ADVANCE SOCIAL SCIENCE ARCHIVE JOURNAL
Available Online: https://assajournal.com
Vol. 04 No. 02. October-December 2025.Page# 3370-3383
Print ISSN: 3006-2497 Online ISSN: 3006-2500
Platform & Workflow by: Open Journal Systems
https://doi.org/10.5281/zenodo.18155554

Student Voices: Exploring AI's Role in Fostering Inclusive Higher Education

Rahimah Hashmi
MPhil, Division of Education, University of Education Township Lahore
Email: rahimahhashmi@gmail.com
Dr. Samra Bashir*
Assistant Professor in Education, Department of Educational Leadership and Policy Studies, Division of Education, University of Education, Lahore
Corresponding Author Email: samarabashir@ue.edu.pk
Dr. Sadia Afzal
Lecturer in Education, Department of Educational Leadership and Policy Studies, Division of Education, University of Education, Lahore
Email: sadiaafzal@ue.edu.pk

Abstract
Artificial intelligence is changing the face of higher education in unimaginable ways especially in making learning more inclusive. We did this study by asking students about their views on AI-powered educational resources, do these technologies improve access, equity, and engagement. The quantitative descriptive survey design was used to gather information on a wide range of group of university students in this study. Based on a structured questionnaire, the use of a five-point Likert scale, the data were collected using the Google form and analyzed with the help of simple statistical tools e.g. SPSS, including the frequency, percentages, means, and standard deviations. The results indicate that AI-based technologies are truly useful. Students tend to find AI-driven tools to be effective and in the personalization of learning, eliminating academic barriers, and engaging all people. Yet, some difficulties are still there e.g. unequal access, lack of reliable infrastructure, and multifaceted ethical issues are some of the issues noted by students. The research concludes that AI has theoretical potential to make higher education more inclusive. This improvement does not come automatically. Its success will be achieved when all people have access to these tools, institutions are ready to promote them, and inclusive pedagogies are taken into consideration initially.

Keywords: *Artificial intelligence, inclusive higher education, accessibility, equity, student engagement, AI Educational Tools*

Introduction

The idea of inclusive education is increasingly taking place in the global universities. SDG-4 promotes higher education as a core aspect of global development and as a replacement of primary education. And today, universities are not only the elite degree-givers but also the key players in creating a more inclusive and equal society and promoting lifelong education (Adipat and Chotikapanich, 2022). Increasingly, universities are viewed as entities that can do good to people. They need to expand access, fight discrimination, and foster social progress in general, not merely delivering credentials to an advantaged minority. In recent times, Artificial Intelligence(AI) has become an important concept in the field of education, especially in the provision of diverse and inclusive learning. The AI technologies can personalize the learning process, provide instant support, and adapt to the needs of every student. According to Luckin and Cukurova (2021), AI is able to bridge the educational divide by tailoring the material and increasing access to resources.

Educational inclusion is not only about disability it implies eliminating all barriers that do not allow students to learn. Exclusion may manifest itself in numerous forms: the migration, conflict, poverty, gender, language, living in distant locations, or ability (Shaeffer, 2019). And not just regarding financial resources. The power to make decisions, networks, and those possessing the information are what shape inequality. Normally, they are controlled by the elites, and not the masses (Reinders et al., 2021). This is particularly important to students with diverse backgrounds in terms of language, social-economic and even cultural backgrounds. Adaptive platforms do not use a one-size-fits-all model but instead determine points of weakness or strength and tailor the content to the student. Such scaffolding assists in the reduction of the gaps that more traditional classes frequently introduce to allow a wider audience to achieve (Dahal, 2024).

Tutoring AI systems do not simply take students through problem-solving. They also identify the emotions of the students and make changes on the spot. It is a personalized and motivational learning method (Chen et al., 2020). Such systems do not stop at enhancing cognitive abilities. They facilitate the creation of a friendly atmosphere on campus by supporting the social and emotional needs of students (Su, 2023). Scholars acknowledge that AI has a huge potential to create increased inclusivity in education, yet there is still scarce concrete evidence on the influence of such systems on diverse students. This paper discusses the application of AI tools to support inclusive education at higher levels of education, especially in mitigating the barriers to diverse students. In the attempt to ensure that more students are accommodated by universities globally, it not only is good but vital to learn how AI can be used to increase inclusivity.

Problem Statement

The utilization of AI-based educational tools in more universities is on the rise, yet issues of accessibility, equity, and student engagement remain. Although it has regularly been mentioned that AI is making education more inclusive, there is still no tangible evidence that it is effective to students particularly in Pakistani universities. The majority of the research is inclined towards highlighting the strengths of the technology, as opposed to the experience of the students and their inclusiveness. We should take a closer look at the way these AI tools actually affect inclusivity in higher education, especially in relation to the elimination of obstacles and the promotion of student engagement and participation.

Objectives

- To examine the opinions of the students regarding the effect of AI-based educational instruments on the increased accessibility of higher education.
- To analyze AI technologies in order to deconstruct obstacles and to assist in developing a more accessible learning space.
- To explore how AI tools can be used to design student interaction in order to make learning more inclusive.

Research Question

- How do college students understand the effects of AI-based educational devices on the affordability of their education?
- How do AI technologies help eliminate conventional educational barriers to create a more inclusive and equitable learning process?
- What is the effect of the use of AI tools on student engagement and how do they enhance the depth of inclusive learning experiences in higher education?

Significance of the Study

The relevance of this study is that it looks into the actual way AI-powered educational devices can facilitate increased inclusiveness in higher education as experienced by the students. The study emphasizes that AI can play the role in eliminating barriers and improving inclusive learning by emphasizing the aspects of accessibility, equity, and engagement. The findings will add to the debate on AI and inclusive education. Besides, they provide colleges and universities with pragmatic methods of implementing AI tools to create more equitable and student-cantered classrooms.

Literature Review

Physical barriers to inclusive higher education are mainly divided into several categories, including attitudinal, institutional, physical, and social. It is stated that physical barriers are widespread, e.g. lack of ramps in buildings, insufficient access to elevators, or non-availability of assistive equipment (Altes et al., 2024). This means that attending classes is a challenge to students who need such accommodations on a daily basis. The research also states that the barriers to attitudinal level are based on the negative attitude, the lack of disability awareness, and the lack of training of the faculty, which hinder the inclusive engagement in the conditions of higher education (Altes et al., 2024). On the same note, Institutional barriers assume the form of rigid policies, lack of support and too much bureaucracy. These barriers and limitations continue to isolate people, particularly institutions that are not flexible. To add to this is the social obstacles such as stigma, discrimination and students not feeling welcome which drives many to the fringes. Molchanova & Kovtoniuk, (2025). Students with disabilities, marginalized groups and international students are the most affected by all these challenges. It results in them attending less, leaving school at a greater rate, and experiencing greater academic challenges (Nieminen et al., 2023). Furthermore, lacking specialized assistance, holding course materials unavailable, and being not very diverse, the case of exclusion becomes even greater as universities cannot provide (Moriña & Perera, 2020).

Although there are inclusive policies on paper, things tend to go wrong on the ground. Oswal et al. (2025) claim that it is because of limited resources, poorly trained teachers, as well as a lack of organizational commitment. Good policies cannot be fulfilled since many universities cannot or do not want to alter their structures and cultures to embrace the principles of inclusive education. Moreover, to students that are members of more than one marginalized group, these barriers compound within a short span of time. As Carrillo-Sierra et al. (2025) demonstrate, students with disabilities are particularly those with a minority or low-income background that encounter even greater rates of exclusion. The location of residence, cultural context and financial standing of a person all determine the patterns in which these barriers manifest themselves meaning that a one-fit-all-solutions is not going to work.

Another major obstacle to inclusive higher education is the socio-economic barriers. According to Sahoo (2025), it explains that when your family cannot afford the tuition fees and fees, when you have to work long hours, or when you cannot get loans or scholarships, you will not be able to enroll, you are more likely to drop out, and you will have a hard time keeping up with the academic workload. The students with low-income backgrounds usually have fewer resources and less preparation which makes getting a degree even more difficult.

Inclusion is also influenced by language barriers especially in students studying in second or foreign language. According to Giang (2025), it is stated that these students usually have some problems with the complete focus on lectures or textbooks, which increases their anxiety level, diminishes confidence, and reduces the likelihood of seeking assistance. This results in poor grades, increased stress and increased isolation. In other areas such as medicine, it may even be challenging to speak with the patients using a local language, having learned a foreign language (Giang, 2025). Physical barriers are still very common in campuses of higher learning. Ashraf and Rahat (2023) note that campuses that do not have basic ramps, elevators, accessible restrooms and classrooms, and good transportation. Most campuses are still not fully accessible even when some of the weaknesses have been corrected, leaving students with mobility disabilities isolated by their academics as well as their campuses. There are also academic barriers that have a strong impact on inclusive learning experiences. According to Carrillo-Sierra et al. (2025), the inflexible schedules, the lack of changes in course materials, the non-inclusive instructional approaches, and the low level of academic support exist. There are also teachers who might be good in their subjects yet have poor teaching skills and the overly working schedules or poor evaluation systems drive away more students or make them fail.

There are policy guidelines of disability and inclusion within the Pakistani context such as HEC policy frameworks, disability acts, which are however weakly implemented. Bokhari et al. (2025) also indicate that the majority of universities do not have a disability support office, assistive technology, sign language interpreters, note-takers, mental health services, and gender-neutral facilities, particularly doctoral or mainstream programs. These loopholes prevent the fact that disabled and transgender students can be effectively incorporated. On the same note, Haq and Rafiq (2025) indicate that Most university campuses continue to have inaccessible buildings, libraries, laboratories as well as sports facilities. The problems extend further than physical barriers: low budgets, lack of investment in higher education, no clue who manages inclusion, poor implementation of

policies of the Higher Education Commission, and too much political interference poses barriers to equitable access and actual support. Faculty preparedness is also a significant aspect. Hussain et al. (2020) note that a lot of lecturers are not adequately trained and do not know anything about disability laws and reasonable accommodations or about inclusive teaching strategies, including Universal Design of Learning. They are likely to keep to lectures, out-of-date curricula, and rigidly based assessments. This gives little chance of students having different needs to showcase their capabilities and in practical subjects such as physical education, practically no adjustments are done.

In the recent past, scholars have been looking into the way artificial intelligence can be used to eliminate some of these obstacles. In computing, such as AI tutoring systems, students are advised on a problem one is working on, and they may even react to their emotions, which helps learners interact and feel supported in their studies (Chen et al., 2020). Such tools assist in improving cognitive skills, as well as in creating the environment in which the social and emotional needs of students are appreciated (Su, 2023). Furthermore, another important technology is the personalized e-learning on AI. These platforms rely on the data on student profiles, performance, and learning preferences to adjust the difficulty and pace of content. It implies that students with different learning styles and backgrounds will be able to receive what best suits them (Murtaza et al., 2022). An adaptive system that used AI to recommend customized learning paths to 300 students was conducted at a university in Faisalabad. The outcome? An average increase in grades of around 25 percent, improved test scores, and more engagement than in traditional teaching, and students indicated higher levels of satisfaction (Naseer et al., 2024). In the same way, deep-learning-based intelligent tutoring systems with natural language processing can offer stepwise guidance and task sequencing dynamism, resulting in much higher achievements in STEM subjects than the control groups (Villegas-Ch. et al., 2025). In addition, adaptive feedback systems based on AI and applied to 700 undergraduates including students in Pakistan in the system Beaconhouse delivered a 28% increase in conceptual mastery over 14% in traditional feedback contexts, as well as increasing engagement and decreasing cognitive overload (Naseer and Khawaja, 2025).

These findings are also supported by studies that concentrate on the student views in Pakistan. Nizami et al. (2025) have found that AI tools are highly preferred by university students, particularly in personalized learning, flexible learning pace, and immediate feedback. These features to them are important in being able to meet the needs of different learning styles, and also remain motivated. They are however also concerned about fairness, privacy and the technology infrastructure. Punjab and Khyber Pakhtunkhwa teachers concur that AI increases student performance and inclusivity in the classroom, but access and teacher training is necessary (Aslam et al., 2024). It is also indicated that AI-based adaptive learning increases learning and satisfaction and efficiency, especially among those students who do not conform to the conventional education pattern. Naseer and Khawaja (2025) go ahead to demonstrate that AI adaptive feedback interventions can decrease conceptual learning gap by half in mixed-ability classrooms, which is a real stride in the direction of equity in education.

Recent research of generative AI tools suggests that there is a lot of potential in students with a visual or hearing impairment and those with a second-language learners or handling multiple languages. As noticed by Jaime-Vargas (2025), these tools, when followed by the principles of Universal Design of Learning, do not

only enhance language accessibility, but also make a significant difference in the content, whatever they are. Nevertheless, empirical studies investigating the effect of the generative AI on the accessibility of higher education opportunities are few only five empirical studies are identified that involve students with motor disabilities. These loopholes can hardly be ignored. And in the same vein, despite the growing body of literature, there is limited extensive research that analyzes outcomes like the elimination of achievement gaps between genders, socio-economic status, and disability. According to Crompton and Burke (2023), several important gaps can be identified, namely, there is no evidence of students with motor disabilities or complex support needs, little awareness of the long-term or large-scale effects on equity, and very little information on what is going on in the Global South or in under-resourced schools. Reviews continue to call for more: they seek frameworks that integrate AI with inclusive teaching, ethical oversight, and genuine input from marginalized students themselves.

To conclude, the study community acknowledges how AI can be used to make higher education more inclusive. Nevertheless, the lack of information about the actual influence of these tools on various student groups remains. This paper will fill that gap by exploring the potential of AI-driven educational tools in eradicating barriers to learning in students regardless of their background and bring higher education closer to the equity ideal.

Research Methodology

In this article, the authors use a quantitative descriptive survey and investigate the experiences of AI-driven tools among students in the context of inclusivity in higher education. The research aims at capturing the student experiences especially in the areas of accessibility, equity, and engagement in AI-integrated classrooms.

Sample and Sampling Technique

The sample of the research was comprised of 100 undergraduate, graduate, and post-graduate students in 4 universities in Lahore that were selected. Each of the participants was practically engaged with AI tools, including learning management system, adaptive learning platforms or AI-based feedback system.

100 students of universities were surveyed by researcher. Convenient random sampling, which guarantees representation of various academic backgrounds including even the person with disabilities, is a sure way to do this. This method permitted gathering a variety of views and experiences with AI in higher education.

Research Instrument

A designed questionnaire that will be specific to the research goals created by a researcher. To measure the responses of the students accurately about the role of AI in enhancing inclusivity, the responses were measured using a five-point Likert scale, whereby Strongly Disagree (1) and Strongly Agree (5) are the extremes.

Validity and Reliability

The researcher would consult experts in the field of education and educational technology to help them in reviewing the questionnaire to make sure that it was used to measure what was intended. Their comments guided to the improvement of the questions and a constant focus on inclusive education. The Reliability Tested with the help of Cronbach alpha in SPSS, which validated the consistency of the questionnaire to measure the perspectives of the students.

Reliability Statistics

Cronbach's Alpha	N of Items
.966	25

Data Analysis

Data was gathered through an online survey using google Form. Ethical guidelines were followed throughout to protect participants' rights and privacy. Once responses were collected, researcher analyzed the data using SPSS. Descriptive statistics frequencies, percentages, means, and standard deviations were used to summarize student feedback. This enabled me to identify trends and patterns in how AI-driven tools influence accessibility, equity, and engagement in higher education.

Table 1: Demographic Information

Variable	Category	Frequency (n)	Percentage (%)
Gender	**Female**	**74**	**74.0%**
	Male	**26**	**26.0%**
Level of Education	**Undergraduate**	**52**	**52.0%**
	Graduate	**30**	**30.0%**
	Postgraduate	**18**	**18.0%**
Use of AI (Experience)	**Moderate**	**73**	**73.0%**
	High	**22**	**22.0%**
	Low	**5**	**5.0%**
Disability Status	**No**	**85**	**85.0%**
	Yes	**15**	**15.0%**

According to table 1, most of the respondents were female at 74% of which males constituted 26%. In the area of education, slightly more than half considered themselves to be undergraduates (52%), with 30% being graduate students and 18% being postgraduates. When asked about their experience using AI-based educational tools, the majority of participants (73% of the total) said that they rated their experience as moderate, 22% said they had a high level of experience, and only 5% said they had a low level of experience. In regards to disability state, 85% of the surveyed reported the absence of disability and 15% reported disability.

Table 2: Factor 1 - Accessibility of Learning through A

Statement	**1 (%)**	**2 (%)**	**3 (%)**	**4 (%)**	**5 (%)**	**Mean (x^-)**	**SD (σ)**
Improves access for diverse needs	3.0	4.0	22.0	32.0	39.0	4.00	1.02
More Resources accessible	2.0	10.0	14.0	37.0	37.0	3.97	1.05
Support for physical attendance	2.0	3.0	26.0	31.0	38.0	4.00	0.97
Overcome language barriers	2.0	7.0	25.0	28.0	38.0	3.93	1.05
Facilitate access for PWD's	3.0	9.0	26.0	29.0	33.0	3.80	1.09
Feedback systems help	6.0	7.0	20.0	31.0	36.0	3.84	1.17
Individual Learn at own pace	1.0	7.0	20.0	39.0	33.0	3.96	0.95
Support complex concepts	5.0	7.0	22.0	35.0	31.0	3.80	1.11
						3.91	**0.83**

NOTE: *Likert scale is interpreted as:* ***1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree***

Table 2 (Factor 1) shows that 39 percent of the respondents strongly agreed and 32 percent agreed that AI-driven tools enhance access to learning materials to students with diverse academic needs. Approximately 22 percent of people were neutral, 4 percent were disagree and 3 percent were strongly disagree. The means of this statement is 4.00 and the standard deviation is 1.02. On the use of adaptive explanations to support complicated concepts, there was strong agreement (31%), and agreement (35%). The percentage of neutral responses was 22, and 7 and 5 were that of disagree and strongly disagree respectively. The average of this item is 3.80 and SD is 1.11. The overall analysis of the aggregated factor of accessibility has a mean value of 3.91 with a standard deviation of 0.83.

Table 3: Factor 2 - Equity and Barrier Reduction through AI

Statement	1 **(%)**	**2 (%)**	**3 (%)**	**4 (%)**	**5 (%)**	**Mean (x^-)**	**SD (σ)**
Reduce academic disparities	4.0	9.0	26.0	33.0	28.0	3.72	1.09
Support underrepresented	3.0	7.0	26.0	38.0	26.0	3.77	1.01
fairness via personalized support	3.0	8.0	16.0	37.0	36.0	3.95	1.06
Mitigate socio-economic barriers	6.0	5.0	26.0	37.0	26.0	3.72	1.09
Identify requiring additional help	2.0	7.0	27.0	31.0	33.0	3.86	1.03
equal support for different	3.0	6.0	23.0	37.0	31.0	3.87	1.02
Promote equal academic support	2.0	6.0	28.0	35.0	29.0	3.83	0.99

Platforms enable equal opportunities	0.0	6.0	32.0	40.0	22.0	3.78	0.86
						3.81	**0.83**

NOTE: *Likert scale is interpreted as:* ***1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.***

Table 3 indicates that 36% of participants strongly agreed and 37% agreed that AI-based learning systems promote fairness by providing personalized support. Another 16% were neutral, while 8% disagreed and 3% strongly disagreed. The mean score for this question is 3.95, with a standard deviation of 1.06. When asked whether AI tools help reduce socio-economic barriers, 26% strongly agreed and 37% agreed. About 26% were neutral, 5% disagreed, and 6% strongly disagreed. The mean in this case is 3.72, with a standard deviation of 1.09. For Factor 2 as a whole, the mean is 3.81 and the standard deviation is 0.83.

Table 4: *Factor 3 - Student Engagement and Inclusive Learning Experience*

NOTE: *Likert scale is interpreted as:* ***1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.***

Table 4 indicates that 40% of respondents strongly agreed and 25% agreed that AI-

Statement	**1 (%)**	**2 (%)**	**3 (%)**	**4 (%)**	**5 (%)**	**Mean (x^-)**	**SD (σ)**
Increase learning engagement	3.0	5.0	27.0	35.0	30.0	3.84	1.01
Encourage active participation	4.0	9.0	18.0	38.0	31.0	3.83	1.09
Students feel valued	1.0	9.0	31.0	23.0	36.0	3.84	1.05
Promote interaction	4.0	9.0	23.0	28.0	36.0	3.83	1.14
Enhance sense of belonging	2.0	5.0	28.0	25.0	40.0	3.96	1.03
Improved engagement	4.0	6.0	21.0	36.0	33.0	3.88	1.07
Potential to improve equity	2.0	7.0	20.0	36.0	35.0	3.95	1.01
Supports fair access	4.0	4.0	27.0	27.0	38.0	3.91	1.08
Positively impact inclusivity	4.0	9.0	19.0	31.0	37.0	3.88	1.13
						3.88	**0.84**

driven tools enhance their sense of belonging in the academic environment. Approximately 28% were neutral, 5% disagreed, and 2% strongly disagreed. The mean for this item was 3.96, with a standard deviation of 1.03. When participants were asked about the overall positive impact of AI-driven tools on inclusivity, 37% strongly agreed and 31% agreed. Nineteen percent remained neutral, while 9% disagreed and 4% strongly disagreed. The mean for this question was 3.88, with a standard deviation of 1.13. For Factor 3 as a whole, the mean was 3.88 and the standard deviation was 0.84.

Conclusion and Discussion

The research presents the distinct trends of perceiving AI-based educational products as affecting inclusive higher education among students. All in all, students are positive about the impact of AI on learning particularly its role in ensuring increased accessibility and equity. The majority of the individuals are in support of the notion that AI tools provide opportunities to students with various needs. This is indicated by high averages in questions concerning accessibility. AI platforms are more flexible to the students, they help students who are not always able to attend classes and the complex topics are made easier to allow the learners to learn at their own pace. This can be tied to the fact that in past studies AI-based tutoring and adaptive learning technologies helped a wide group of students and helped create a more inclusive learning environment (Chen et al., 2020; Su, 2023). Equity is also an important catalyst identified by students as a result of AI. They feel that such tools assist in bridging the academic gap, support underrepresented populations, and bring equity in the form of customized academic support. These statistics prove that such students believe that AI can track those who require additional assistance and assist in overcoming the financial or social barrier. It is compatible with the research indicating that individual AI learning systems may enhance classroom outcomes in the situation when the abilities and backgrounds of students differ (Murtaza et al., 2022; Naseer and Khawaja, 2025). Nonetheless, not every student was completely convinced, some opted to remain neutral, which indicates that there are continuous questions of whether all people can equally access AI or are ready to utilize it, specifically in the less resourceful areas.

The findings on the aspect of engagement show that AI-based tools assist students in becoming more engaged and increase their sense of belonging. The rating by students of the statements on feeling valued, benefiting by interactions and being more engaged was rated quite high. This implies that learning environments based on AI would be capable of promoting a feeling of community. Similar findings were made by other researchers: adaptive feedback and intelligent tutoring systems are more likely to engage students that have difficulty with conventional, standardized instruction methods (Villegas-Ch. et al., 2025; Naseer and Khawaja, 2025). Equity and inclusion are other aspects where AI can be perceived to foster more, and this issue also highlights its significance in dealing with the current crisis in higher education.

However, the demographic data indicate certain significant warnings. Although the majority of the students have a reasonable level of experience with AI tools, a large percentage have been exposed to very little of them, indicating access gaps that remain. Moreover, although the sample is selected in such a way that it has few students with disabilities, the presence of those students is also a reminder that AI tools should be user-friendly and ethically oriented at the very beginning. According to other studies, in the absence of proper support, training, and monitoring, AI may be used to perpetuate the same inequalities it is meant to solve (Crompton and Burke, 2023).

The research demonstrates that AI-based learning solutions really assist in making higher education more accessible. They enhance access, offer a more equal opportunity, and engagement of students. Students consider AI to be an effective tool in learning and meeting various learning requirements especially in the aspect of personalizing and adapting to people. Such benefits, however, are subject to equal access, well-developed

infrastructure, and institutions being ready to back the technology. To be an effective and sustainable inclusion, schools have to consider including AI in their instruction strategies.

Recommendations

- Use personalized learning platforms that are powered by AI in order to support the various learning needs. Give students the opportunity to learn at their pace, provide feedback according to their needs, and practice adaptive learning content according to their learning styles.
- Make sure that these AI tools are not restricted. I also would develop digital infrastructure and offer meaningful assistance to institutions so that students and educators are not disadvantaged by technology disparities.
- Ensure that there is constant faculty development. Focus on inclusive learning via AI support, smart forms of assessment and responsible education technology usage.
- Embark on AI-based assessment and feedback into the classroom. Such strategy raises the student engagement, lessens academic inequality, and promotes a more encompassing assessment.
- Set up strong ethical principles of AI application in education. Consider privacy of data, transparency and fairness as the core of every tool you deploy.
- Avoid a single event approach An action often taken to assess the effect of AI on access, equity and student involvement. Use these lessons to promote the inclusiveness in higher education.

References

Adipat, S., & Chotikapanich, R. (2022). Sustainable Development Goal 4: An Education Goal to Achieve Equitable Quality Education. *Academic Journal of Interdisciplinary Studies*. https://doi.org/10.36941/ajis-2022-0159.

Marcos, M., Toledo, M., & Escobar, C. (2022). Towards Inclusive Higher Education: A Multivariate Analysis of Social and Gender Inequalities. *Societies*. https://doi.org/10.3390/soc12060184.

Shaeffer, S. (2019). Inclusive education: a prerequisite for equity and social justice. *Asia Pacific Education Review*, 20, 181 - 192. https://doi.org/10.1007/s12564-019-09598-w.

Reinders, S., Dekker, M., & Falisse, J. (2021). Inequalities in higher education in low- and middle-income countries: A scoping review of the literature. *Development Policy Review*. https://doi.org/10.1111/dpr.12535.

Ndibalema, P. (2022). Constraints of transition to online distance learning in Higher Education Institutions during COVID-19 in developing countries: A systematic review. *E-Learning and Digital Media*, 19, 595 - 618. https://doi.org/10.1177/20427530221107510.

Costan, E., Gonzales, G., Gonzales, R., Enriquez, L., Costan, F., Suladay, D., Atibing, N., Aro, J., Evangelista, S., Maturan, F., Selerio, E., & Ocampo, L. (2021). Education 4.0 in Developing Economies: A Systematic

Literature Review of Implementation Barriers and Future Research Agenda. *Sustainability*. https://doi.org/10.3390/su132212763.

Altes, T., Willemse, M., Goei, S., & Ehren, M. (2024). HIGHER EDUCATION TEACHERS' UNDERSTANDINGS OF AND CHALLENGES FOR INCLUSION AND INCLUSIVE LEARNING ENVIRONMENTS: A SYSTEMATIC LITERATURE REVIEW. *Educational Research Review*.

Oswal, N., Al-Kilani, M., Faisal, R., & Fteiha, M. (2025). A Systematic Review of Inclusive Education Strategies for Students of Determination in Higher Education Institutions: Current Challenges and Future Directions. *Education Sciences*. https://doi.org/10.3390/educsci15050518.

Nieminen, J., Moriña, A., & Biagiotti, G. (2023). Assessment as a matter of inclusion: A meta-ethnographic review of the assessment experiences of students with disabilities in higher education. *Educational Research Review*.

Molchanova, E., & Kovtoniuk, K. (2025). ADVANCING INCLUSIVE EDUCATION IN UKRAINIAN HIGHER EDUCATION: IMPLEMENTATION CHALLENGES AND FUTURE PROSPECTS. *PEDAGOGY AND EDUCATION MANAGEMENT REVIEW*. https://doi.org/10.36690/2733-2039-2025-1-35-41.

Carrillo-Sierra, S., Pinzón-Ochoa, M., Rangel-Pico, A., Paris-Pineda, O., Vásquez, M., Anaya, W., & Rivera-Porras, D. (2025). Perceptions of Barriers to Inclusion in Students with Disabilities in Higher Education Institutions. *Societies*. https://doi.org/10.3390/soc15020037.

Ashraf, M., & Rahat, R. (2023). Hurdling Barriers: Exploring Inaccessibility in Higher Education Institutions for Mobility Assistive Device Users. *Contemporary Issues in Social Sciences and Management Practices*. https://doi.org/10.61503/cissmp/02-03-2023-11.

Giang, N. (2025). Challenges and Strategies for English as a Second Language (ESL) Students in Higher Education. *Education, Language and Sociology Research*. https://doi.org/10.22158/elsr.v6n1p136.

Sahoo, S. (2025). Economic Barriers to Higher Education in India: Challenges Faced by Economically Disadvantaged Groups. *INTERANTIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT*.

Bokhari, T., Fida, F., Anis, F., & Muhammad, Y. (2025). Navigating Barriers: A Critical Analysis of Doctoral Education Accessibility for Students with Disabilities in Pakistani Universities. *Research Journal for Social Affairs*. https://doi.org/10.71317/rjsa.003.01.0086.

Haq, M., & Rafiq, N. (2025). Analysis of the Institutional Barriers to Inclusive Education for Diverse Student Needs in Pakistan. *The Critical Review of Social Sciences Studies*. https://doi.org/10.59075/mrppnk90.

Hussain, S., Shahzadi, U., & Khan, I. (2020). Challenges to Learners with Disabilities in the Higher Education Institutions in Pakistan: A Review. , 1, 12-19. https://doi.org/10.36902/rjsser-vol1-iss3-2020(12-19).

Zhadlenko, I., Morenko, O., Nikolenko, L., Lastochkina, O., & Mykytenko, M. (2025). Digital Transformation of Education as a Space For Supporting Learners with Special Needs Challenges And Prospects For Inclusion. *Seminars in Medical Writing and Education*. https://doi.org/10.56294/mw2025704.

Wulandari, C., Firdaus, F., & Saifulloh, F. (2024). Promoting Inclusivity Through Technology: A Literature Review in Educational Settings. *Journal of Learning and Technology*. https://doi.org/10.33830/jlt.v3i1.9731.

Murtaza, M., Ahmed, Y., Shamsi, J., Sherwani, F., & Usman, M. (2022). AI-Based Personalized E-Learning Systems: Issues, Challenges, and Solutions. *IEEE Access*, 10, 81323-81342. https://doi.org/10.1109/access.2022.3193938.

Naseer, F., Khan, M., Tahir, M., Addas, A., & Aejaz, S. (2024). Integrating deep learning techniques for personalized learning pathways in higher education. *Heliyon*, 10. https://doi.org/10.1016/j.heliyon.2024.e32628.

Villegas-Ch., W., Buenaño-Fernández, D., Navarro, A., & Mera-Navarrete, A. (2025). Adaptive intelligent tutoring systems for STEM education: analysis of the learning impact and effectiveness of personalized feedback. *Smart Learning Environments*, 12. https://doi.org/10.1186/s40561-025-00389-y.

Naseer, F., & Khawaja, S. (2025). Mitigating Conceptual Learning Gaps in Mixed-Ability Classrooms: A Learning Analytics-Based Evaluation of AI-Driven Adaptive Feedback for Struggling Learners. *Applied Sciences*. https://doi.org/10.3390/app15084473.

Nizami, A., Mirza, M., Yousaf, M., & Usman, M. (2025). The Role of Artificial Intelligence in Shaping Personalized Education and Student-Centered Learning in Pakistan. *The Critical Review of Social Sciences Studies*. https://doi.org/10.59075/92m4jb48.

Aslam, S., S., Faisal, O., & Kamal, H. (2024). Analyzing AI's Role in Promoting Diversity and Inclusivity within Educational Systems, Addressing different Learning Styles and Needs. *Review of Applied Management and Social Sciences*. https://doi.org/10.47067/ramss.v7i4.446.

Jaime-Vargas, J. (2025). Generative AI for Enhancing Accessibility and Inclusion in Higher Education: A Systematic Review. *HighTech and Innovation Journal*. https://doi.org/10.28991/hij-2025-06-02-022.

Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: the state of the field. *International Journal of Educational Technology in Higher Education*, 20, 1-22. https://doi.org/10.1186/s41239-023-00392-8.

Chen, L., & Yang, P. (2023). Artificial Intelligence in Education: A Review. IEEE Access.

Dahal, C. (2024). Revolutionizing Education through AI-Powered Inclusive Learning Systems. Westminster University.

Luckin, R., & Cukurova, M. (2021). Designing educational technologies in the age of AI: A learning sciences-driven approach. University College London.

Su, J., Chen, L., & Lin, Z. (2023). Unlocking the Power of AI for Inclusive Education: A Learning Sciences-Driven Approach. ECNU Review of Education.

Chen, L., Chen, P., & Lin, Z. (2020). *Artificial intelligence in education: A review*. IEEE Access, 8, 75264–75278.