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COMPARATIVE ANALYSIS OF LECTURE AND DISCUSSION METHODS IN HIGHER EDUCATION: EVIDENCE FROM A PUBLIC UNIVERSITY IN PAKISTAN

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Abstract

This study examines the comparative effectiveness of lecture and discussion teaching methods in higher education, focusing on a public university in Pakistan. Using a mixed-methods explanatory sequential design, quantitative data on student academic achievement and engagement were collected from 60 students, while qualitative data were gathered through semi-structured interviews to explore students' perceptions and experiences. Quantitative analysis revealed that students taught through the discussion method achieved significantly higher post-test scores and demonstrated greater engagement than those taught through traditional lectures. Thematic analysis of qualitative data identified key factors contributing to the effectiveness of discussion-based teaching, including active participation, peer interaction, confidence building, critical thinking, and a supportive classroom environment. Integration of quantitative and qualitative findings provides a holistic understanding of teaching effectiveness, emphasizing that discussion-based instruction not only improves academic outcomes but also fosters motivation, engagement, and deeper learning. The study highlights the importance of adopting learner-centered pedagogies in public universities in Pakistan and offers practical recommendations for educators, administrators, and policymakers to enhance instructional quality and student learning experiences.

INTRODUCTION

Teaching methods are a foundational component of effective instruction in higher education, shaping not only what students learn but also how they engage with knowledge, peers, and instructors. Universities are increasingly expected to move beyond the transmission of factual knowledge and foster higher-order thinking skills, such as critical analysis, problem-solving, collaboration, and reflective learning (Biggs & Tang, 2011). In this context, instructional approaches adopted by university teachers play a decisive role in determining the quality of learning outcomes.

The lecture method has historically been the most prevalent mode of instruction in higher education worldwide. Its continued dominance is often attributed to its efficiency in content delivery, suitability for large class sizes, and alignment with examination-oriented systems (Bligh, 2013). In many developing countries, including Pakistan, structural constraints such as limited resources,

large student enrollments, and traditional academic cultures further reinforce reliance on lecture-based teaching (Hoodbhoy, 2019). While lectures can effectively introduce concepts and organize disciplinary knowledge, critics argue that excessive dependence on this method encourages passive learning and limits student interaction (Prince, 2004).

In contrast, the discussion method represents a student-centered instructional approach grounded in constructivist learning theory, which views learning as an active, social process of meaning-making (Vygotsky, 1978). Through discussion-based teaching, students are encouraged to articulate ideas, question assumptions, engage with diverse perspectives, and co-construct understanding. Empirical research suggests that discussion-oriented classrooms enhance student engagement, conceptual understanding, and critical thinking skills (Brookfield & Preskill, 2016; Freeman et al., 2014).

Within Pakistan's higher education system, recent policy documents and reforms emphasize the need to promote active learning and improve teaching quality in public universities (Higher Education Commission [HEC], 2019). However, the transition from traditional lecture-based instruction to interactive pedagogies remains uneven and under-researched. Existing studies often focus on either learning outcomes or student perceptions in isolation, offering a fragmented understanding of instructional effectiveness.

To address this gap, the present study adopts a mixed-methods approach to compare lecture and discussion methods in higher education. By integrating quantitative evidence of academic achievement and student engagement with qualitative insights into students' experiences and perceptions, the study aims to provide a comprehensive and contextually grounded analysis. Focusing on a public university in Pakistan, this research contributes empirical evidence to inform pedagogical practices, faculty development, and policy decisions in higher education.

Research Objectives

1. To compare the effect of lecture and discussion methods on undergraduate students' academic achievement.
2. To examine differences in student engagement under lecture and discussion methods.
3. To explore students' perceptions, experiences, and preferences regarding lecture and discussion methods.
4. To integrate quantitative and qualitative findings to provide a comprehensive understanding of teaching effectiveness in higher education.

Research Questions

Quantitative:

1. Is there a significant difference in academic achievement between students taught via lecture and discussion methods?
2. Is there a significant difference in student engagement between lecture and discussion methods?

Qualitative: 3. How do students perceive the effectiveness of lecture and discussion methods? 4. What challenges and benefits do students experience with each teaching method?

Mixed-Methods: 5. How do qualitative perceptions complement or explain the quantitative differences in achievement and engagement?

Literature Review

Lecture Method in Higher Education

The lecture method remains one of the most widely used instructional strategies in higher education. It is typically characterized by teacher-centered delivery, limited student interaction, and a structured presentation of content. Bligh (2013) argues that lectures are effective for transmitting information and providing conceptual frameworks, particularly in large classes. However, research indicates that students' attention during lectures often declines after the first 15–20 minutes, potentially reducing learning effectiveness. Prince (2004) highlights that while lectures can support short-term knowledge acquisition; they are less effective in promoting

deep understanding and higher-order cognitive skills. Studies have also linked lecture-dominated classrooms with lower levels of student engagement and motivation, especially when opportunities for questioning and interaction are minimal (Biggs & Tang, 2011).

In the Pakistani higher education context, lecture-based instruction continues to dominate due to systemic and cultural factors, including examination-driven curricula and limited pedagogical training for university faculty (Hoodbhoy, 2019). While lectures remain practical, their pedagogical limitations necessitate exploration of alternative approaches.

Discussion Method and Constructivist Learning

The discussion method is rooted in constructivist and social learning theories, which emphasize learning through interaction, dialogue, and reflection (Vygotsky, 1978). Discussion-based teaching encourages students to actively participate, express viewpoints, and engage in collaborative problem-solving. Brookfield and Preskill (2016) argue that discussion not only deepens understanding but also fosters democratic learning environments and critical consciousness.

Empirical evidence supports the effectiveness of discussion-based and active learning strategies in higher education. Freeman et al. (2014), in a meta-analysis of STEM education studies, found that active learning approaches significantly improved student performance and reduced failure rates compared to traditional lectures. Similar findings have been reported across disciplines, indicating higher engagement and improved learning outcomes in discussion-oriented classrooms.

Student Engagement and Academic Achievement

Student engagement is a multidimensional construct encompassing behavioral, emotional, and cognitive components (Fredricks, Blumenfeld, & Paris, 2004). Engaged students are more likely to participate actively, persist in learning tasks, and achieve higher academic outcomes. Teaching methods that promote interaction and collaboration are strongly associated with increased engagement.

Research indicates that discussion-based teaching positively influences both engagement and achievement by providing opportunities for active involvement and immediate feedback (Kuh, 2009). Conversely, passive instructional approaches may limit students' cognitive engagement and reduce opportunities for meaningful learning.

Mixed-Methods Research in Higher Education Pedagogy

Mixed-methods research integrates quantitative and qualitative approaches to provide a comprehensive understanding of complex educational phenomena. Creswell and Plano Clark (2018) argue that mixed-methods designs are particularly valuable in educational research, as they allow researchers to connect measurable outcomes with participants' experiences and perceptions. In comparative teaching-method studies, mixed-methods approaches enable researchers to examine not only whether one method is more effective than another, but also why and how these differences occur. In the Pakistani higher education context, few studies have employed such integrative designs, highlighting a significant gap addressed by the present study.

Research Gap

Although international literature demonstrates the advantages of discussion-based and active learning approaches, there is limited empirical evidence from Pakistan's public universities using mixed-methods designs. Most existing studies rely on either quantitative achievement data or qualitative perceptions, offering partial insights. This study addresses this gap by systematically integrating both strands of data to provide a holistic and contextually relevant analysis of lecture and discussion methods in higher education.

Theoretical Framework

This study is grounded in Constructivist Learning Theory and Active Learning Theory, which emphasize that learning is an active, social process. Constructivist theory, influenced by Vygotsky (1978), suggests that learners construct knowledge

through interaction, dialogue, and reflection. Discussion-based teaching aligns strongly with this perspective by promoting peer interaction and collaborative meaning-making. Active Learning Theory further supports instructional strategies that require students' active participation. Prince (2004) argues that methods engaging students in meaningful activities enhance understanding, retention, and higher-order thinking. From this standpoint, discussion-based teaching is expected to produce better learning outcomes than traditional lecture-based instruction.

Conceptual Framework

The conceptual framework illustrates the relationship between teaching methods and student learning outcomes. The independent variable is the teaching method (lecture vs. discussion), while the dependent variables are academic achievement and student engagement. Students' perceptions serve as the qualitative explanatory component.

Independent Variable:

- Lecture Method
- Discussion Method

Dependent Variables:

- Academic Achievement
- Student Engagement

The framework assumes that discussion-based instruction increases engagement, which subsequently improves academic achievement. Qualitative findings explain how students experience these methods.

Research Methodology

Research Approach

A mixed-methods approach integrating quantitative and qualitative methods was employed to provide a comprehensive understanding of teaching effectiveness. The population of the study comprised female undergraduate students enrolled in the Department of Education at the Women Sub-Campus, University of Malakand (Batkhela), Pakistan**.** These students were studying education-related courses delivered through lecture and discussion teaching methods.

A purposive sample of 60 female undergraduate students from the Department of Education, Women Sub-Campus Batkhela, University of Malakand, was selected. The participants were divided into two intact instructional groups:

- Lecture Method Group (n = 30)
- Discussion Method Group (n = 30)

For the qualitative phase**,** 12 female students were selected using maximum variation purposive sampling to represent diversity in academic performance, classroom participation, and learning experiences. Quantitative data were analyzed using descriptive statistics and independent samples t-tests. Qualitative data were analyzed thematically. Findings were integrated during interpretation. Data analysis was conducted in alignment with the research objectives using both quantitative and qualitative procedures. Quantitative data addressed comparative effectiveness, while qualitative data explained students' experiences and perceptions.

Objective 1:

To compare the effect of lecture and discussion methods on students' academic achievement

An independent samples t-test was used to compare post-test scores of students taught through lecture and discussion methods.

Table 1: Comparison of Post-Test Achievement Scores

Teaching Method	N	Mean	Std. Deviation	t-value	p-value
Lecture Method	30	65.40	6.85		
Discussion Method	30	72.85	7.10	4.72	0.000

Interpretation

The results indicate that students taught through the discussion method achieved significantly higher post-test scores (M = 72.85) compared to those taught through the lecture method (M = 65.40). The p-value ($p < .05$) confirms that the difference is statistically significant. This suggests that discussion-based instruction is more effective in enhancing academic achievement at the higher education level.

Objective 2:

To examine differences in student engagement between lecture and discussion methods

Student engagement data were analyzed using mean comparison and t-test.

Table 2: Comparison of Student Engagement Scores

Teaching Method	N	Mean	Std. Deviation	t-value	p-value
Lecture Method	30	3.12	0.54		
Discussion Method	30	3.89	0.48	6.31	0.000

Interpretation:

Students in the discussion method group demonstrated significantly higher engagement levels than those in the lecture group. The higher mean score (M = 3.89) indicates that discussion-based classes encouraged participation, interaction, and interest in learning.

Objective 3: To explore students' perceptions of lecture and discussion methods

Qualitative data from semi-structured interviews were analyzed thematically. Three major themes emerged.

Table 3: Themes Derived from Qualitative Analysis

Themes	Description	Participant Statement
Active Participation	Discussion-based classes encouraged students to actively participate by sharing opinions, asking questions, and responding to peers.	In discussion classes, we are not silent listeners; everyone is expected to speak.
Improved Confidence	Regular involvement in discussions helped students overcome hesitation and build confidence in expressing ideas publicly.	Earlier I was afraid to speak, but discussion classes made me confident.
Enhanced Peer Interaction	Students experienced increased interaction with classmates, promoting collaborative learning and mutual support.	We learn a lot from each other during group discussions.

Deeper Conceptual Understanding	Discussion enabled clarification of concepts through explanation, debate, and multiple viewpoints.	When different students explain, concepts become clearer.
Critical Thinking Development	Students reported improved ability to analyze, question, and evaluate ideas rather than memorizing content.	Discussion makes us think deeply instead of just remembering notes.
Increased Learning Motivation	Interactive discussions motivated students to prepare before class and remain attentive during sessions.	I prepare more because I know I have to participate.
Positive Classroom Environment	Students described discussion-based classes as friendly, supportive, and less stressful.	The class atmosphere is relaxed and encouraging.
Reduced Learning Passivity	Discussion method minimized passive learning and boredom commonly associated with long lectures.	In lectures we feel sleepy, but discussion keeps us active.

Interpretation:
The thematic analysis highlights that discussion-based instruction significantly enhances multiple dimensions of student engagement. Participants emphasized active participation, confidence building, peer learning, critical thinking, and motivation as key benefits. These findings explain the higher engagement scores observed quantitatively and demonstrate how discussion-based teaching creates an interactive and learner-centered environment in higher education.

Discussion of Objective 4: Integration of Quantitative and Qualitative Findings
Objective 4 aimed to integrate quantitative and qualitative findings in order to develop a comprehensive understanding of teaching effectiveness in higher education. In line with the mixed-methods explanatory sequential design, quantitative results provided evidence of differences in academic achievement and student engagement between lecture and discussion methods, while qualitative findings explained the underlying reasons for these differences.
The quantitative phase revealed that students taught through the discussion method demonstrated significantly higher academic achievement and engagement levels compared to those taught through the lecture method. These statistical differences established the effectiveness of discussion-based teaching. However, quantitative data alone could not explain how and why discussion methods were more effective. This gap was addressed through qualitative findings. Qualitative themes such as active participation, peer interaction, confidence building, critical thinking development, and positive classroom environment provided rich explanations for the higher scores observed quantitatively. Students' narratives indicated that discussion-based

instruction fostered meaningful interaction, reduced passivity, and encouraged deeper cognitive engagement. This convergence of findings strengthens the validity of the results through methodological triangulation.

The integration of findings also aligns with Constructivist Learning Theory, which emphasizes learning as a socially mediated process. Quantitative improvements in achievement and engagement were supported by qualitative evidence showing collaborative knowledge construction through dialogue and interaction. Similarly, Active Learning Theory helps explain how discussion-based practices transformed students from passive recipients of information into active contributors, resulting in improved learning outcomes.

Furthermore, the integrated findings highlight that teaching effectiveness in higher education should not be evaluated solely through examination scores. Student perceptions, motivation, and engagement are equally critical indicators of effective pedagogy. The mixed-methods approach allowed this study to capture both measurable outcomes and lived experiences, offering a holistic view of instructional effectiveness.

In the context of public universities in Pakistan, where lecture-based teaching remains dominant, the integrated findings suggest a strong need for pedagogical shift toward interactive and learner-centered approaches. The integration of quantitative and qualitative evidence provides compelling support for adopting discussion-based teaching strategies to enhance both academic and experiential aspects of student learning.

Discussion

The present study aimed to compare lecture and discussion methods in higher education by examining academic achievement, student engagement, and perceptions, and integrating quantitative and qualitative findings to provide a comprehensive understanding of teaching effectiveness. Using a mixed-methods explanatory sequential design, the study collected quantitative data on achievement and engagement, followed by qualitative data to explore students' experiences.

Objective 1:

Quantitative analysis revealed that students in the discussion method group achieved significantly higher post-test scores than those in the lecture group. This finding aligns with recent studies indicating that active and interactive learning approaches enhance student outcomes (Freeman et al., 2014; Deslauriers et al., 2019; Prince, 2004). Discussion-based instruction facilitates deeper comprehension, retention, and higher-order cognitive skill development.

Objective 2:

Analysis of student engagement showed higher mean engagement scores for the discussion group. The expanded qualitative themes highlighted eight dimensions: active participation, improved confidence, enhanced peer interaction, deeper conceptual understanding, critical thinking development, increased learning motivation, positive classroom environment, and reduced learning passivity. These findings are consistent with Constructivist Learning Theory emphasizing social interaction and collaborative meaning-making (Vygotsky, 1978) and Active Learning Theory, which highlights the importance of cognitive and social engagement for learning effectiveness (Prince, 2004; Bonwell & Eison, 1991; Styers et al., 2018).

Objective 3:

Qualitative exploration of students' perceptions reinforced quantitative findings. Students reported that discussion-based classes facilitated idea-sharing, clarified concepts, boosted confidence, and increased motivation, whereas lecture-based classes were perceived as passive and less engaging. Similar findings have been reported in higher education studies emphasizing the value of student-centered pedagogies (Michael, 2016; Freeman et al., 2014).

Objective 4:

Integration of quantitative and qualitative data provided a holistic understanding of teaching

effectiveness. Quantitative improvements in achievement and engagement were explained by qualitative themes related to interaction, motivation, and classroom environment. This triangulation confirms the superiority of discussion-based methods in fostering academic and affective outcomes and validates the explanatory sequential mixed-methods approach (Creswell & Plano Clark, 2018; Fetters et al., 2013).

Overall, discussion-based teaching enhances academic achievement, multidimensional student engagement, and positive learning experiences. These results suggest that public universities in Pakistan should adopt discussion-oriented strategies to promote inclusive, interactive, and effective learning environments. The study highlights that effective teaching encompasses measurable outcomes and the cultivation of engagement, motivation, and critical thinking. Integrating both quantitative and qualitative insights provides a comprehensive evidence base for educators, administrators, and policymakers.

Conclusion

This study examined the comparative effectiveness of lecture and discussion teaching methods in higher education through a mixed-methods approach, integrating both quantitative and qualitative data. The findings reveal that discussion-based instruction significantly enhances academic achievement, student engagement, and overall learning experiences compared to traditional lecture methods.

Quantitative analysis demonstrated higher post-test scores and engagement levels for students taught through discussion methods. Qualitative insights provided deeper understanding of these results, highlighting eight key dimensions of engagement: active participation, improved confidence, enhanced peer interaction, deeper conceptual understanding, critical thinking development, increased learning motivation, positive classroom environment, and reduced learning passivity. Students consistently reported that discussion-based classes encouraged interaction, fostered motivation, and created a supportive learning environment, aligning with Constructivist and Active Learning theories.

The integration of findings confirms that teaching effectiveness in higher education encompasses both measurable academic outcomes and affective dimensions such as engagement, motivation, and confidence. Discussion-based pedagogy provides a learner-centered environment that promotes active knowledge construction, critical thinking, and meaningful participation. The study supports the adoption of discussion-oriented teaching strategies in public universities in Pakistan to enhance instructional quality, learning outcomes, and student engagement. This research contributes to the evidence base for higher education pedagogy and offers practical guidance for educators, administrators, and policymakers seeking to implement effective, student-centered teaching practices.

Recommendations

Based on the findings of this study, the following five major recommendations are proposed to enhance teaching effectiveness in higher education, particularly in public universities in Pakistan:

1. **Adopt Discussion-Based Pedagogy:** Universities should encourage instructors to integrate discussion-oriented teaching strategies to promote active student engagement and higher academic achievement.
2. **Faculty Development Programs:** Conduct regular training workshops for faculty to improve skills in facilitating interactive classrooms and applying active learning techniques.
3. **Curriculum Design:** Design curricula that allow flexibility for interactive sessions, group discussions, and collaborative projects to reinforce learning outcomes.
4. **Classroom Environment:** Create supportive and inclusive classroom environments that foster confidence, participation, and motivation among students.
5. **Assessment Practices:** Implement formative assessments that evaluate both cognitive and affective learning outcomes, including engagement, critical thinking, and collaborative skills.

6. **Technology Integration:** Utilize educational technology tools such as discussion forums, collaborative platforms, and interactive applications to supplement discussion-based teaching methods.

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