified using an online Google Forms survey questionnaire in February 2022. The questionnaire included pre-defined areas that were identified in a meeting by the Medical Education Department, Quality Enhancement Cell (QEC), and the institutional Research Cell. The questionnaire also included an open-ended

Table-1: Faculty development activities.

SR#	Activities	Topic	Duration
1	Workshop	MCQs Development	2 days (3 hrs. daily)
2	Seminar	Quality Enhancement in Medical Education	2.5 hrs.
3	Workshop	Research Methods in Medical Education	4 hrs.
4	Seminar	Career Progression: - Career Progression of Female Doctors - Work-Life Balance - Leadership Skills - Workplace Harassment - Career Opportunities - Online Learning Management System	3 hrs.
5	Workshop	Use of Teaching Aids	3 hrs.
6	Workshop	Small Group Interactive Teaching	3 hrs.
7	Seminar	Quality Education in Medical & Dental Institutes	2 hrs.
8	Symposium	Curriculum Development: Study Guides	3 hrs.
9	Workshop	Time Management	3 hrs.
10	Workshop	Basics of Qualitative Research	3 hrs.

MCQs: Multiple choice questions.

question for any other suggestions by the faculty members. The questionnaire link was shared with all the medical and dental faculty via the Learning Management System (LMS), email and WhatsApp groups. Institutional level consultation was carried out to identify institutional demands in terms of FD in WM&DC. BOGs, AC and curriculum committees held meetings to identify the institutional demands.

In the second phase, based on the needs assessment, FD activities were planned and implemented (Table 1). The FD programme lasted from May 2022 to November 2023 during which six workshops, three seminars and one symposium were organised. Seminars had a larger audience, and was less interactive. Workshops had smaller number of participants and were more interactive with pre-defined content. In the symposium, the participants acted like facilitators for collective development of a particular topic.

At the end of each FD session, the participants were asked to fill a 12-item feedback questionnaire using a 5-point Likert scale, ranging from 'strongly agree' to 'strongly disagree'. Two open-ended questions were included at the end of the questionnaire, making the total number of questions 14.

In the final phase, 10 semi-structured individual interviews with the participants were carried out using purposive sampling.²⁰ The participation was voluntary and written informed consent was obtained. This was done for in-depth exploration of the core elements of the FD programme, and to evaluate its impact. The interviews were conducted in English and Urdu languages based on the participants'

preferences. These were audio-recorded, transcribed and translated to the English language, where necessary, for analysis. The representation of participants from all FD activities was ensured.

For phases 1 and 2, quantitative as well as qualitative data analysis methods were employed retrospectively. For needs assessment and feedback of FD activities, descriptive statistics and documentary analysis was conducted on Google Forms, Google Sheets and Excel spreadsheets. Both the needs assessment and feedback questionnaires contained Likert scale questions as well as open-text spaces. Likert scale responses were analysed quantitatively, whereas qualitative analysis was carried for data in open text spaces. This identified the needs of the faculty in terms of FD activities, and evaluated the feedback of the participants in each workshop.

For the data related to phase 3, Braun and Clarke's²¹ six-phase thematic analysis was utilised to analyse the qualitative data. After familiarisation with the data, initial coding was generated by four different research team members in pairs, which was cross-matched to ensure that no important information was missed. The initial codes were grouped into themes. The themes and preliminary findings were discussed and reviewed by all research team members to conclude with final themes. The participants' names were coded, and all data was linked to an identifier sheet to ensure confidentiality and anonymity. Codes, including 'M' for males and 'F' for females with a number signifying the sequence of interview, were used.

Results

Of the total 195 undergraduate faculty members, 115(59%) were females and 80(41%) were males.

Of the total, 34(17.4%) subjects responded to the faculty needs assessment questionnaire. The top five priorities included multiple choice questions (MCQs) development, use of teaching aids, medical education research, curriculum development, and time management. Institutional-level consultation identified topics, including quality enhancement in medical and dental institutions, small group interactive teaching, use of learning management systems, career progression in academic medicine, and leadership and management in medical education. The majority of the respondents in the faculty needs assessment form 23(67.6%) thought FD activities should be conducted face-to-face compared to online.

The FD activities were attended in all by 359 participants, with some faculty members attending more than one FD activity. The feedback form was returned by 131(36.5%). The two open-ended questions (Nos 13 and 14) were

Table-2: Feedback to the faculty development process.

Questions in Feedback Forms	Average Score Mean±SD
The overall organisation and structure of the session was excellent.	4.2±0.45
The objectives were clearly communicated at the beginning.	4.4±0.36
The materials and resources provided were helpful and relevant.	4.3±0.51
The activities and exercises were engaging and interactive.	4.1±0.66
The duration and pace were appropriate.	4.1±0.45
The session met my learning goals and expectations.	4.2±0.63
The facilitator had strong knowledge and expertise on the session topic.	4.5±0.37
The session offered opportunities for hands-on practice or application of the concepts.	4.1±0.53
The session provided adequate resources or recommendations for further learning.	4.1±0.63
Were there any specific topics or areas that you would have liked to see covered in more detail?	3.9±0.42
The session provided sufficient opportunities for feedback and questions	4.3±0.62
I was satisfied with the session logistics, such as venue, timing, materials, and management	4.2±0.47
Would you recommend this seminar to others interested in the topic? Why or why not? Add your comments?	Open text
What did you like most & least about the session? Do you have any suggestions for us to improve future events?	

responded to by 68(51.9%) and 69(52.7%) subjects. The lowest mean feedback score was for Question 10, which was further explored in open-ended questions and interviews (Table 2).

Some important quotes emerging from responses to questions 13 and 14 were:

Q-13: *"I would encourage my colleagues to attend such workshops as they are very informative about our teaching methodology and will help educators and learner alike."*

Q-13: *"Definitely. The workshop provided insights to the topic very effectively and gave learning opportunity to enhance our professional capacity. It is a great initiative."*

Q-14: *"Being informative and interactive was the plus points, while resources and time management can be improved."*

Q-14: *"I liked the fact that it was all-encompassing. It was not boring and engaged the audience very well. It was a fun experience with a lot of learning. I cannot recall anything I did not like. Moreover, the team is very professional, polite and humble which is a plus. I would only suggest them to keep up the good work."*

In the third phase, there were 10 participants; 8(80%) females and 2(20%) males with overall mean age 34.9±8.39 years range: 27-48 years). The total feedback score for all the 10 FD activities was 41.8 out of a possible maximum of 50, with Career Progression Seminar scoring the lowest mean value (3.3±0.26) and Time Management Workshop obtaining the highest mean feedback score (4.5±0.25)

Table-3: Activity-based feedback to the faculty development process.

Faculty Development Activity	Average Feedback Score \pm SD	Number of Participants	Responses
MCQs Development	4.4 \pm 0.24	27	11
Quality Enhancement in Medical Education	3.9 \pm 0.62	72	19
Research Methods in Medical Education	3.9 \pm 0.37	26	19
Career Progression Seminar	3.3 \pm 0.26	63	8
Use of Teaching Aids	4.5 \pm 0.27	32	12
Small Group Interactive Teaching	4.6 \pm 0.30	22	11
Quality Education in Medical & Dental Institutes	4.0 \pm 0.63	58	21
Curriculum Development: Study Guides	4.3 \pm 0.28	23	10
Time Management	4.5 \pm 0.25	19	8
Basics of Qualitative Research	4.4 \pm 0.24	17	12
Total Feedback Score / Total Participants / Total Responses	41.8	359	131

MCQs: Multiple choice questions.

(Table 3). A total of five major emerging themes were identified.

The first theme was Teaching Skills Development. The participants said they had participated in the FD programme as they believed that it would enhance their teaching skills. *"I enrolled in this programme to enhance my teaching skills and improve my overall effectiveness as an educator."* (Participant 4F)

The participants thought that FD programmes could enhance the teaching skills of faculty in medical colleges. They believed that these skills would benefit the students as a result. *"These programmes help you enhance your ability to teach and engage students."* (2F)

It was believed by the participants that the FD Programme 2022-23 was transformative in terms of their teaching practice. *"My experience was very transforming and enriching. It enriched my pedagogical skills and my teaching methodology."* (9F)

The participants suggested that these programmes should be implemented in other medical colleges of Pakistan to enhance the quality of learning and teaching in the country. *"I think every college and university should conduct faculty development programmes as most of our faculty members need to learn a lot."* (7F)

The second theme was Applicable Content. It was identified that FD programmes should include content that is applicable to faculty members' current teaching practices. The participants believed that content applicable to their own teaching context was appealing. *"I wanted to learn new techniques that I could incorporate into my teaching style."* (9F)

The participants thought that the content covered in different workshops, seminars and symposiums in the FD programme was contextual. They thought it was applicable to their own teaching practices. *"The programmes made*

the faculty learn them, apply them, and use them for student development." (8M).

However, the participants believed that some areas could be improved by making them more specific to classroom teaching.

The third theme was Needs-Based Programme. The participants believed that the FD programme was successful because it was based on the needs of the faculty.

"The choice of the topics was appropriate and aligned with faculty's needs." (4F).

The faculty members were able to choose the FD activity based on their own needs and what they perceived would help them in their own teaching practice. *"The topics covered in the programme were definitely relevant and the need of my job."* (3F)

The fourth theme was Networking Opportunity. The participants thought that the activities helped them build networks which they believed would facilitate them in navigating their careers. *"The programme provided valuable opportunities for networking, and I got to know other basic department and clinical faculty."* (4F)

The fifth theme was Learner-Centred Activities. The participants thought that the FD activities were learner-centred. They believed that the interactivity of the workshops kept the participants engaged. *"I thought that these workshops would be regular boring workshops where the speakers would talk and give us lectures, but these workshops were very nice and engaging."* (1F)

Discussion

Research has shown that FD programmes can enhance the teaching skills of faculty in medical education.^{1-3,8-10,12} This can ultimately benefit the students as well as the institution.^{1,3,5-7,11} Similarly, the current study has shown that FD in WM&DC facilitated the faculty members in pedagogy. FD is a continuous process of planning, implementation and evaluation.^{2,22}

In the planning phase, the needs of the faculty and institutional demands must be identified.^{2,18} There is evidence that a needs-based FD programme encompassing the needs of the faculty and institutional demands can enhance the initiative.^{2,18} The current qualitative analysis and some previous studies from the country showed that this was true in the Pakistani context as well.^{12,13,15} Similar to the current study, literature has identified areas, including curriculum development, research skills development, leadership training, communication skills, teaching skills, stress management

and MCQs development for FD activities in medical colleges.^{13,15}

Similar to previous studies, the current study showed that FD programmes can provide networking opportunities to faculty members.^{3,23} This is especially beneficial for female faculty members. Evidence has suggested that women in academia find it more difficult compared to their male counterparts to build networks and that can hinder their career progression.^{24,25} Moreover, the literature suggests that collaboration with other educational institutes in FD programmes can enhance its effectiveness, which can also create networking opportunities with professionals outside the organisation.^{4,22}

The current study found that a core element that should be considered in FD programmes is interactivity of such activities. This study found that the activities were most effective when participants were actively involved in the learning process rather than them being passive. Evidence has also suggested that interactive learning opportunities can enhance the level of interest of the participants, making the learners part of the knowledge construction process.²²

The content of FD activities should be according to the participants' teaching context. In other words, the activities in FD programmes should focus on content that is applicable to the learner's context. The current study, in line with literature, has shown that content that is relevant to the participants' own workplace and teaching environment benefits the faculty the most.^{1,2,4} This also increases the level of interest and focus of the participants during the FD activities.

Evaluation of the FD programme is an important element in creating a sustainable and continuous programme.^{2,17,22} In the current study, feedback from the participants post-activity helped in the identification of areas of improvement specific to the delivery of a particular activity. In-depth interviews provided deeper insights on the FD programme.

The current study has limitations as it was conducted in one medical college of Pakistan, and there may be contextual differences in other settings. Besides, there were only two male interviewees compared to eight females. However, female participation in the FD activities was also higher than their male counterparts.

Conclusion

An effective FD programme should be based on faculty needs and institutional demands. The content in these activities need to be applicable to the participants' own context, workplace and teaching environment.

Incorporation of interactive activities in the programme can help participants engage at a deeper level of learning. These activities can create networking opportunities for the faculty which can facilitate their career progression. Evaluation of FD programmes, in terms of individual activity and as a whole, can inform future changes, contributing to its continuity and sustainability.

Acknowledgement: We are grateful to the staff of the Quality Enhancement Cell (QEC) of the Women Medical and Dental College (WM&DC), especially Miss Rivish Jadoon, Miss Aneela Khurshid and Mr Wadeed-ul-Janaan, for facilitating the research.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

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Author Contribution:

MAQ: Concept, design, leading the team, data collection, analysis and final write-up.

FA & MJ: Data collection, analysis including coding and thematic analysis.

MR: First draft write-up and implementation of program.

SK: Implementation of program, coding and thematic analysis.

RBK: Coding and thematic analysis.