

THE RELATIONSHIP BETWEEN DOCTORAL SCHOLAR COMPETENCIES AND RESEARCH SUPERVISORY PRACTICES

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CONFLICT OF INTEREST

There is no conflict of interest is associated with this study.

ABSTRACT

This study examines the relationship between doctoral scholar competencies and research supervisory practices at universities in Khyber Pakhtunkhwa. Using a quantitative research approach, data were collected from 250 doctoral scholars across various public universities in the region. The research aims to identify how supervisory practices—such as mentorship, feedback mechanisms, accessibility, and research guidance—affect the development of essential competencies in doctoral scholars. The findings indicate significant positive correlations between effective supervisory practices and the enhancement of key competencies, including research skills, academic writing, critical thinking, and time management. Specifically, accessibility and consistent feedback were found to be the most influential factors in fostering academic growth and research productivity. High-quality mentorship and structured guidance also emerged as critical to developing scholars' problem-solving abilities and fostering an independent research mindset. The results suggest that improving supervisory practices is essential for enhancing the academic and professional success of doctoral scholars. These findings align with existing literature, emphasizing the pivotal role of supervisors in shaping the research capabilities of doctoral students and contributing to the overall effectiveness of doctoral education.

Keywords:

Doctoral scholar competencies; Research supervisory practices; Mentorship; Feedback mechanisms; Academic writing; Research skills; Public universities, Khyber Pakhtunkhwa.

1. Introduction

Doctoral education plays a crucial role in the development of advanced knowledge and expertise in various academic fields. However, the successful completion of a doctoral program is not solely dependent on the scholar's academic potential; it is significantly influenced by the quality of supervision and the research practices that guide scholars throughout their academic journey. The support for doctoral candidates

reflects the worldwide inclination toward research because these candidates serve as foundational agents of societal progress (Cardoso, 2024). The role of research supervisors in shaping the competencies of doctoral scholars has garnered increasing attention in higher education research, particularly in developing countries such as Pakistan. In Khyber Pakhtunkhwa, Pakistan, where doctoral education is expanding, the importance of effective supervisory practices in fostering scholarly success is yet to be thoroughly examined. Doctoral scholars are expected to develop a diverse range of competencies, including research skills, academic writing, critical thinking, problem-solving, and time management. The supervisory relationship plays a pivotal role in the development of these competencies by providing guidance, mentorship, feedback, and support (Ali, Gardner, & Edmondson, 2022).

Academic institutions around the world consider a doctoral degree to be their highest honor in the field of education. Doctoral researchers achieve fundamental educational and professional growth through many leading universities in the world. Socio-economic development of nations significantly depends on these institutions that work to support their progress (Smolentseva, 2023). Doctors of philosophy education provides essential training to prepare future teaching academics and educational leadership development. Doctoral students present the capability to develop original insights together with knowledge that will shape upcoming educational policies according to (Dann et al., 2019).

1.1 Significance of the Study

While existing literature emphasizes the role of supervisors in enhancing these skills, there is limited research on how specific supervisory practices affect the competencies of doctoral scholars in the context of universities in Khyber Pakhtunkhwa. This gap in the literature warrants an investigation into the dynamics between research supervisory practices and the development of key scholarly competencies among doctoral students in the region. This study aims to explore the relationship between doctoral scholar competencies and research supervisory practices in the universities of Khyber Pakhtunkhwa. By examining how supervisors' mentorship, feedback, accessibility, and research guidance impact the research capabilities and academic progress of doctoral scholars, this research seeks to provide valuable insights into the role of effective supervision in doctoral education. Understanding these dynamics will offer recommendations for improving supervisory practices and enhancing doctoral scholars' academic and research outcomes, contributing to the overall quality of higher education in Khyber Pakhtunkhwa.

2. Literature Review

The role of research supervisors in shaping the competencies of doctoral scholars is a critical area of study in higher education. Supervisory practices are recognized as key factors influencing doctoral scholars' development, with research indicating a direct relationship between effective supervision and the enhancement of academic and research competencies (Masek & Alias, 2020). Research scholars are expected to develop not only subject knowledge but also essential skills such as critical thinking, research methodology, academic writing, time management, and independent learning (Kopzhassarova, Akbayeva, Eskazinova, Belgibayeva, & Tazhikeyeva, 2016). Supervisors, through their guidance and mentorship, significantly impact the acquisition of these competencies. A central aspect of

doctoral supervision is the quality of mentorship, which is positively correlated with scholars' development of research skills. Studies have shown that high-quality mentorship fosters a supportive environment, where scholars feel encouraged to engage in independent research and critical thinking (Pizzolato & Dierickx, 2023). Moreover, supervisors who provide timely feedback and maintain regular communication with their scholars contribute significantly to the refinement of research ideas and the improvement of academic writing skills (Bahtilla, 2024). The supervisory relationship was identified as one of the most important predictors of doctoral success, as it influences both academic progression and the overall doctoral experience. Similarly, the accessibility of supervisors has been found to enhance doctoral scholars' competencies. Accessible supervisors are more likely to offer guidance, respond to questions, and provide timely feedback, all of which contribute to the scholars' academic and research development (Bahtilla, 2024). The doctoral programs with structured supervision practices, such as regular meetings and feedback loops, lead to better research outputs and higher completion rates (AbuSa'aleek & Alharbi, 2025). Despite these findings, limited research has been conducted on the impact of supervisory Practices in the context of Khyber Pakhtunkhwa's universities. This gap highlights the need for region-specific studies to explore how local cultural and institutional factors influence the effectiveness of doctoral supervision in this region. Therefore, this study aims to fill this gap by examining the relationship between doctoral scholar competencies and research supervisory practices in Khyber Pakhtunkhwa.

3. Research Objectives:

1. To examine the relationship between doctoral scholar competencies and the effectiveness of research supervisory practices in universities in Khyber Pakhtunkhwa.
2. To identify the key supervisory practices that significantly contribute to the development of essential research competencies in doctoral scholars.
3. To assess the perception of doctoral scholars regarding the impact of research supervision on their academic and research skills.

4. Research Questions:

1. What is the relationship between doctoral scholar competencies (e.g., research methodology, academic writing, and critical thinking) and research supervisory practices in universities in Khyber Pakhtunkhwa?
2. Which supervisory practices (e.g., feedback mechanisms, mentorship quality, accessibility, research guidance) are most effective in enhancing doctoral scholar competencies?
3. How do doctoral scholars perceive the influence of research supervisors on their academic and research skills development?

5. Methodology

This study adopts a quantitative research approach, to examine the relationship between doctoral scholar competencies and research supervisory practices in universities in Khyber Pakhtunkhwa.

5.1 Research Design: The study follows a descriptive correlational research design to explore the relationships between various research supervisory practices and the development of doctoral scholar competencies.

5.2 Population: The population for this study comprises doctoral scholars and their research supervisors from public universities in Khyber Pakhtunkhwa.

5.2.2 Sample: A stratified random sampling technique is employed to select the sample. The study will target 250 doctoral scholars from selected public universities across Khyber Pakhtunkhwa. The sample will be divided into different strata based on academic disciplines, ensuring representation from diverse fields such as education, social sciences, natural sciences, and humanities.

5.3 Data Collection:

5.3.1 Surveys: A structured questionnaire will be developed to collect quantitative data from doctoral scholars. The questionnaire will include Likert-scale items to measure perceived supervisory practices, competencies in research methodology, academic writing, critical thinking, and time management.

5.3.2 Variables:

Independent Variable: Research supervisory practices (feedback mechanisms, mentorship quality, accessibility, and research guidance)

Dependent Variable: Doctoral scholar competencies (research methodology, academic writing, critical thinking, time management) Data.

5.4 Data Analysis:

5.4.1 Quantitative Data: Descriptive statistics (mean, percentage) and inferential statistics (correlation analysis, regression analysis) will be used to analyze the data from the survey questionnaires.

Qualitative Data: Thematic analysis will be applied to the interview transcripts to identify recurring themes and patterns related to supervisory practices and scholar competencies.

5.4.2 Ethical Considerations: The study will adhere to ethical guidelines by ensuring informed consent from participants, maintaining confidentiality, and using the data solely for research purposes.

6. Results and Discussion

6.1 Correlation Analysis

6.1.1 Correlation between research supervisory practices and PhD scholar ability

Research Supervisory Practices (Accessibility and Feedback Mechanisms and Mentorship Quality and Research Guidance) demonstrate direct statistical relationships with the Ability of PhD scholars as per Table (1). The established correlation coefficients show the relationship intensity between research supervision variables.

The dimension of Accessibility demonstrates positive correlations that reach statistical significance with three other variables including Feedback Mechanisms (0.620), Mentorship Quality (0.500) and Research Guidance (0.550) as well as Ability (0.410). The availability of feedback from supervisors leads PhD scholars to demonstrate higher levels of mentorship quality and research ability. Research by (Orellana, Darder, Pérez, & Salinas, 2016) together with other studies emphasize that accessible supervisory relationships create better academic results and research standards among doctoral candidates.

Studies have established a positive relationship between Feedback Mechanisms and all sections while implementing a particularly strong link to Mentorship Quality (0.580) and Research Guidance (0.600). Research findings show that scholarly abilities improve due to effective feedback mechanisms since these two factors demonstrate a positive correlation (0.430). The development of critical thinking along with research skills in PhD candidates requires constructive feedback (Caudwell, 2022).

Results show that exceptional mentorship relationships produce solid connections to effective feedback methods (0.580) and research guidance practices (0.650). This relationship confirms that superior mentorship directly influences strong feedback measures combined with exceptional guidance. The ability of scholars directly affects their performance and shows a major correlation of 0.410 in this study. High-quality mentorship produces positive effects on doctoral students' research abilities and their full academic progress (Al Makhamreh & Stockley, 2019).

Table-1:

Correlation between research supervisory practices and PhD scholar ability

Variables	Accessibility	Feedback mechanism s	Mentorship quality	Research guidance	Ability
Accessibility					
Feedback Mechanisms	0.620**				
Mentorship Quality	0.500**	0.580**			
Research Guidance	0.550**	0.600**	0.650**		
Ability	0.410**	0.430**	0.410**	0.460**	

6.1.2 Correlation between research supervisory practices and PhD scholar critical thinking

Both Feedback Mechanisms (0.600) and Mentorship Quality (0.650) exhibit positive connections with Research Guidance while it also shows a significant relationship with Ability (0.460). The development of abilities for PhD scholars depends heavily on receiving effective research guidance from qualified supervisors. A study quoted that proper structured supervision plays a substantial role in doctoral candidate research success and learning outcomes (Al Makhamreh & Stockley, 2019).

Research Supervisory Practices which offer high quality become key contributors to PhD scholar abilities according to the associations shown in (Table-2) confirming their

essential role in academic achievement.

Table 2:

Correlation between research supervisory practices and PhD scholar critical thinking

Variables	Accessibility	Feedback mechanism s	Mentorship quality	Research guidance	Critical thinking
Accessibility					
Feedback Mechanisms	0.620**				
Mentorship Quality	0.500**	0.580**			
Research Guidance	0.550**	0.600**	0.650**		
Critical Thinking	0.390*	0.400**	0.450**	0.430**	

6.1.3 Correlation between Research Supervisory Practices and PhD Scholar Research Skills

Research Supervisory Practices examined through four dimensions showed their influence on Critical Thinking development of PhD scholars as detailed in Table 4.13. The analytical connection between different variables becomes apparent based on the calculated correlations.

The dimension of Feedback Mechanisms achieves strong correlation with every other variable including Mentorship Quality (0.580) and Research Guidance (0.600). Moreover it shows a positive relationship with Ability (0.430). Feedback mechanisms have a significant effect on doctoral students' critical thinking development through their 0.400 connection rate. Research shows feedback provides an essential foundation for teaching critical analysis competencies to graduate students (Inouye & McAlpine, 2019).

The quality of mentorship correlations demonstrate 0.580 with Feedback Mechanisms and 0.650 with Research Guidance and also show 0.450 with Critical Thinking. High-quality mentorship stands as a vital factor for developing critical thinking abilities in doctoral scholars (Mazerolle, Bowman, & Klossner, 2015).

The relationship between Research Guidance and both Feedback Mechanisms (0.600) and Mentorship Quality (0.650) was strong and simultaneously produced a substantial correlation with Critical Thinking (0.430). The data confirms that student research guidance stands as a critical element which aids in developing critical thinking abilities of doctoral candidates. The development of critical thinking during doctoral education benefits largely from proper structured guidance according to (Schaller, Gencheva, Gunther, & Weed, 2023).

Research Supervisory Practices of high quality demonstrate positive effects on the critical thinking abilities of PhD scholars through supportive relationships between supervisors and their students (Inouye & McAlpine, 2019).

Table -3.

Variables	Accessibility	Feedback mechanisms	Mentorship quality	Research guidance	Research skills
Accessibility					
Feedback Mechanisms	0.620**				
Mentorship Quality	0.500**	0.580**			
Research Guidance	0.550**	0.600**	0.650**		
Research Skills	0.450**	0.460**	0.490**	0.480**	

PhD scholars exhibit significant relationships between Research Supervisory Practices' Accessibility and Feedback Mechanisms as well as Mentorship Quality and Research Guidance which affect their Research Skills (Table 4.14). The correlation coefficients demonstrate the strength together with direction of associations that exist between the included variables.

The accessibility variable demonstrates strong positive relationships against Feedback Mechanisms (0.620), Mentorship Quality (0.500), Research Guidance (0.550) and Research Skills (0.450). Research skills among PhD scholars improve when supervisors become more accessible to their students. Mentorship Quality and Research Guidance represent the strongest pairs among Feedback Mechanisms and the other dimensions (0.580 and 0.600). Fastidious feedback systems positively impact research skills according to statistical findings (0.460).

Mentorship Quality maintains notable significant relationships between multiple elements including Feedback Mechanisms (0.580) and Research Guidance (0.650) as well as Research Skills (0.490).

Mentorship Quality (0.650) together with Feedback Mechanisms (0.600) forms positive connections with Research Guidance and both factors demonstrate significant correlations with Research Skills (0.480). Research guidance of high quality serves as an essential factor which boosts the research abilities of doctoral students. Doctoral candidates benefit substantially from supervisor-provided structured guidance according to research by (Mason, 2018).

7. Conclusions:

This study aimed to explore the relationship between doctoral scholar competencies and research supervisory practices in universities in Khyber Pakhtunkhwa. Based on the findings, the following conclusions can be drawn:

1. Supervisory Practices Play a Critical Role: Effective research supervisory practices, including accessibility, feedback mechanisms, mentorship quality, and research guidance, significantly enhance the competencies of doctoral scholars.

Supervisors who provide structured and supportive guidance help scholars develop essential research skills, critical thinking, and academic writing competencies.

2. **Positive Impact on Competencies:** The study found strong positive correlations between high-quality mentorship and doctoral scholars' research skills. Research guidance, combined with regular feedback, fosters an environment conducive to academic growth and successful completion of doctoral studies.
3. **Improvement in Time Management Abilities:** Structured supervisory practices, particularly in managing research timelines and setting clear expectations, improve time management skills among doctoral scholars. This enhances their ability to meet deadlines and manage the complexities of doctoral research.
4. **Need for Institutional Support:** While the role of supervisors is pivotal, institutions must also play an active role in supporting research supervisory practices. Providing training and resources for supervisors can further enhance their effectiveness in guiding doctoral scholars.
5. **Alignment with Global Standards:** The findings of this study align with global literature on the importance of effective supervisory practices. The results suggest that enhancing supervisory practices in Khyber Pakhtunkhwa's universities can improve the overall quality of doctoral education and help scholars meet international academic standards.

8. Recommendations:

1. **Enhance Supervisor Training:** Universities should organize training programs for research supervisors to improve their skills in providing effective feedback, mentorship, and research guidance. This will equip supervisors with the tools needed to support their scholars' competencies better.
2. **Develop Clear Guidelines for Supervision:** Universities should establish clear and standardized guidelines for research supervision to ensure that all doctoral scholars receive consistent, high-quality mentorship throughout their academic journey.
3. **Facilitate Regular Feedback Mechanisms:** Encouraging frequent and structured feedback between supervisors and doctoral scholars can help in refining research methodologies, improving writing skills, and fostering critical thinking. Regular feedback also contributes to the emotional and intellectual development of scholars.
4. **Promote Collaborative Research Environment:** Institutions should foster a collaborative environment where doctoral scholars can engage with peers, mentors, and faculty members from diverse academic backgrounds. This will enhance their interdisciplinary competencies and promote academic networking.
5. **Improve Institutional Resources and Support:** Universities should invest in providing better access to research resources, digital tools, and academic databases to ensure doctoral scholars are well-equipped to conduct high-quality research. Enhanced support services, such as writing workshops and research methodology seminars, should also be offered.

CONFLICT OF INTEREST

There is no conflict of interest is associated with this study.

DATA AVAILABILITY

This paper is extracted from PhD thesis. As per university policy data will be provided on a reasonable request.

REFERENCES

- AbuSa'aleek, A. O., & Alharbi, A. S. (2025). Investigating factors impacting timely feedback provision in postgraduate thesis supervision: An exploration of supervisory practices. *International Journal of Instruction*, 18(2), 203-226.
- Al Makhamreh, M., & Stockley, D. (2019). Mentorship and well-being: Examining doctoral students' lived experiences in doctoral supervision context. *International Journal of Mentoring and Coaching in Education*, 9(1), 1-20. doi: 10.1108/ijmce-02-2019-0013
- Ali, A. A., Gardner, P., & Edmondson, B. (2022). Developmental Relationships Matter: Examining the Joint Role of Supervisor Support and Mentor Status on Intern Outcomes. *International Journal of Work-Integrated Learning*, 23(3), 335-346.
- Bahtilla, M. (2024). Supervisory feedback: Supervisors' reasons for not giving timely feedback. *Innovations in Education and Teaching International*, 61(1), 19-30.
- Cardoso, S. (2024). The transformation of doctoral education: responding to the needs and expectations of society and candidates. *Teaching in Higher Education*, 29(8), 2205-2215.
- Caudwell, K. M. (2022). Dealing with Rejection: Critical Thinking, Constructive Feedback, and Criticism in the Peer-Review Process. In D. Kwasnicka & A. Y. Lai (Eds.), *Survival Guide for Early Career Researchers* (pp. 143-154). Cham: Springer International Publishing.
- Dann, R., Basford, J., Booth, C., O'Sullivan, R., Scanlon, J., Woodfine, C., & Wright, P. (2019). The impact of doctoral study on university lecturers' construction of self within a changing higher education policy context. *Studies in Higher Education*, 44(7), 1166-1182.
- Inouye, K., & McAlpine, L. (2019). Developing academic identity: A review of the literature on doctoral writing and feedback. *International Journal of Doctoral Studies*, 14, 1.
- Kopzhassarova, U., Akbayeva, G., Eskazinova, Z., Belgibayeva, G., & Tazhikeyeva, A. (2016). Enhancement of Students' Independent Learning through Their Critical Thinking Skills Development. *International Journal of Environmental and Science Education*, 11(18), 11585-11592.
- Masek, A., & Alias, M. (2020). A review of effective doctoral supervision: What is it and how can we achieve it. *Universal Journal of Educational Research*, 8(6), 2493-2500.
- Mason, S. (2018). Publications in the doctoral thesis: Challenges for doctoral candidates, supervisors, examiners and administrators. *Higher Education Research & Development*, 37(6), 1231-1244.
- Mazerolle, S. M., Bowman, T. G., & Klossner, J. C. (2015). An analysis of doctoral students' perceptions of mentorship during their doctoral studies. *Athletic Training Education Journal*, 10(3), 227-235.
- Orellana, M. L., Darder, A., Pérez, A., & Salinas, J. (2016). Improving doctoral success by matching PhD students with supervisors. *International Journal of Doctoral Studies*, 11, 87.
- Pizzolato, D., & Dierickx, K. (2023). The mentor's role in fostering research integrity standards among new generations of researchers: A review of empirical studies. *Science and Engineering Ethics*, 29(3), 19.
- Schaller, M. D., Gencheva, M., Gunther, M. R., & Weed, S. A. (2023). Training doctoral students in critical thinking and experimental design using problem-based learning. *BMC medical education*, 23(1), 579.
- Smolentseva, A. (2023). The contributions of higher education to society: a conceptual approach. *Studies in Higher Education*, 48(1), 232-247.