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The Prioritized Components of Research Skills and Competencies from the Perspective of Teacher Educators



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# "Colloquium"

# The Prioritized Components of Research Skills and Competencies from the Perspective of Teacher Educators

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### **Highlights**

- The study aimed to understand the research skill development needs of faculty members at Teacher Education Universities in Iran; and to inform the design of appropriate faculty development programs.
- The study employed a mixed-methods approach to elicit faculty members' ideas and beliefs about the key research skills they need to develop. The qualitative analysis identified eight main themes related to faculty research skill needs, including understanding research methodology, applying research to practice, data analysis, communication, collaboration, thinking, research ethics, and knowledge of the education system. The quantitative results showed faculty valued skills related to research methodology and data analysis the most, while ethical considerations and education system knowledge were the lowest priorities.
- The findings from this comprehensive needs assessment can inform the design of faculty development programs to help teacher education faculty enhance their research skills, improve their teaching practices, and ultimately strengthen teacher education programs. The study highlights the importance of systematically supporting faculty members' research capabilities as a way to raise the reputation and quality of universities.

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**Keywords:** Needs Analyses; Teacher Educators; Faculty Development Program; Research Skills; Perceptions

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#### Introduction

Farhangian University (teacher education universities in Iran), with 98 branches established in 2012, are crucial for teacher training. Faculty members are the key resource, and their professional development is vital for providing quality education (Ghorooneh, 2020). However, many lack formal instruction in essential areas, highlighting the need for new and effective teaching methods. The Faculty Development Program (FDP) aims to enhance faculty skills and knowledge, addressing the fast-changing landscape of higher education (Sorcinelli, 2020). A thorough needs assessment is essential for effective FDP implementation, identifying gaps between current and optimal skills and knowledge levels. This process is crucial for systematic and realistic planning, providing a clear picture of faculty needs and guiding further progress (Farzi et al., 2021; Schmid et al., 2021).

Research and scholarship are primary requirements for teacher education faculty, yet few participate due to a lack of knowledge, skills, and resources. Despite attending graduate schooling and research seminars, faculty members' research skills often remain untapped. Limiting factors such as data availability and time constraints also hinder their participation in quality research projects (Nejatizadeh et al., 2016).

This study conducted a needs assessment at one Teacher Education University branch to describe the current status of its faculty members and discover their needs to improve research skills. The aim was to identify and prioritize educational needs in the realm of research, using the results to plan in-service training courses, enhance faculty research skills, and promote research development. The study sought to assess the required knowledge and skills in research, aiming for a practical program that would encourage faculty to develop their research skills, boost research culture, and increase research productivity. The needs assessment can enhance current and future performance or address existing weaknesses. The study addressed the following research questions:

- 1. What competencies and skills make teacher education faculty proficient researchers?
- 2. What are the prioritized components of research skills and competencies from the perspective of teacher education faculty?

#### **Research Methodology**

This study developed a comprehensive research empowerment model for teacher education faculty in Iran, exploring factors to inform a Faculty Development Program (FDP) that can support faculty in academic promotion. It used a mixed-methods approach, incorporating interviews and surveys, to elicit faculty perspectives on needed research skills. The study used purposive sampling to recruit experienced teacher education faculty for interviews and surveys. 34 faculties were interviewed until data saturation. 185 faculties from Humanities and Basic Sciences colleges later participated in the quantitative survey phase.

This mixed-methods study collected qualitative data through open-ended interviews and quantitative data through a self-report survey. The survey was developed based on themes from the interviews and reviewed by experts. It assessed the importance of various content modules for a research empowerment program for teacher education faculty.

#### Khatibi, M. B.

Factor analysis supported the validity of the survey, and its reliability was reported as acceptable.

This mixed-methods study conducted 34 semi-structured interviews lasting 60-75 minutes to explore perspectives on a research empowerment program for teacher education faculty. The interview data was transcribed, coded, and analyzed using thematic analysis, with an external coder to ensure reliability. The survey development was informed by the interview themes. Quantitative analysis was performed using SPSS and Excel. The integration of qualitative and quantitative data followed an exploratory sequential design.

#### **Results**

#### Phase 1. Qualitative Results

Qualitative data analyses were conducted using thematic analysis (Braun & Clarke, 2006) to realize the meaning and features of gathered data. After analyzing the qualitative data, the researcher and assistant coder ended up with three main themes and eight sub-themes regarding the competencies and skills that make teacher education faculty proficient researchers. (see Table 1.)

Table 1.

Emerged Themes and Sub-themes on the Competencies Skills Making Teacher Educators Proficient Researchers

Themes	Sub-themes
Abilities	Ability to understand research methodology
	Ability to apply research findings to practice
Skills	Data analysis skills
	Communication skills
	Collaborative skills
	Critical thinking skills
Knowledge	Knowledge of ethical considerations
	Knowledge of the education system

Faculty emphasized the need to develop expertise in quantitative and qualitative research methods, data visualization, interdisciplinary collaboration, and translating research into practical recommendations for teacher education. Ethical considerations, such as participant confidentiality and managing conflicts of interest, were also highlighted as important knowledge domains. Overall, the findings point to a multifaceted approach to empowering teacher education faculty as skilled and proficient researchers.

#### Phase 2. Quantitative Results

Based on the qualitative findings, a survey was developed to prioritize the key components of a research empowerment program for teacher education faculty. The survey assessed the perceived importance of various abilities, skills, and knowledge areas on a 10-point scale. The internal consistency was high ( $\alpha$ =0.85). The top priorities were understanding research methodology and data analysis skills, followed by communication and collaboration skills. Applying research to practice and critical thinking were also highly valued. Knowledge of ethics and the education system were relatively lower priorities. (see Table 2.)

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#### Colloquium

Table 2.
Perceived Priority of the Eight Main Themes

Main themes emerged in the qualitative phase	Faculty members perceived the priority of the main themes	
Ability to understand research methodology	10	
Data analysis skills	10	
Communication skills	9	
Collaborative skills	8	
Ability to apply research findings to practice	7	
Critical thinking skills	7	
Knowledge of the education system	6	
Knowledge of ethical considerations	5	

The Kruskal-Wallis test was used to compare the prioritization of the 8 main themes, as the rating data was ordinal in nature. The results showed a statistically significant difference (p<0.05) in the degree of agreement across the themes, indicating they were prioritized differently by the respondents. (see Table 3.)

Table 3. Kruskal-Wallis Results

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Kruskal-Wallis H	31.39		
df	7		
Asymp. Sig.	.000		

The ability to understand research methodology was the top priority for teacher education faculty, with all six sub-themes rated as very important on the survey. Data analysis skills were also a top priority, with all seven sub-themes rated as very important by the teacher education faculty, according to the survey results. Communication skills were the second highest priority, with presentation and academic writing skills rated as very important, while other sub-themes were seen as less important by the teacher education faculty. Collaborative skills were the third highest priority, with networking and accessing new expertise rated as very important, while working in teams was seen as less important by the teacher education faculty. Teacher education faculty ranked applying research findings to teaching practice as the 4th most important skill. Sub-themes like using research to design courses were seen as very important, while others were less so. Teacher educators ranked critical thinking skills 4th, with evaluating research itself seen as most important (score 10). Applying research findings to teaching (score 9) was also highly valued, while some sub-themes were less important. Teacher educators ranked knowledge of the education system 5th for research skills. They highly valued research that improves learning outcomes (score 10) but viewed other sub-themes as less important. Teacher educators ranked ethics in research 6th. Responsible conduct (score 9) was seen as very important, while ensuring data accuracy and other sub-themes were considered less important.

#### Discussion

This study explored what skills teacher educators need to be good researchers (question 1) and how important they view those skills (question 2). Interviews revealed faculty felt they lacked research skills and opportunities to practice. Common needs included research design, data analysis, and sharing findings. Faculty felt their graduate studies hadn't prepared them enough for research, highlighting a need for better research training in teacher education programs.

This study aligns with Algahtani et al. (2020) who identified faculty development needs in medical education. Both studies aimed to find the most important skills for faculty, focusing on research skills in this case. In addition, this study's findings mirrored Hosseinzadeh et al. (2020), who identified similar research skill needs for faculty in Iran. Both studies categorized needs but differed by including factors like gender and academic rank in the latter.

This study, unlike Shafaei-Khanghah et al. (2017), found faculty prioritized research methodology and data analysis, not writing in English. Faculty saw knowledge of education systems and ethics as less important, possibly due to context, attitudes, or personal goals.

#### Conclusion

The study highlights the importance of enhancing research skills among teacher education faculty to improve program quality and advance the field. It offers evidence-based recommendations for faculty and developers to enhance FDPs, benefiting all stakeholders. The research helps faculty stay current with trends, improve teaching, and develop programs. It also informs curriculum development by identifying essential research skills for faculty development courses, ensuring faculty are well-prepared for research and mentoring.

Faculty with strong research skills can engage in evidence-based practices, contribute to educational research, and innovate teaching methods. The study promotes a research culture, encouraging faculty to participate in research, collaborate, and contribute to educational knowledge. Institutions can use the findings to assess faculty research skills and identify areas for improvement, fostering self-reflection and professional growth.

However, the study faced limitations, such as time constraints, which prevented a longitudinal exploration of FDP's long-term effects. Comparing FDP outcomes with other faculty development programs could highlight its unique aspects and effectiveness. Additionally, the study focused on one FDP aspect, so assessing the impact of specific strategies like mentorship or collaborative research is recommended.

The research was conducted on a limited number of faculty in specific teacher education university branches in Iran, so further studies in different contexts could reveal how contextual factors influence outcomes. Finally, considering the indirect effects of FDP on students' learning outcomes is suggested for future research.

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#### Colloquium

#### **Declaration of Conflicting Interests**

The author declares that there are no competing interests.

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# **Human Participants**

There were human participants, all of whom consented to take part in this study. All other ethical considerations are observed in alignment with the author's institutional policies and the journal's guidelines.

## **Originality Note**

The authors confirm that the manuscript is their original work, and if others' works are used, they are properly cited/quoted.

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#### Khatibi, M. B.

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