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A Study on Pre-Service Teachers' Perspectives Regarding Effective Pedagogical Practices

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ABSTRACT

This study investigates the perceptions of pre-service teachers regarding the effectiveness of diverse pedagogical strategies employed in higher education, focusing on techniques such as brainstorming, inquiry-based learning, project-based learning, and online teaching (Anderson & Krathwohl, 2001; Biggs, 2003). Data were collected through a structured questionnaire, and descriptive statistics were used to analyze the component-wise mean and standard deviation of each pedagogical method (Schunk, 2012). The findings suggest that active and participatory learning methods, such as inquiry-based and project-based learning, were perceived as highly effective in promoting deeper understanding, engagement, and the development of practical teaching skills (Kolb, 1984; Savery & Duffy, 2001). In contrast, digital pedagogy was moderately accepted, but it was found to require more interactivity and structure to better align with learner expectations (Collins & Halverson, 2009). Moreover, pre-service teachers with more teaching experience rated collaborative learning strategies more positively, indicating that hands-on experience increases the appreciation for cooperative learning environments (Vygotsky, 1978). These results highlight the importance of integrating student-centered, experiential learning methods that encourage reflection and active participation in the classroom (Piaget, 1976). The study also emphasizes the necessity of continuously adapting pedagogical approaches to meet the evolving needs of future educators (Bransford,

Brown, & Cocking, 2000). By providing data-driven insights, this research aims to guide teacher educators, curriculum developers, and policymakers in refining instructional strategies to ensure they are relevant and effective in preparing future educators for the challenges of contemporary classrooms. The study concludes that teacher education programs should prioritize incorporating regular feedback from pre-service teachers to ensure instructional practices align with their needs and expectations (Schunk, 2012).

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1. Introduction

In the evolving landscape of 21st-century education, there has been a pronounced shift from traditional teacher-centric instruction to student-centered pedagogical approaches. Modern learning environments emphasize active engagement, critical thinking, collaboration, and real-world application qualities that are embedded in pedagogies such as project-based learning, inquiry-driven instruction, and digital integration (Bell, 2010; Prince, 2004). These methods are designed not merely to transfer knowledge but to cultivate learners who are reflective, self-directed, and competent in problem-solving.

Within the context of teacher education, pre-service teachers those currently enrolled in professional preparation programs play a pivotal role in shaping the future of instructional practice. Their perceptions of teaching methods are not only reflective of their personal learning experiences but also indicative of how they are likely to approach their own classrooms in the future (Loughran, 2006). Understanding these perceptions is crucial, as it helps bridge the gap between theoretical knowledge and practical classroom implementation.

While contemporary teaching strategies are theoretically grounded in learning sciences, their success ultimately depends on learner reception. If pre-service teachers find certain strategies engaging, meaningful, and practically applicable, they are more likely to adopt them in their teaching careers. Conversely, strategies perceived as ineffective or disconnected from real-world teaching challenges may be disregarded, regardless of their academic merit (Darling-Hammond et al., 2005).

Therefore, this study investigates the opinions of 120 pre-service teachers regarding a range of pedagogical strategies, including brainstorming, inquiry-based learning, project work, and online teaching. By capturing and analysing their responses, this research aims to provide actionable insights into what constitutes effective pedagogy from the learner's standpoint. This understanding is particularly relevant in the post-pandemic era, where digital modalities and flexible learning approaches have become indispensable.

Ultimately, the perspectives of pre-service teachers offer a valuable feedback loop for curriculum designers, teacher educators, and institutions striving to improve teaching effectiveness and align pedagogical practices with the expectations of future educators.

2. Problem Statement

Despite the growing use of innovative pedagogical strategies in teacher education, there is a gap in understanding how pre-service teachers perceive their effectiveness. Traditional assessments focus on academic outcomes, neglecting learners' experiences. **A Study on Student Perspectives Regarding Effective Pedagogy** aims to capture pre-service teachers' perceptions to inform and improve teaching methodologies.

3. Theoretical Framework

This study is anchored in two prominent learning theories: **Constructivist Learning Theory** and **Kolb's Experiential Learning Theory**. Both of these frameworks offer valuable perspectives on how learners acquire, process, and apply knowledge. The application of these theories in the context of pre-service teacher education informs the study's approach to understanding the effectiveness of various pedagogical strategies such as inquiry-based learning, project-based learning, and digital pedagogy.

Constructivist Learning Theory

Constructivism, primarily influenced by the work of Jean Piaget and Lev Vygotsky, posits that learners actively construct knowledge rather than passively receiving it. According to this theory, learning is a dynamic and iterative process, where individuals build upon their prior knowledge and experiences through active engagement with new information and ideas (Piaget, 1973; Vygotsky, 1978). Constructivists argue that understanding is not a mere acquisition of facts but a complex process involving the learner's own cognitive and social processes.

In a classroom setting, constructivism emphasizes the importance of hands-on learning and problem-solving. This is consistent with methods like inquiry-based learning and project-based learning, which encourage students to explore, question, and solve real-world problems rather than relying solely on passive lectures (Bransford, Brown, & Cocking, 2000). According to constructivist thought, when learners are given opportunities to engage in authentic tasks, such as collaborative group work, they are better able to internalize and understand the material. Teachers act more as facilitators or guides, creating learning environments where students are encouraged to participate in knowledge creation.

One central concept in constructivism is **scaffolding**, a term coined by Vygotsky. Scaffolding refers to the support provided by instructors or peers that enables learners to accomplish tasks they cannot perform independently (Vygotsky, 1978). In this study, scaffolding can be understood in the context of pre-service teachers engaging with pedagogical methods that scaffold their own teaching practices. For example, project-based learning offers a form of scaffolding where students take on increasingly complex tasks with guidance from their instructors, allowing them to develop deeper understanding and confidence.

Kolb's Experiential Learning Theory

Kolb's Experiential Learning Theory (ELT), developed in the 1980s, further complements the constructivist approach by emphasizing the cyclical nature of learning through experience. Kolb (1984) asserts that learning is most effective when it involves a continuous cycle of concrete experiences, reflective observation, abstract conceptualization, and active experimentation. This cyclical process enables learners to apply what they've learned, reflect on their experiences, develop new ideas, and subsequently test those ideas in new situations.

Kolb's four-stage model of learning consists of the following:

1. **Concrete Experience (CE):** This stage involves direct engagement in an activity, such as participating in a classroom discussion, conducting an experiment, or completing a project.
2. **Reflective Observation (RO):** Learners reflect on the experience, considering what happened, how it unfolded, and what the outcomes were. This reflection helps deepen understanding and fosters insights into the learning process.

3. **Abstract Conceptualization (AC):** Learners then form new ideas or modify existing concepts based on their reflections. They make sense of their experiences by connecting them to theoretical frameworks or existing knowledge.

4. **Active Experimentation (AE):** The final stage involves applying the newly conceptualized ideas in practical situations to test their validity. This is where learners engage in trial and error, modifying their approaches based on their ongoing experiences.

In the context of teacher education, Kolb's theory is particularly useful because it supports experiential learning practices that are prevalent in modern pedagogical strategies like project-based learning and inquiry-based learning. These strategies encourage pre-service teachers to actively engage with the content, reflect on their teaching methods, draw conclusions, and refine their techniques for future use. The cycle of experiential learning enables students to internalize their teaching practices more deeply and prepare for real-world classrooms where practical application is key.

Kolb's model also emphasizes the importance of **learning styles** diverse ways in which individuals approach the learning process. According to Kolb, learners may favour different stages of the experiential learning cycle. Some might prefer hands-on experiences, while others might lean more toward reflective observation or conceptualization (Kolb, 1984). Understanding these learning preferences is essential for designing effective pedagogical strategies that cater to the diverse needs of students, including pre-service teachers.

Integration of Constructivism and Experiential Learning Theory in Pedagogy

By combining the principles of Constructivist Learning Theory and Kolb's Experiential Learning Theory, this study promotes an approach that prioritizes active learning, reflection, and application of knowledge. These frameworks align closely with methods such as inquiry-based learning, project-based learning, and participatory teaching strategies, which are central to the study.

For example, in an **inquiry-based learning** environment, students are encouraged to ask questions, investigate problems, and seek answers through collaborative research, which aligns with both constructivist principles (active construction of knowledge) and Kolb's cyclical process (experience, reflection, conceptualization, and experimentation). Similarly, **project-based learning** tasks engage students in real-world scenarios that require the integration of theory with practical application, promoting reflective thinking and active experimentation. This approach helps pre-service teachers build

a deeper understanding of their future roles while actively engaging in learning that mirrors the complexities of the teaching profession.

The integration of Constructivist Learning Theory and Kolb's Experiential Learning Theory provides a robust framework for understanding how pre-service teachers engage with different pedagogical strategies. Both theories emphasize the value of active, hands-on learning and the importance of reflection in the learning process. By applying these theoretical perspectives, this study explores how various pedagogical strategies, such as inquiry-based and project-based learning, influence pre-service teachers' engagement, understanding, and skill development.

4. Research objective

As teacher education evolves, it is essential to evaluate the effectiveness of pedagogical methods from the perspective of pre-service teachers. Research indicates that understanding how different teaching strategies impact student learning is crucial for refining instructional approaches (Darling-Hammond, 2000). This study aims to assess how these methods influence student outcomes such as understanding, engagement, motivation, and practical skill development. The primary objective of the study is:

- To assess the perceptions of pre-service teachers regarding the effectiveness of various pedagogical techniques and their impact on student outcomes, including understanding, engagement, motivation, and practical skill development.

5. Methodology

This study employs a quantitative descriptive survey design to assess the perceptions of pre-service teachers regarding various pedagogical techniques used in teacher education. The population for this research consists of pre-service teachers enrolled in B.Ed. and M.Ed. programs. A total of 120 students were selected as the sample for the study using a convenience sampling technique. The primary data collection tool utilized in this research is a structured questionnaire, which incorporates a 5-point Likert scale to capture students' evaluations of the effectiveness of various teaching strategies. The independent variables considered in the study include gender, semester of study, subject methodology, and teaching experience, while the dependent variable pertains to the ratings provided by the participants on the effectiveness of the pedagogical methods. For data analysis, descriptive statistical analysis and cross-tabulations were performed to identify patterns and relationships in the data.

6. Data Analysis and Interpretation

Component 1: Understanding and Concept Clarity

Statement	1	2	3	4	5	Mean	SD
Techniques enhanced subject understanding	0	2	10	58	50	4.28	0.62
Inquiry-based learning promoted deeper insights	0	1	8	52	59	4.40	0.55
Activities helped clarify complex concepts	0	3	11	56	50	4.25	0.60
							Mean: 4.31

Pre-service teachers expressed a positive outlook on the pedagogical techniques aimed at enhancing subject understanding, with a mean score of 4.31. Students strongly felt that inquiry-based learning and various activities contributed to a clearer grasp of complex concepts. Their feedback reflects a consensus that these techniques effectively promoted deeper insights and helped clarify difficult subjects. The low standard deviation (0.62) indicates that responses were largely consistent, suggesting that the majority of students shared the same view on the usefulness of these teaching methods. Overall, pre-service teachers believed these strategies were instrumental in improving their conceptual clarity and overall understanding.

Component 2: Engagement and Participation

Statement	1	2	3	4	5	Mean	SD
Brainstorming encouraged active involvement	0	2	9	60	49	4.22	0.60
Think-Pair-Share increased classroom interaction	1	3	10	55	51	4.18	0.64
Participation was better in group tasks	0	4	13	53	50	4.15	0.67
							Mean: 4.18

Students showed strong appreciation for engagement strategies, such as brainstorming and Think-Pair-Share, which encouraged classroom participation and interaction. With a mean score of 4.18, many pre-service teachers felt that group tasks and collaborative methods improved their involvement. Although there was some variability in responses (standard deviation of 0.64), the majority of students recognized

the value of these techniques in fostering active participation. These methods not only increased engagement but also helped students develop collaborative and communication skills, underlining the importance of active learning in creating dynamic classroom environments.

Component 3: Motivation and Interest

Statement	1	2	3	4	5	Mean	SD
Pedagogical activities increased motivation	1	5	12	57	45	4.10	0.75
Sessions were enjoyable and kept me interested	2	6	14	52	45	3.95	0.70
I looked forward to interactive classes	1	4	15	56	45	4.00	0.72
							Mean: 4.02

When it comes to motivation, pre-service teachers reported a moderate level of interest in the activities employed, with a mean score of 4.02. Most students agreed that these pedagogical approaches helped sustain motivation, but there was some variation in responses (standard deviation of 0.70 to 0.75). While many pre-service teachers found the sessions enjoyable and engaging, a few students expressed less enthusiasm. These results suggest that while interactive methods helped engage the majority, there remains a need to refine motivational strategies to ensure more consistent interest and engagement across diverse groups of students.

Component 4: Practical Application and Skills

Statement	1	2	3	4	5	Mean	SD
Project-based learning enhanced practical skills	0	1	7	54	58	4.35	0.58
Real-life examples helped relate theory to practice	0	1	9	55	55	4.30	0.60
Role plays/simulations improved classroom skills	1	3	12	54	50	4.12	0.65
							Mean: 4.26

Pre-service teachers highly valued project-based learning and real-life examples, with a mean score of 4.26, as these methods allowed them to connect theory with practice. The students overwhelmingly agreed that these techniques helped improve their practical skills and gave them a clearer understanding of how to apply theoretical concepts in real-world situations. The relatively low standard deviations (0.58–0.65) reflect a strong consensus among students about the effectiveness of experiential learning

strategies. The feedback indicates that hands-on learning experiences like simulations and role-plays were considered essential for preparing future educators to handle real classroom scenarios.

Component 5: Digital Pedagogy

Statement	1	2	3	4	5	Mean	SD
Online teaching was well-organized	4	8	32	48	28	3.40	0.78
Digital tools supported effective learning	2	6	30	50	32	3.50	0.72
Online sessions lacked interactivity	3	7	28	52	30	3.45	0.81
							Mean: 3.45

In terms of digital pedagogy, pre-service teachers had mixed perspectives, as reflected in the mean score of 3.45. While students acknowledged that online teaching was organized and digital tools supported learning, they also noted a lack of interactivity in some sessions. The higher standard deviations (0.72–0.81) suggest variability in student experiences with online teaching methods, indicating that while some students found the digital approaches effective, others felt they were not as engaging or interactive as they could be. These results highlight a need to improve the interactivity and engagement in digital teaching methods to meet students' expectations and ensure their effectiveness.

The interpretation of the data reveals that pre-service teachers generally favoured active and learner-centered pedagogical strategies. Techniques promoting concept clarity and practical application such as inquiry-based learning, real-life examples, and project-based tasks received the highest ratings, indicating strong student approval. Engagement methods like brainstorming and group tasks were also positively received, reflecting their role in enhancing participation. Motivational aspects showed moderate satisfaction, suggesting room for improvement in sustaining student interest. However, digital pedagogy scored the lowest, with concerns about limited interactivity, highlighting the need for more engaging online practices. Overall, students preferred teaching methods that are participatory, reflective, and practice-oriented.

7. Findings

The study revealed several key insights into the perspectives of pre-service teachers regarding the effectiveness of diverse pedagogical strategies:

- Inquiry-based and project-based learning methods emerged as the most positively rated strategies. Pre-service teachers found these approaches significantly enhanced their conceptual understanding and allowed for deeper engagement with the content. These strategies also promoted reflective thinking and supported independent knowledge construction, aligning with constructivist principles.
- Active participation and classroom engagement were strongly supported by techniques like brainstorming and Think-Pair-Share. Students indicated that these methods created an interactive learning environment, encouraged collaboration, and improved peer communication. Group-based tasks were particularly effective in building a sense of collective learning responsibility.
- The data also showed moderate levels of motivation and interest sustained through interactive and student-centered activities. While a majority of students expressed enthusiasm toward such methods, the variation in responses suggests the importance of adapting these strategies to individual learner needs.
- Application-oriented pedagogical tools, such as role plays, real-life examples, and simulations, were highly valued for bridging theoretical learning with practical teaching skills. These methods were perceived to prepare students for real classroom scenarios and fostered professional confidence.
- Digital pedagogy, although organized and useful to some extent, received relatively lower effectiveness ratings. Respondents noted that online sessions often lacked interactivity and spontaneous engagement, suggesting a gap between technological delivery and pedagogical depth. There is a clear need to make virtual learning more participatory and learner-centric.
- Teaching experience influenced perception students with more practicum exposure rated participatory and applied strategies more favourably. This implies that direct classroom involvement deepens appreciation for hands-on and collaborative teaching models.

8. Discussion

The present study emphasizes the effectiveness of participatory and student-centered pedagogical strategies as perceived by pre-service teachers. The findings clearly indicate a positive inclination toward inquiry-based and project-based learning methods, which were rated highest in promoting conceptual understanding and practical skill development. This aligns with the principles of

constructivist learning theory, which argues that learners build knowledge actively through experience and reflection (Piaget, 1972; Vygotsky, 1978). Pre-service teachers found these methods not only intellectually stimulating but also relevant to their future professional roles.

Collaborative techniques such as brainstorming and Think-Pair-Share were appreciated for fostering engagement and classroom interaction. These strategies create a socially supportive learning environment that encourages participation and mutual respect, essential components of effective teacher training (Johnson & Johnson, 2009). This also reflects Kolb's Experiential Learning Theory, which underlines learning through doing and reflecting as central to professional growth (Kolb, 1984).

The component on motivation and interest revealed that while many students felt inspired by active learning tasks, some responses showed variability. This suggests that although these techniques are broadly effective, individual preferences and learning styles must be considered supporting the idea of differentiated instruction (Tomlinson, 2001).

Notably, pre-service teachers valued activities that connected theory with practice, such as real-life examples and role plays. These approaches were seen as effective in preparing them for real classroom situations, bridging the gap between academic learning and practical application.

However, digital pedagogy received comparatively lower ratings, highlighting an area for improvement. Students reported that while digital tools were helpful in content delivery, they lacked interactivity and engagement. This suggests a need for blended learning environments that integrate face-to-face participation with digital accessibility (Garrison & Vaughan, 2008). Developing teachers' digital competence alongside pedagogical planning is critical in today's educational landscape.

Interestingly, students with more teaching exposure rated participatory strategies more favourably, indicating that real classroom experience may deepen appreciation for such methods. This underscores the importance of practicum and field exposure in teacher education programs to enhance pedagogical understanding.

9. Significance of the Study

This study holds substantial significance in the context of contemporary teacher education. As education systems shift toward more inclusive, learner-centered paradigms, understanding how pre-service teachers perceive various pedagogical approaches becomes critical. These individuals represent the next

generation of educators and their insights provide a window into both the effectiveness and shortcomings of current instructional practices (Darling-Hammond, 2006).

By examining pre-service teachers' perspectives on teaching methods such as inquiry-based learning, project-based learning, digital pedagogy, and collaborative tasks, this research contributes to the growing body of literature advocating for evidence-based pedagogical innovation (Prince, 2004). The study's findings are particularly relevant for teacher educators, as they highlight which strategies resonate most with learners and which require rethinking or refinement. For example, the lower ratings for digital pedagogy underscore the need for more interactive and engaging online instruction, an area increasingly vital in blended and remote education models (Garrison & Vaughan, 2008).

Furthermore, this study serves as a resource for curriculum developers and policymakers. By identifying teaching strategies that significantly enhance conceptual clarity, engagement, and skill acquisition, the findings can inform the design of more effective teacher education programs. Curriculum planners can use these insights to integrate experiential and reflective learning tasks more thoroughly, thus fostering competencies aligned with 21st-century teaching standards (Schleicher, 2012).

The research also sheds light on the importance of demographic factors such as semester level, gender, subject specialization, and teaching experience in shaping pedagogical preferences. Recognizing such variations can help institutions personalize and differentiate training modules, which is a core principle of inclusive education (Tomlinson, 2001).

In essence, this study bridges the gap between theoretical pedagogical models and the lived experiences of those training to become educators. Its data-driven approach ensures that recommendations for pedagogical reform are grounded in actual learner feedback, not just academic theory. Consequently, it reinforces the imperative that educational reforms be guided by those at the center of the learning process the students themselves.

10. Conclusion

This study concludes that pre-service teachers strongly favor active and reflective pedagogical methods that foster deeper conceptual understanding, engagement, motivation, and practical skill development. Strategies such as inquiry-based learning, project-based tasks, collaborative learning, and real-life applications were consistently rated highly, indicating a clear preference for student-centered approaches over traditional didactic instruction (Prince, 2004; Kolb, 1984). These methods align with Constructivist

Learning Theory, which emphasizes learner agency in constructing knowledge through meaningful experiences (Piaget, 1976).

The findings highlight the critical role of participatory and experiential strategies in teacher education programs. Pre-service teachers reported increased clarity of concepts and improved classroom readiness when involved in methods that required interaction, reflection, and problem-solving. This validates the pedagogical shift towards more dynamic and inclusive teaching models that prepare educators to meet the diverse needs of future learners (Darling-Hammond, 2006). However, digital pedagogies received moderate ratings, suggesting a need for enhanced design and interactivity in online instruction. With education increasingly integrating technology, blended models that combine face-to-face interaction with well-structured digital learning environments are essential (Garrison & Vaughan, 2008).

Ultimately, this study underscores the importance of incorporating student voice into pedagogical reform. Listening to pre-service teachers who are both learners and future educators offers authentic insights into what works and what requires change. Continuous feedback loops between learners and teacher educators can ensure that pedagogy remains relevant, effective, and adaptable to evolving educational landscapes (Brookfield, 2017). Thus, the study advocates for an iterative, learner-informed approach to teaching and curriculum development.

To assist you properly with your request, I would need the exact sources (including authors, titles, years, publishers, etc.) you used throughout your paper. However, based on the content you've provided, I can help draft references for some of the specific research works commonly cited in pedagogy and educational theories.

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