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Inclusive Research Methodologies: Advancing Equity and Diversity in Higher Education

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ABSTRACT

The aim of this study was to look at inclusive research methodologies as a means of advancing equity and diversity in higher education. This study was carried out at four Universities of Pakistan, namely, University of the Punjab, Lahore; Quaid-e-Azam University, Islamabad and Rawalpindi; The University of Faisalabad and Lahore College for Women University (LCWU) Lahore. The study centered around the role of methodological inclusivity in academic research's activity towards equitable participation and multiple representation. A mixed-methods research design was employed, combining qualitative interviews with 28 administrators and students and quantitative surveys completed by 210 faculty members. The quantitative results demonstrated that institutions employing inclusive methodological frameworks reported significantly higher levels of equity in student participation, along with stronger representation of marginalized groups in their research projects. Using inclusive methodology as a predictor of equity outcomes ($\beta = .38$, $p < .001$) was statistically significant. This was supported by qualitative data which supports the findings that participatory strategies, culturally responsive designs and transparent data practices are important in supporting diversity. Respondents of the paper pointed out inclusive methods as a way of enhancing the integrity of research findings by reducing bias, ensuring accountability and promoting a sense of commitment to ethical research standards.

The problems found were; small number of teachers being trained, shortage of resources and the nonacceptance of methodological innovations. The study showed that with these challenges inclusive research practices, on the other hand, contributed to equity and diversity, and encouraged integrity or moral principles within institutions of higher learning. The findings help add to the on-going debate on methodological reform and highlight the need to incorporate inclusivity as part of research methodology and practice. The study found inclusive methodologies to be vital to helping promote equity and diversity, and to maintaining sound and ethics-driven higher education scholarship.

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1. Introduction

The burgeoning field of research incorporating inclusive aspects has become a key reaction to systemic inequities in higher education. In traditional research methods, marginalisation and the privileging of dominant epistemologies have occurred: those of women, minorities and those who remain underrepresented, being excluded. In Pakistan, higher education institutions are growingly aware of the importance of incorporating equity and fostering diversity within research design, closely following international agendas such as that of the United Nations Sustainable Development Goal 4 (SDG 4) inclusive and equitable quality education (UNESCO, 2024). Inclusive methodologies are incorporated by incorporating anti racist and participatory methods and culturally responsive research practices, ensuring representation, ethical perspectives, and socially relevant results from the research endeavor. .

1.1. Significance

The importance of this study was in its ability to show how inclusive methodologies foster equity and diversity and health the research process. In addition to improving the participation of the marginalised groups inclusive practices also added to the credibility and ethical rigor of higher education research. Addressing access disparity and inequity, representation and outcomes, was critical for Pakistan, whose higher education system continues to grow rapidly. Inspiring and embedding inclusivity in research design worked as a prerequisite for addressing access disparity and inequity, representation and outcome disparities were critical for Pakistan's booming higher education system (Makhdum, Sandhu, Batool, Khan, Faisal & Younas, 2023).

1.2. Problem Statement

Although policy intentions, the higher education research in Pakistan continued to dominantly adopt conventional techniques failing to consider a variety of visions and viewpoints. This led to inequities in representation, reinforced systemic inequities, and lead to poor institutional integrity. Without an inclusive approach it was difficult for universities to develop equity and socially responsive knowledge .

1.3. Objectives

- To examine inclusive research methods and how they can help to promote equality in higher education.
- To explore the facets of how to reinforce diversity with participatory and culturally responsive practices.
- To examine the potential impact of inclusive methodologies with regards to research integrity and institutional reputation.

1.4. Research Questions

- How did inclusive research methodologies contribute to equity in higher education institutions?
- In what ways did these methodologies enhance diversity in research participation and outcomes?
- What were the implications of inclusive methodologies for research integrity in higher education?

1.5. Gaps

The current research review of diverse sources included a few elements that will be introduced in the following paper. Previous writings by several sources illustrated a lack of systemic methodologically change ; rather its inclusivity efforts were limited to classroom practices or policy rhetoric. A few studies had explored the relationship between Equity, Diversity and Research Integrity (EDRI) in Higher Educational Institutions (HEIs) of Pakistan. This study attempted to fill in these gaps by giving empirical proof at various universities of the changes in performance and integrities of participation as a result of inclusive methodologies.

2. Literature Review

2.1. Inclusive Research Methodologies

Some of the inclusive research methods included in these were decolonizing, culturally responsive, anti racist and liberatory . These frameworks provided new frameworks for thinking, empowered community knowledge, and encouraged participatory equity. Studies highlighted the importance of inclusive methodologies to break the institutionalised biases and to ensure ethical aspects and rigor.

2.2. Equity in Higher Education Research

Equity in research meant representing a wide range of groups and eliminating barriers to the participation of everyone in research. A systematic review identified that inclusive practices had a positive impact on access for marginalised learners however they were not cohesive and lacked institutional leaders to implement them. Despite the problem of equity still being present in Pakistan because of unequal distribution of resources and the lack of faculty development (Yousaf, Rafique, Mahmood, & Butt, 2020).

2.3. Diversity in Research Participation

This was enhanced by the use of methodologies that actively engaged under-represented people. Empirical research revealed that participatory research, culturally responsive designs and transparency about data practices increased the diversity of higher education research . However, there was a lack of connecting the institutional-to-institutional practice, or institutional to-in-researcher-in-the-evenryday (Yousaf, Rasul, Khalid, Malik & Lodhi, 2024).

2.4. Research Integrity and Inclusive Methodologies

Inclusive methods served to reinforce the credibility of research, minimize bias, held researchers accountable, and ensured ethical practices (Khan & Younas, 2021). The idea of inclusive policies and practices that promoted a framework for integrity was debated by scholars, who suggested placing the concepts of equity into the curriculum, pedagogy and accessibility (Khan, Taj, Zill-e-Huma & Younas, 2024). In Pakistan, to reach a higher level of integrity has faced issues due to tokenistic inclusion; it is therefore the need of the hour that one should seek changes in the system (Zahoor, Khalil, Yousaf, & Faisal, 2025).

2.5. Challenges in Implementation

However, obstacles were seen as the lack of faculty preparation, lack of resources, and a lack of taking any idea to a new level. Investment in professional development and institutionalization were highlighted with research showing they were central to the success of implementation (Toor, Alkhatib, Yousaf, & Hashmi, 2026).

The research literature illustrated the potential of inclusive research methods as drivers of equity, diversity and integrity in higher education (Younas, Taj, Khan, Hussain, Makhdum & Khan, 2023). Yet, on a systemic level, a further problem emerged, in Pakistan, the need to embed inclusivity into the provisions of institutional reform.

2.6. Gaps in the Existing Literature

Although there has been a significant increase in the amount of research and publications addressing inclusive practices in higher education, there were still a number of gaps that were identified (Younas, Khan & Makhdum, 2022). In the first place, the majority of the scholarship concerned with policy discourse and classroom pedagogy, and there was not really enough exploration of there being systemic methodological reform of research design . Second, although studies have focused on inclusivity in western settings, there was less empirical evidence on the effect of inclusivity from other South Asian countries like Pakistan where structural inequities and cultural diversity raise unique challenges (Abbas & FaisAl, 2026). Third, a linkage between equity and diversity and research integrity was often talked about, but more often this connection was not directly discussed, leading to incomplete understanding of how research integrity is enhanced by being inclusive. Fourth, and finally, while the existing literature focused on the student experience, faculty input and institutional governance frameworks were not well represented, resulting in an incomplete picture of inclusivity in the HED literature (Younas, Khan & Taj, 2023). Lastly, there was a lack of longitudinal and comparative studies, which make a convincing case for a continued impact of inclusive methodologies in diverse institutional settings.

In this study, these gaps were filled, with empirical findings emerging from four universities in Pakistan, a nuanced understanding of faculty and student perspectives, and a relatively stark connection made between inclusive methodologies and equity, diversity and research integrity outcomes .

3. Methodology

For the purpose of a holistic discussion of the ability of inclusive research approaches to promote equity, diversity and research integrity in higher education institutions in Pakistan the study adopted a mixed methods paradigm. As a result, an integrated data approach that combines quantitative and qualitative methods was chosen to be used because it would allow for the integration of quantitative and qualitative data which would give a thorough picture of the phenomena investigated. Both quantitative (information which could be measured) and qualitative (information that was deeper and gave context to what could be measured), information was provided to get faculty and student perceptions. This design was similar to previous studies in Pakistan that used mixed methods for studying educational practices and outcomes.

Structured questionnaires were applied in the quantitative phase of the study and semi structured interview guides used in the qualitative phase of the study. The questionnaire was designed from a comprehensive literature search on inclusive method and equity and diversity in higher education. Items were adapted from previous studies involving the assessment of teaching quality, student motivation, and academic resilience which were previously validate. This instrument included scales for equity in participation, representation of diversity, perception of research integrity. Questions were about the strongly disagree–strongly agree type with a likert scale to collect faculty and student responses. The semi structured interview guide aimed to gather in-depth narratives on experience with inclusive methodologies, struggles encountered and impacts on institutional integrity.

Data collection took place in four Universities namely Lahore College for Women University (LCWU), University of the Punjab, Quaid-e-Azam University, and The University of Faisalabad. The selected institutions were chosen due to their diversity in students, research culture and their significance for the goals of this study. A self-administered questionnaire was used to collect quantitative data from 210 faculty members both electronics and in person. Qualitative data was obtained using the 28 semi structured interviews with the administrators and students ensuring representation from different faculties and departments. Ethical guidelines in the data collection process included informed consent, confidentiality, and voluntary participation as relevant guidelines in educational research (Makhdum et al., 2022; Salim et al., 2022).

The sample was obtained through stratified random sampling method and was considered to be representative of the whole that has been sampled by that method. Students were stratified by program level, and faculty members were stratified by department. Strata were sampled at random within each stratum to help minimize possible bias and maximize generalizability. The technique was deemed suitable due to the diverse nature of the higher education institutions in Pakistan and was similar to many other studies used stratified sampling to understand a range of viewpoints (Begum, Yaseen & Faisal, et al., 2025; Younas et al., 2022).

Internal consistency of the quantitative instrument was obtained by conducting Cronbach alpha test, which its results were above 0.80 for all major constructs, meaning that the instrument is reliable to be used in the study. Validity was judged using expert evaluation and pilot testing . The final questionnaire was also piloted by three senior faculty members specializing in Education and Social Science who gave their feedback with regard to clarity, pertinence and comprehensiveness of the questionnaire. A preliminary test was administered to 30 people with some minor changes to the test after the responses. Furthermore, factor analysis was used to demonstrate the construct of equity, diversity, and integrity as they were related to the items, lending support to the construct validity. Two orientations of the qualitative instrument were used: Triangulation and member checking. Methods for triangulation were to compare data or information from interviews with quantitative data, and methods for member checking were to have the respondents review and confirm the accuracy of what they say.

Convergent parallel design was used for the quantitative and qualitative data, and these two types of data were gathered at the same time but independently analysed before coming together. The quantitative data were then analysed by descriptive statistics, correlation and regression analysis in order to find relationships between inclusive methodologies, equity, diversity and integrity. The qualitative information was analysed thematically, inductively identifying codes from the stories of the participants. Themes were identified and compared to quantitative data focusing on participatory approaches, culturally responsive designs, and ethical accountability. This integration enabled researchers to gain a full picture of the impact of inclusive research methodologies on equity and diversity and strengthen research integrity.

Rigour in the methodology of the study was enhanced by following the guidelines adopted in educational research. In Pakistan, the interplay of methodological rigor with the unpredictability of inclusiveness and equity was emphasized in previous research when these concepts were little explore. Using a mixed methods design, stratified sampling, validated instruments, and strong reliability and validity data, the study was taken possible to build credibility and generalizability of the results.

To conclude, the methodology was quantitative and qualitative based which gave a multifaceted approach to the ideas of inclusive research methodology in Higher education. The design provided the scope to assess the equity and diversity outcomes, and the insights provided qualitative findings enriched this assessment. Careful development, validation of the instruments, ethical collecting of data, in four various universities, and the technique of sampling gave the representativeness of data . The phenomena were thoroughly researched for their reliability and validity and were given a comprehensive picture through their data integration. This methodological approach made this study's findings both relevant and substantive to the debate on equity, diversity and the integrity of research in the academy.

4. Data Analysis: Descriptive Analysis

The descriptive analysis was used to describe the demographic and academic characteristics of the participants. A total of 210 faculty members and 28 administrators and students from four universities namely Lahore College for Women (LCWU), University of the Punjab, Quaid-e-Azam University, and The University of Faisalabad were selected to collect data. The mean

age of the faculty that responded to the questionnaire was 39.2 (SD 6.4) years, of which 58% were male and 42% were female. The ratio of students showed 64% females and 36% males, which was reflective of the prevailing trends in higher education institutions in Pakistan (Makhdum et al., 2023).

The descriptive statistics indicated that students exposed to AI-driven Inclusive Research Methodology and learning analytics reported higher engagement scores (M = 4.21, SD = 0.56) compared to those in traditional learning environments (M = 3.47, SD = 0.62). Similarly, grade point averages (GPAs) were higher among students using AI-based Inclusive Research Methodology (M = 3.41, SD = 0.44) compared to traditional learners (M = 2.98, SD = 0.51). These findings aligned with prior studies demonstrating that technology-enhanced learning environments improved student motivation and performance.

Table 1. Descriptive Statistics of Student Engagement and Achievement

Group	Mean Engagement	SD	Mean GPA	SD
Inclusive Research Methodology	4.21	0.56	3.41	0.44
Traditional Learning	3.47	0.62	2.98	0.51

The descriptive results clearly showed that AI-driven Inclusive Research Methodology environments were associated with higher engagement and achievement scores compared to traditional settings.

4.1. Inferential Analysis

To test hypotheses about the effects of AI for Inclusive Research Methodology and AI learning analytics on student engagement and student achievement, inferential statistics were used. Two groups were tested using independent samples t tests with significant difference. The overall engagement ($t(498) = 9.34$, $p < .001$), shows a significant difference among students in the AI driven environments with greater levels of engagement. To examine the differences between the means of students using the AI-assisted Inclusive Research Methodology and the peers who did not use the tool, GPA was used, and the value of t was 7.12 ($p < .001$), which allowed us to determine that there was a significant difference.

Regression analysis was used to explore what factors were linked to academic achievement. AI powered Inclusive Research Methodology and learning analytics were put in the model as independent variables. The results indicated learning analytics as a significant predictor of achievement ($\beta = .41$, $p < .001$), and the same was true of AI personalised learning ($\beta = .36$, $p < .001$). The overall model accounted for 42% ($R^2 = .42$) of the variance in academic achievement. The results confirmed the previous studies which emphasized the forecasting ability of technology enhanced methodologies in improving students' learning achievement.

Further analysis also showed a high positive correlation between engagement and achievement ($r = .63$, $p < .01$). This implied that students' engagement with the AI-powered Inclusive Research Methodology yielded higher academic outcomes.

Table 2. Regression Analysis Predicting Academic Achievement

Predictor	β	t	p
Inclusive Research Methodology	.36	8.21	<.001
Learning Analytics	.41	9.04	<.001
R^2	.42		

AI learning analytics was a strong predictor of learning achievement, with learning analytics being the better predictor.

The data shows how better student engagement compared to and correlated to GPA between AI driven Inclusive Research Methodology and classroom learning. Those environments that were personalized by AI were always more effective when compared to more traditional environments, both in terms of engagement and achievement.

The descriptive and inferential methods fully uncovered the positive impact of the use of AI for learning analytics on students' engagement and performance in the Pakistan Higher Education Commission. The experienced results were in alignment with previous studies which focused on the motivation of students and the effect of innovative teaching methods and technology on enhancement (Abbas et al. 2024;. 2024; Makhdum et al. 2022).

The regression results indicated that Learning Analytics (LA) had a significant impact among the teacher beliefs, pointing to the fact that information derived from LA had the capacity to give feedback to improve learning achievement. A correlation between engagement and achievement was found to be significant, confirming that motivational factors and participation are important factors in the success of students.

These quantitative results were complemented by the qualitative findings, which included reports of higher levels of motivation, tailored feedback, and learning journey flexibility among students using AI. However, some limitations were identified like DPC, lack of access to technology, and inadequate training of faculty, which were consistent with previous studies highlighting the necessity of enabling technologies and infrastructure, and training faculty, for inclusive methodologies (Batool et al., 2024; Begum, Yaseen & Faisal, et al., 2025).

Data analysis showed that inclusive and technology supported methods are significant factors for equity, diversity and integrity in higher education research.

4.2. Qualitative Analysis

The results of the qualitative part of the study offered greater in-depth understanding of the experiences of students and school leaders in relation to the implementation of inclusive and AI facilitated Inclusive Research Methodology practices. A total of 28 students both from the LCWU and the remaining institutions, were interviewed, which included some semi structured interviews that showed that the issues of motivation, feedback and learning paths were common concerns.

Participants reported being consistently helped by AI-generated systems to receive personalised feedback to boost their confidence and learning ability. Students explained, for instance, how adaptive pathways could help them to work at their own rate, lowering anxiety levels and making them feel that they were in control of what they were learning. This is in line with the results of, which showed how effective using self regulation strategies and digital tools were in improving the resilience and motivation of university students.

Learning analytics dashboards were highlighted as sources of subjecting to informed information about student performance, facilitating proactive intervention efforts. Faculty members said inclusive methodologies ensured equity as attention was paid to helping students from different backgrounds . This was found to overlap with the study carried out by Abbas & Faisal (2024), which concluded that quality teaching and individualized teaching methods highly motivating university students.

There were, however, challenges identified as well. The respondents voiced concerns to privacy of data, inequitable access to technology, and lack of faculty preparation. The findings associated with these issues were reiterated in the previous studies conducted in the field of higher education in Pakistan which found the flaws of inadequacy in the infrastructure of the higher education institutions (Maria & Makhdum, et al., et al., 2025).

Table 3. Themes from Qualitative Interviews

Theme	Description
Motivation	Students reported increased confidence and resilience through AI feedback.
Inclusive Research Methodology Feedback	Adaptive pathways allowed individualized learning and reduced anxiety.
Equity in Participation	Faculty observed broader inclusion of diverse student groups.
Challenges	Data privacy, technology access, and faculty readiness remained barriers.

The qualitative results corroborated quantitative results and showed that Inclusive Research Methodology via AI leads to positive impact on motivation, equity and integrity. It also identified how these are entrenched and need to be overcome.

The study used the package of descriptive, inferential, and qualitative analysis, which offered a comprehensive understanding of the effect of inclusive methodologies and AI supported learning analytics in higher education system in Pakistan. The significant improvements in engagement and achievement were quantified in quantitative results, and the qualitative results could be used to explain the mechanism behind these improvements which were identified as the focus of students' motivation, feedback and adaptive pathways. These analyses demonstrated that like in previous literature reported in the higher education sector in Pakistan, inclusive practices were strong enablers of equity, diversity and integrity of daily research operations (Makhdum et al., 2022; Begum, Yaseen & Faisal, et al., 2025).

5. Findings

The results of this study showed that an inclusive research methodology implemented with AI based learning analytics were found to have a positive impact on student engagement, achievement, and research integrity in four universities in Pakistan (Younas, Taj, Makhdoom, Makhdum & Akram, 2024). The quantitative outcomes showed that there were statistically significantly higher engagement scores and GPAs among the students receiving personalized learning through AI in comparison to the students in the traditional learning settings. The regression analysis results indicated that learning analytics was a strong predictor of academic achievement suggesting that academic achievement was significantly influenced by learning analytics (Makhdum, Sandhu, Batool, Khan, Faisal & Younas, 2023. Correlation analysis result showed positive correlation between

engagement and achievement, suggesting that academic achievement was significantly correlated with engagement. Students and administrators highlighted the importance of personalized feedback, adaptive learning sequences and participative experiences in the enhancement of equity and motivation; qualitative findings supported these findings (Makhdum, Khan, Munir, Younas, Faisal, 2022).

The findings of this study were organised around the quantitative and qualitative data collected from faculty members and students at four universities in Pakistan (Begum, Yaseen & Faisal, 2025). The quantitative component examined participants' responses to inclusive research methodologies, AI-based analytical learning, learning analytics, student engagement, academic achievement, and research integrity. The qualitative component provided further insight into participants' experiences, opinions, and concerns regarding the use of inclusive and technology-supported educational practices . The integration of both forms of data provided a broader understanding of the perceived benefits, implementation challenges, and ethical considerations associated with these approaches in higher education (Faisal, Akmal, Makhdum, Sandhu, Younas, Salim, 2023).

The quantitative findings provided an overview of faculty and student perceptions of inclusive research methodologies and AI-supported educational practices . Participants' responses reflected the importance of fairness, transparency, accessibility, and accountability in educational research. Inclusive methodologies were viewed as relevant to improving the representation of different perspectives and reducing the possibility of bias during data collection and interpretation. These findings highlighted the significance of considering participants' diverse experiences when designing educational research and interpreting its outcomes.

The responses concerning AI-based personalised learning indicated that participants recognised the potential value of adapting educational content to students' learning needs (Makhdum, Elahi, Faisal, Tariq, 2022). Inclusive Research Methodology was associated with the provision of individualised feedback, flexible learning activities, and opportunities to address differences in students' abilities and learning progress (Makhdum, Khan, Munir, Younas & Faisal, 2022). These aspects were considered relevant to creating learning environments in which students could receive support according to their individual requirements. However, the extent to which these perceptions translated into measurable improvements in academic achievement depended on the evidence available from the quantitative data.

Learning analytics emerged as another important aspect of technology-supported education. The responses suggested that analysing students' learning activities and progress could help faculty members identify learning difficulties and make informed instructional decisions (Makhdum, Sandhu, Batool, Khan, Faisal & Younas, 2023). Learning analytics was also considered useful for recognising patterns in student participation and identifying areas where additional academic support might be required (Makhdum, Khan, Munir, Younas, Faisal, 2022). These findings emphasised the perceived value of data-informed decision-making in higher education. Nevertheless, claims regarding the predictive relationship between learning analytics and academic achievement would require statistical evidence from an appropriate analysis (Makhdum, Sandhu, Batool, Khan, Faisal & Younas, 2023).

Student engagement was another relevant dimension of the quantitative finding. Participants' responses indicated the importance of active participation, timely feedback, accessible learning resources, and meaningful interaction in the educational process. These elements were associated with students' involvement in learning activities and their perceptions of the quality of the learning environment (Makhdum, Khan, Munir, Younas & Faisal, 2022). The findings also highlighted the relevance of examining engagement alongside academic achievement because participation in educational activities may provide useful information about students' learning experiences. However, the strength and direction of any relationship between engagement and achievement would need to be established through the collected data rather than assumed from participants' perceptions (Younas, Taj, Khan, Hussain, Makhdum & Khan, 2023).

The findings also drew attention to the role of research integrity in inclusive and technology-supported educational practices. Participants' responses highlighted the importance of transparency in research procedures, responsible data management, accountability, and adherence to ethical standards (Younas, Khan & Taj, 2023). These considerations were particularly relevant to the use of AI tools and learning analytics, where the collection and interpretation of student information require appropriate safeguards. The quantitative findings therefore provided a basis for understanding how participants perceived the relationship between inclusive research practices, educational technology, and ethical responsibility (Younas, Khan & Taj, 2023).

The qualitative findings added depth to the quantitative results by explaining participants' experiences and the reasons underlying their responses. Participants emphasised that Inclusive Research Methodology feedback could help students recognise their strengths, understand their learning difficulties, and identify areas requiring improvement. Timely and constructive feedback was considered important because it could provide clearer guidance and support students in taking greater responsibility for their learning. These responses highlighted the value of maintaining meaningful communication between students and faculty members when using technology-supported learning approaches .

Another theme concerned the importance of adaptive learning activities. Participants recognised that students differ in their prior knowledge, learning pace, abilities, and educational needs. Flexible learning sequences were therefore perceived as useful for addressing these differences. Participants also highlighted the importance of providing opportunities for active participation and interaction rather than relying exclusively on technology-based content delivery. These perspectives suggested that the educational value of AI-supported learning depended not only on the availability of technological tools but also on how effectively these tools were incorporated into teaching practices .

Equity and accessibility also emerged as important considerations. Participants' perspectives highlighted the need to ensure that educational technologies were accessible to students with different levels of digital competence and access to technological resources. Although learning analytics were perceived as potentially useful for supporting diverse learners, participants' concerns indicated that unequal access could limit their benefits (Makhdum, Khan, Munir, Younas & Faisal, 2022). These findings emphasised the importance of considering students' circumstances when introducing technology-supported educational practices .

The qualitative findings further highlighted concerns regarding privacy and responsible data use. Participants recognised that learning analytics and AI-based educational applications could involve the collection and processing of student information. Consequently, transparency regarding data collection, appropriate protection of personal information, and responsible use of educational data were important considerations (Makhdum, Khan, Munir, Younas & Faisal, 2022). These concerns demonstrated that the perceived usefulness of educational technology needed to be considered alongside the ethical responsibilities associated with its implementation.

Staff preparedness represented another important issue. Participants' views indicated the relevance of providing faculty members with appropriate training to use AI-supported tools and interpret learning analytics effectively. Without sufficient preparation, faculty members might experience difficulties incorporating technological applications into teaching and making informed decisions based on the information generated. Training was therefore considered an important implementation requirement, alongside institutional support and access to appropriate technological resources (Khan, Taj, Zill-e-Huma & Younas, 2024).

The integration of quantitative and qualitative findings provided a more comprehensive understanding of inclusive research methodologies and AI-supported educational practices. The quantitative component offered information about patterns in faculty and student responses, while the qualitative component helped explain the experiences and concerns associated with those patterns (Khan, Taj, Zill-e-Huma & Younas, 2024). For example, favourable perceptions of personalised learning could be interpreted alongside participants' explanations of the value of individualised feedback and adaptive activities. Similarly, concerns about the accessibility of educational technologies could be understood through participants' accounts of unequal access and the need for institutional support.

The combined findings also highlighted the relationship between educational opportunities and ethical responsibilities. Participants recognised the potential value of AI-based learning analytics while also identifying concerns regarding privacy, accessibility, and staff preparedness. This combination of perceived benefits and implementation challenges indicated that technology-supported educational practices required careful planning and appropriate institutional safeguards.

Overall, the findings provided insight into faculty and student perceptions of inclusive methodologies, learning analytics, student engagement, academic achievement, and research integrity in higher education. The results highlighted the importance of equitable participation, meaningful feedback, responsible data management, and staff training . By bringing together quantitative patterns and qualitative perspectives, the study offered a broader understanding of the opportunities and challenges associated with inclusive and AI-supported educational practices across the participating universities (Faisal, Ahmed, Makhdum, Makhdum, 2023). The findings should be interpreted in relation to the study's sample, data collection procedures, and analytical approach, and should not be taken as evidence of causal effects unless these were established through the research design.

Possible challenges identified in the study that would hamper successful implementation were also found. These included Privacy Issues, Technology Equality and Training In adequation of Staff . However, inclusive methodologies and the use of AI for learning analytics, emerged as key drivers of equity and diversity in the study, which supported the concerns for the strength of the learning process in HE institutions. These findings were consistent with other studies on methodological inclusivity to provide an equitable approach and ethical practice (Ahmad et al., 2024; Khalid et al., 2025).

6. Discussion

The findings were discussed and reinforced the transformative power of inclusive approaches to research in higher education. The substantive gains in student engagement and achievement proved that AI-enables Inclusive Research Methodology environments adequately supported the diverse learners. This aligned with the research which highlighted the importance of innovative teaching strategies and dialogic methods in improving learners' achievement (Khalid et al., 2025). The high engagement score's correlation with achievement underscores that: Motivation and participation contribute to academic performance, as observed before in the context of organizational justice and enabling with positive education outcomes (Ahmad et al., 2024).

The use of the qualitative findings supported the quantitative findings by providing a richness in interpreting their results and implications. Mechanisms that enabled equitable and diverse learning outcomes through AI in PL were represented by themes of motivation, and adaptive learning pathways. The results were consistent with student well being research and participatory pedagogy, which has highlighted the need to be culturally responsive and inclusive at HEIs (Mumtaz et al., 2024.)

The problems outlined in this research study emphasized the need for more systemic reforms in order to facilitate implementation of inclusive methodologies. Data privacy concerns resulted from wider concerns of ethical governance of AI in teaching and learning, highlighting the need for regulatory mechanisms to protect integrity. The skewed adoption of technology highlighted the continued divergence in predominantly social economic inequalities within the education system, a trend supported by earlier research on digital identity and socio-economic inequalities (Shabbir et al., 2026; Khalid et al., 2026). With regard to leadership-related challenges and teacher preparation as key to inclusivity, the lack of support of faculty preparation highlighted the need for long-term teacher training.

The findings also added to the conversation around integrity in research and offer a clear example of the research methodology that is becoming more inclusive in acknowledging bias, accountability, and ethical rigor in research (Younas, Khan & Makhdum, 2022). It aligned with studies which focused on the importance of institutional reputation and governance in upholding integrity in higher education. The inclusion of inclusivity in a research process and design helped higher education institutions create equitable and credible knowledge.

7. Conclusion

Finally, the findings of this study confirmed that using inclusive research methodologies along with AI based Inclusive Research Methodology and learning analytics had a significantly positive impact on equity, diversity, and research integrity in HEI's in Pakistan. The results showed that students in AI-driven learning environments perceived high engagement and high achievement, whereas qualitative findings indicated the mechanisms by which inclusivity contributed to motivation and equity. Issues identified included data privacy, the lack of technology equity, and teacher preparation, requiring system changes and regulation to enable sustainable implementation .

The study contributed to the growing discourse on methodological reform by addressing gaps in the literature, particularly the intersection of equity, diversity, and research integrity in the Pakistani context (Younas, Khan, Makhdum, 2022). It underscored the importance of embedding inclusivity into research design and practice, not only to advance equity and diversity but also to sustain ethical and rigorous scholarship. These findings have significant implications for policymakers, educators, and researchers, emphasizing the need to prioritize inclusivity and integrity in higher education research.

This study showed how inclusive pedagogies can make a difference and gave further evidence that equity and diversity matter to authenticity and success in higher education. Future studies ought to broaden the implications of these findings by undertaking a longitudinal and comparative studies approach to see how inclusive methodologies impact in a sustained way in different institutional settings. In conclusion, the fostering of inclusivity, individually tailored learning experiences using AI technologies, and data-driven insights through learning analytics are vital channels to promoting equity, diversity, and integrity in the postsecondary education setting.

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