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Research Article

Perceived Benefits And Concerns Of AI Integration In Higher Education: Insights From India

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ABSTRACT

The technological innovations have brought fundamental transformations into the lives of human beings. Technology has laid footprints in each and every facet of social existence. Using a mixed method approach, the study primarily aims at providing the holistic understanding of benefits and concerns with regard to use of Artificial Intelligence tools in higher education in India. The key inferences drawn from the study have outlined that AI has led a systematic integration within the higher educational institutions. The students are well versed with the use of those tools for educational perspective. However, the key takeaways has outlined that there is variation in terms of students using the AI tools. Students at Post-Graduate level are prone to use the AI tools compared to students from Under-Graduate level. In addition, the students are less likely to use the AI gadgets as compared to final year students. Despite having positive strides under the domain of AI in education, there is accessibility gap followed by cost-effective and lack of awareness of the AI tools. The larger question that occupies the central position in the research is the ethical dilemmas with regard to rational and academic use of these tools for educational purpose.

Key Words: Artificial Intelligence, Development, Ethics, Technology, Transformation

1. Conceptualizing Artificial Intelligence

Artificial intelligence (AI) was initially defined as "the science and engineering of making intelligent machines" in 1956 (Mccarthy, 2007). Throughout the 20th century, AI evolved into intelligent robots and algorithms capable of reasoning and adapting to rules and environments, mimicking human intelligence (Mccarthy, 2007). Artificial Intelligence (AI) is an astronomical subject of computer science concerned with constructing super computers capable of doing tasks that would typically need human perspicacity. While AI is a diverse science with many techniques, breakthroughs in machine learning and deep learning, in particular, are driving a paradigm shift in virtually every sector of the technology industry. Artificial perspicacity enables machines to duplicate, or peradventure amend, the capabilities of human minds. AI is gradually becoming more prevalent in everyday life, as evidenced by the development of self-driving cars and the advent of generative AI implements such as ChatGPT and Google's Bard. AI has evolved progressively into intelligent machines and algorithms that can reason and adapt based on sets of rules and environment which mimic human intelligence (Tsz et al., 2021), There are several programming languages that are known as AI languages because they are used almost exclusively for AI applications (Gupta, 2023), Precision education can be implemented by applying AI and learning analytics to identify at-risk students and by providing timely intervention to improve teaching quality and the learning outcomes of students (Yang, 2021). Artificial intelligence (AI) is super important nowadays because it's changing a lot of things in our lives. It helps make things more efficient and helps us make better decisions in areas like tech, healthcare, money, and education. AI lets machines learn from information, adjust to new stuff, and do hard jobs. This has led to cool stuff like better customer service with Chabot's, personalized medicine, and cars that drive themselves. AI has the power to tackle big problems around the world, save resources, and change how countries work. As AI gets better, it's changing how we work, talk to each other, and solve problems in a world that's more connected and driven by data (Rahman et

al., 2024). Nowadays, we can gather a ton of data that's too much for one person to handle. Artificial intelligence (AI) is super helpful in areas like tech, banking, ads, and entertainment. AI can learn a lot from all this data, even if the ways it learns don't get better. Even though Moore's Law might be slowing down, the amount of data we collect keeps growing fast. To keep moving forward despite Moore's Law slowing down, we might need to make big strides in computer science, math, or neuroscience (K. Nand, Koneti Hema Sadhu Sai, Valerii Hordiichuk, Reshmi Menon, Catherene Julie Aarthy C, 2023).

2. Research Methods and Techniques

The nature of the research is descriptive, explorative and analytical one. The study makes use of mixed method i.e. qualitative and quantitative in exploring the knowledge and utility of the Artificial Intelligence among higher education students, with a particular focus on Education. The collected primary data has been carefully analyzed by the researcher to identify the utility of Artificial intelligence among the university students in India and the challenges thereby. The study utilizes both Primary and Secondary sources to draw the precise inferences in relation to the research area. Secondary data has been collected from government websites and journal articles, providing additional qualitative insights into the subject matter. The primary data has been collected from three universities in northern India. The total sample size is 100 and data has been collected using Simple Random Sampling Technique allowing for a diverse representation of students/research scholars perspectives. The questionnaire serves as a primary methodology which seeks to collect data on the mindfulness, utilization, satisfaction, and challenges related to Perceived Benefits and Concerns of AI Integration in Higher Education: Insights from South Asian Countries. The collected data has been anatomized through MS Excel and Google Forms in careful mode.

3. History Context of Artificial Intelligence

The idea of artificial intelligence (AI) started in 1956 when people first used the term at the Dartmouth Conference. At first, they focused on something called Symbolic AI, which tries to copy how humans think using rules and logic. But in the 1960s and 1970s, AI research hit some problems, and interest and money for it went down, which people call an "AI winter." In the 1980s, expert systems became popular, but they had limits that slowed down progress. Then in the 1990s, AI got a boost with better technology like machine learning and neural networks. Remember when IBM's Deep Blue beat a world chess champion? That was a big deal. In the 2000s, things really picked up because we had huge amounts of data and better computers. Machine learning, especially deep learning, made cool things possible, like recognizing images, understanding language, and even making cars that drive themselves. AI is everywhere now, in things like recommending what to watch, driving cars without drivers, and helping us with tasks using virtual assistants. As AI keeps getting better, people worry more about things like making sure it's used ethically and responsibly and thinking about how it affects society. AI is now a big part of our lives, changing how we use technology and how we live every day (Gold, 2023). Back in the early 1950s, John Von Neumann and Alan Turing did some important work that laid the foundation for artificial intelligence (AI). They changed how computers worked, moving from old-school logic based on numbers 0 to 9 to a new kind called binary logic, which uses only 0s and 1s and is based on something called Boolean algebra. The term "AI" is often linked to John McCarthy from MIT. He described it as making computer programs that can do tasks humans are good at, like learning from experience, remembering things, and thinking deeply about stuff. People think AI really got going with a meeting in the summer of 1956 at Dartmouth College. It was a workshop, not a big conference, and only a few people, like McCarthy and Marvin Minsky, were there regularly. But even though it was small, this workshop led to big improvements, mostly because of new ideas in formal logic (History of Artificial Intelligence - Artificial Intelligence - www.coe.int, n.d.). In the 1980s, artificial intelligence (AI) got a boost for two reasons: better ways of doing things and more money going into it. John Hopfield and David Rumelhart made "deep learning" techniques popular, which let computers learn from experience. At the same time, Edward Feigen Baum developed expert systems that acted like human experts in making decisions. These systems learned from real experts and then helped others who weren't experts by giving advice based on what they learned. Expert systems were used in many fields. In Japan, the government invested heavily in expert systems and other AI projects as part of their Fifth Generation Computer Project (FGCP) (Hsia, n.d.). In 1997, a computer program called IBM's Deep Blue made a big breakthrough by defeating the world chess champion, Gary Kasparov. It was the first time a computer beat a human champion, showing that computers could make smart decisions. That same year, Dragon Systems came out with voice recognition software for Windows, another big step forward but for understanding spoken words. It seemed like there was nothing machines couldn't handle. They even started getting good at understanding human emotions, like Kismet, a robot made by Cynthia Brea zeal, which could recognize and show feelings (Anhoya.R.). From one perspective we have made great progress – AI is a fairly well defined field which has grown over the last 50 years and has helped solve many problems, be it adaptive spam blocking, image/voice recognition, high performance searching etc. On the other hand, the things the originators of AI like Turing and McCarthy set out to do seem just as far away now as they were back then (Smith, 2006).

4. Theoretical Development

Artificial intelligence brings to mind a super- computer, a computer with immense processing capabilities, including adaptive behavior, such as inclusion of sensors, and other capabilities, that enable it to have human-like cognition and functional abilities, and indeed, which improve the supercomputers interaction with human beings. Indeed, different motion pictures have been made to showcase the abilities of AI, such as in smart buildings, such as the ability to manage air quality in a building, temperatures, and or playing music depending on the sensed mood of the occupants of the space. Within the education sector, there has been increased application of artificial intelligence, going over and above the conventional understanding of AI as a supercomputer to include embedded computer systems (Chen & Chen, 2020). AI has taken education to an extreme level; without AI, students can feel burdened. After COVID-19, it has transmuted the perception of education, although inculcation became quite facile with AI. Several limitations were observed due to the fact that AI literacy is an emerging topic with few papers published in it. The keyword search confined the extent of domain specificity inside the AI context, although other AI subfields such as neural network training, machine learning, and so on may be relevant to this study but were not included in the current review. Second, some studies in our study discussed interventions and learning programmes related to AI literacy. However, the papers did not provide a specific definition of AI literacy. Third, our evaluation excluded a broader pool of research on AI learning and teaching that did not use the phrase "AI literacy"; yet, their interventions may be equivalent to AI literacy instructional design. This implies that future reviews should widen the area of search to include additional material on AI learning and teaching (Tsz et al., 2021).

Stronger machine learning (ML) algorithms, increased data access, lower-cost technology, and the arrival of 5G have all contributed to the growing use of AI in the healthcare business, hastening the speed of development. AI and ML systems can filter through massive amounts of health data—from medical records and clinical research to genetic information—and analyze it far quicker than humans. Artificial Intelligence can help in the Healthcare sector by the reducing the work load like Administrative workflow: Medical staff spends a significant amount of time doing paperwork along with other administrative chores. Virtual nursing assistants: According to one survey, 64% of patients felt satisfied with the use of artificial intelligence for round-the-clock access to answers provided by nurses. Dosage error reduction: Artificial intelligence might be used to discover mistakes in a patient's self-administered drugs. Less invasive surgeries: AI-powered robots might be utilized to work around delicate organs and tissues, reducing blood loss, infection risk, and post-operative discomfort. Fraud prevention: Fraud in the healthcare business costs $380 billion every year, raising customers' medical premiums and out-of-pocket costs. Artificial intelligence has the ability to improve the healthcare user experience. According to a recent survey, 83% of patients consider poor communication to be the worst aspect of their experience, highlighting the critical need for improved communication between patients and doctors. AI technology such as natural language processing (NLP), predictive analytics, and speech recognition might help healthcare practitioners communicate more effectively with patients. AI, for example, might give more particular information about a patient's treatment options, allowing the healthcare professional to engage in more meaningful conversations with the patient and make joint decisions (Education, 2021). "The machine learns the optimal combination of risk factors," Ribeiro said. "What matters most is the manner in which this algorithm & these variables work together. This type of study allows us to use algorithms that can analyze hundreds of data points in a patient's medical record and potentially reduce them to clinically useful information."

Integrating AIEd (Artificial Intelligence in Education) requires a thorough understanding of AI ethics. This means being aware of the ethical implications and potential biases of AI systems and ensuring they are used responsibly and fairly in educational settings. Furthermore, this integration calls for collaboration across different academic disciplines, such as computer science, education, psychology, and sociology, to address the various challenges and opportunities presented by AIEd. Such collaboration needs to be part of extensive, long-term research efforts to develop effective and sustainable AI-driven educational tools and practices (Zhang & Aslan, 2021). As the body of AIEd research continues to grow, it will provide teachers with practical guidelines and concrete examples of how to effectively use AI in their classrooms. This research will also introduce innovative methods of teaching and learning, leveraging AI to create more personalized, efficient, and engaging educational experiences for students. Despite the skepticism, doubts, and fears surrounding the use of AI in education, such as concerns about data privacy, job displacement, and the potential for deepening educational inequalities, AIEd persistently opens up new opportunities for innovation. These innovations include adaptive learning technologies that tailor educational content to individual student needs, intelligent tutoring systems that provide personalized feedback and support, and advanced data analytics that help educators better understand and improve student learning outcomes. Thus, AIEd has the potential to significantly transform and enhance the educational landscape (Zhang & Aslan, 2021).

Artificial intelligence (AI) has the capacity to address some of today's most pressing educational concerns, reinvent teaching and learning techniques, and accelerate progress towards SDG 4. However, fast technological advancements unavoidably carry with them a slew of hazards and concerns that have outrun policy discussions

and regulatory structures to date. UNESCO is dedicated to assisting Member States in realizing the promise of AI technologies for attaining the Education 2030 Agenda, while ensuring that their use in educational contexts is governed by the key values of inclusion and equity (Education, 2021). Additionally, as part of the Beijing Consensus, UNESCO created a book to help education policymakers become better prepared for artificial intelligence. This publication, Artificial Intelligence & Education: Guidance for Policymakers will be useful to practitioners and experts in the policy-making and education fields. It seeks to foster a shared awareness of the potential and difficulties that AI presents in education, as well as the consequences for the basic competences required in the AI age (United Nations Educational, 2021).

5. Artificial Intelligence and Educational Dynamics

AI technology enables the establishment of huge free online courses. With the installation of intelligent technologies, assessing a huge number of assignments, as well as detecting learning and teaching gaps, will no longer be an issue. Furthermore, assessing learning progress is getting more effective. At the same time, because these intelligent evaluation algorithms make decisions based on enormous statistics, they may overlook certain accurate but rare unique solutions. This means that without a human mentor, AI-based evaluation systems cannot be completely accurate in all situations (Chassignol et al., 2018). Intelligent tutoring systems generate a digital profile for each student and provide a customized instructor. This should enhance productivity both inside and outside of the classroom. Furthermore, digital portfolios of learnt subjects and themes may be quite useful for employers. Personalized learning environments enhance educational quality and enable students with disabilities to study more effectively. It will also aid in tailoring educational material to students' requirements, resulting in more individualized study regimens. AI tools are used in several aspects of education, including as content development, instructional methods, student evaluation, and teacher-student communication. This work advances knowledge in the subject of technology-enhanced learning and is relevant to professionals, instructors, students, and everyone interested in educational advancements (Chassignol et al., 2018).

Adaptive learning is the process of evaluating a student's current skill level, developing a guided learning experience that advances their proficiency, and teaching them both fundamental and additional skills. With the use of assistive technology, special needs kids can receive a more equal education. One way this might be achieved is by having AI "read passages to a visually impaired student." Early Childhood Education: "Interactive games that teach kids fundamental academic skills and more are currently powered by AI." Data and Learning Analytics: To help educators make more informed decisions, "teachers and education administrators are currently using AI to analyze and interpret data." Assisting educators in setting up classes and helping people organize their daily, weekly, monthly, or annual calendars (Lachhwani, 2022). AI is good at "watching over the drinking water, Wi-Fi, and power systems; notifying employees in charge of resources when issues emerge." Overall School Management: AI is presently being utilized to run whole schools, including the IT, scheduling, maintenance, and budgeting, transportation, and student record systems. Writing: Lynch acknowledges that artificial intelligence (AI) is already being used to assist students in developing their writing abilities (Maroju et al., 2023). One of the main ideas in the subject is AI under the garb of customization, which is pushed as a means of improving education by, among other things, addressing socioeconomic inequities and increasing learning effectiveness. We conceptualized the information found as a Bourdieu Sean field after limiting the graph's size to the opinions of 20 experts and material that we located online using a particular search technique (Davies et al., 2021).

AI is changing how research is done, bringing both new opportunities and challenges. AI is being used in many areas of research to handle big amounts of data quickly and save money. For example, in medical research, AI helps make predictions using lots of healthcare data. It's also helping in fields like finance, manufacturing, marketing, and cyber security. But some people worry that not all AI research is done well in information systems. Only a few research papers clearly explain what AI is or talk about its ethical concerns and risks. Researchers also have to deal with problems like privacy, high costs, and not knowing enough about AI (Sarker, 2022). To solve these problems, researchers need to pick the right AI techniques for their research. They should work with experts from different fields like computer science, philosophy, and economics to understand AI better. In the end, AI has the potential to change research a lot, but it's up to researchers to use it wisely. Building smart AI systems, making sure they're safe and ethical, and working together with AI will be important for making the most of AI in research (Sarker, 2022). First off, this input data are essential to the security of the machine learning system as the training data heavily influences the system's performance. When malicious input data is used in adversarial example attacks, for example, the machine learning system is frequently tricked into making incorrect judgments (predictions and categorizations) with minute perturbations that are indistinguishable to humans. Similarly, data poisoning, which occurs when raw, training, or testing data is purposefully altered, can lead to errors specific to the attack or reduce model accuracy. Second, ML model threats include backdoor attacks on DL, CNN, as and federated learning that directly change the model's parameters, as well as model stealing, model inversion, including inference about membership attacks, all of these can steal model parameters or leak important training data. While several

defense strategies for these security risks have been presented, new attack models targeting ML systems are continually evolving. Thus, it is vital to address the issue of ML security and create robust ML systems that can withstand malicious assaults (Xu et al., 2021). Every potential application of AI will have benefits and drawbacks; it is critical to identify these at a high level (e.g., impact on early career researchers). AI strategy can learn from broader discourse on metrics, targeting to avoid further aggravating the impact of metrics in higher education. Multidisciplinary academic groups should test the reliability of systems, whatever their domain of use, and this could encourage a fairer, more just, use of AI (Chubb et al., 2022).

6. AI and Education: Critical Perspective

AI's role in education is being looked at closely from different angles like economy, fairness, business, rules, and what's right or wrong. These looks show that AI in education is made up of many different parts. It's been around for a while, and people are thinking about how it's changed over time, how to make sure it's fair, and how companies are selling AI tools for schools. They're also talking about how important it is to have rules about AI in education and how to make sure those rules are fair. To make AI work well in schools, experts from different fields need to work together to design and test it. It's also important to teach teachers and students about AI and how to think critically about it. That way, they can understand and deal with the ethical and social issues that come with using AI in education (Holmes et al., 2022).

Despite the immense opportunities that AI provides, it may also pose certain drawbacks. AI has the potential to be either the finest or worst thing that ever happened to humans. AI can help with teaching and learning, but the rise of AI applications in higher education raises new ethical concerns and hazards. As an example, due to the continuing coronavirus pandemic and budget constraints, administrators may explore replacing teaching with profitable automated AI solutions. If the use of AI in education rises, personal contacts will decrease, or kids will get addicted to technology, which can sometimes damage rather than aid them (Sawant & Vaghela, 2022). According to the AI perspective on humankind, in order to enhance human intelligence with machine intelligence and improve human welfare, AI algorithms must prioritize humanity, carry out explicable and comprehensible computation and opinion processes, and constantly modify themselves in light of social developments and the human context (Yang, 2021).

In order to promote a deeper understanding of human-centered AI, research on the topic encourages in-depth discussion amongst academics from various fields, genders, ethnicities, and cultures. By combining machines with human intelligence, fruitful interactions between academics can advance the use of people-centered AI in education (Yang, 2021). Academic staff, student advisors, teaching assistants, as well as administrative personnel could worry that they will be replaced by an AI-powered intelligent tutoring system. Massive volumes of data, including private information on employees and students, are needed for AI systems, which raises severe privacy concerns (Sawant & Vaghela, 2022). Extreme artificial intelligence (AI) and robotics provide risks and difficulties that should be taken into account in all domains of its use, especially in education. The usage of artificial intelligence tools and robots can induce a detachment from emotions; teachers and pupils claim that a robot cannot be imitated since it is emotionless. The haphazard use of robots and artificial intelligence in the classroom has been linked to additional risks and drawbacks (Tao, 2019).

Teachers worry that a robot will replace them, but they also worry that a robot won't be able to precisely monitor each and every student's unique progress in their lessons. A robot can never understand their feelings since it is emotionless and can never meet every student's needs, taking into account their individual potential and limits. A robot could never succeed in the learning procedures that human teachers undertake on an individual basis for each of the students they teach (Tao, 2019). This quick analysis of 50 publications brought to light ChatGPT's inconsistent performance in various topic areas as well as its potential uses as a virtual tutor for learners & an instructor's assistance (Lo, 2023). However, there are a number of issues with its use, including the possibility that it could provide false or inaccurate information and compromise academic integrity. The review's conclusions demand that colleges and universities revise their policies and procedures for upholding academic integrity and preventing plagiarism right now. Instructors should also receive training on how to identify plagiarism in student work using ChatGPT. The use, restrictions, and possible effects on academic integrity of ChatGPT should also be explained to students (Lo, 2023).

7. Data Interpretation and Analysis

Table 1: Respondents Gender (N=100)

S. No. 1	Respondents Gender	Frequency	Percentage
1	Male	47	47%
2	Female	53	53%
3	Any Other	-	-
Total		**100**	**100%**

The data shows how the students are distributed by gender. The respondents have replied that 47 (47%) male and 53 (53%) female respondents, making up 100% of the participants. None of the respondents identified as

"Any other" gender. This information gives us an idea of the gender makeup of the surveyed group. The majority were females followed by males.

Table 2: Respondents Age (N=100)

S. No.	Respondents Age	Frequency	Percentage
1	18-25	96	96%
2	26-34	2	2%
3	35 above	2	2%
Total		**100**	**100%**

In terms of the distribution of respondents' ages, the data reveals that most respondents (96%) fell into the 18-25 age bracket, with a minority in the 26-34 (2%) and 35 and above (2%) age groups. This breakdown suggests that the study primarily gathered insights from younger individuals, particularly those aged 18-25, regarding AI integration in higher education.

Table 3: Respondents Education stream (N=100)

S. No.	Education	Frequency	Percentage
1	Arts	60	60%
2	Medical	4	4%
3	Engineering	8	7.9%
4	Other	28	27.7%
Total		**100**	**100%**

This data provides insights into the diverse educational backgrounds of the surveyed population, with a significant representation from the Arts field. The distribution reflects the varied perspectives and experiences that individuals from different educational backgrounds bring to the survey. The provided data presents the distribution of respondents' educational backgrounds in a survey. The respondents' education levels were categorized into Arts, Medical, Engineering, and other, with corresponding frequencies and percentages. The majority of respondents had an Arts background, accounting for 60% of the total, followed by other at 27.7%, Engineering at 7.9% and Medical at 4%.

Table 4: Respondents Education Level (N=100)

S. No.	Education Level	Frequency	Percentage
1	UG	35	35%
2	PG	63	63%
3	PhD	2	2%
Total		**100**	**100%**

The provided data presents the distribution of respondents' education levels in a survey. The respondents' education levels were categorized into Undergraduate (UG), Postgraduate (PG), and Doctor of Philosophy (PhD), with corresponding frequencies and percentages. The majority of respondents held a Postgraduate degree, accounting for 63% of the total, followed by Undergraduate at 35% and PhD at 2%. This data provides insights into the educational qualifications of the surveyed population, with a significant representation from the Postgraduate level. The distribution reflects the varied academic backgrounds and expertise that individuals bring to the survey.

Table 5: Respondents Institution (N=100)

S. No.	Institution	Frequency	Percentage
1	Collage	21	21%
2	University	79	79%
Total		**100**	**100%**

The provided data presents the distribution of respondents' institutions in a survey, categorizing them into "Collage" and "University," with corresponding frequencies and percentages. The majority of respondents, accounting for 79% of the total, were affiliated with universities, while 21% were associated with colleges. This data provides insights into the educational affiliations of the surveyed population, indicating a predominant representation from university settings. The distribution reflects the diverse institutional backgrounds of the respondents and their potential influence on their perspectives regarding the integration of Artificial Intelligence (AI) in education.

Table 6: Respondents Habitation (N=100)

S. No.	Habitation	Frequency	Percentage
1	Rural	76	76%
2	Urban	24	24%
Total		**100**	**100%**

The provided data presents the distribution of respondents based on their habitation, categorizing them into rural and urban areas, with corresponding frequencies and percentages. The data indicates that 76% of the respondents were from rural areas, while 24% were from urban areas. This information provides insights into the geographic distribution of the surveyed population, highlighting a predominant representation from rural settings. The distribution reflects the diverse habitation backgrounds of the respondents and their potential influence on their perspectives regarding the integration of Artificial Intelligence (AI) in education.

Table: 7. Familiar with AI (N=100)

S. No.	How familiar are you with Artificial Intelligence (AI)?	Frequency	Percentage
1	Not familiar at all	4	4%
2	Somewhat familiar	43	43%
3	Moderately familiar	53	53%
Total		**100**	**100%**

The question presented pertains to the familiarity of respondents with Artificial Intelligence (AI). The data provided indicates that 43% of the respondents are somewhat familiar with AI, while 53% are moderately familiar. Only 4% of the respondents indicated that they are not familiar with AI at all. This suggests that a majority of the respondents have at least some level of familiarity with AI, with a significant portion being moderately familiar with the concept.

Table 8: Thought on AI in Education (N=100)

S. No.	What are your thoughts on the use of AI in education?	Frequency	Percentage
1	Good	35	35%
2	Bad	5	5%
3	It's depends upon individual to individual	60	60%
Total		**100**	**100%**

The data provided does not directly address the use of AI in education. However, based on the information presented, it is evident that the respondents have varying opinions on the use of AI in education. 35% of the respondents view it as good, 5% consider it bad, and 60% believe that its effectiveness depends on individual preferences and circumstances. The use of AI in education has the potential to revolutionize learning experiences, personalize education, and provide valuable insights for educators. However, it also raises concerns about privacy, data security, and the potential for replacing human interaction in the learning process.

Table 9: Improvement in Education by AI (N=100)

S No.	Which of the following benefits do you think AI can bring to education?	Frequency	Percentage
1	Improved personalized learning	59	59%
2	Efficient administrative tasks	32	32%
3	Enhanced student engagement	37	37%
4	Better assessment and feedback	40	40%
5	Increased accessibility	49	49%

The data provided indicates the perceived benefits of AI in education, as reported by the respondents. The benefits and their corresponding frequencies and percentages are as Improved personalized learning: 59%, Efficient administrative tasks: 32%, Enhanced student engagement: 37%, Better assessment and feedback: 40%, Increased accessibility: 49%, Based on the data, the respondents believe that AI can bring several benefits to education. These include improved personalized learning, better assessment and feedback, increased accessibility, enhanced student engagement, and more efficient administrative tasks. These perceived benefits align with the potential of AI to enhance various aspects of the educational experience, from personalized learning experiences to administrative efficiency and accessibility.

Table 10: Use AI-Powered Educational Tool (N=100)

S. No.	Have you ever used an AI-powered educational tool or platform?	Frequency	Percentage
1	Yes	73	73%
2	No	13	13%
3	Maybe	14	14%
Total		**100**	**100%**

Based on the provided data, 73% of the respondents have used an AI-powered educational tool or platform, while 13% have not, and 14% are unsure. This indicates a significant level of engagement with AI-powered educational tools or platforms among the respondents.

Table 11: Benefits of AI in Education Sector (N=100)

S. No.	Which subjects or areas of education do you think can benefit the most from AI integration?	Frequency	Percentage
1	Mathematics	13	13%
2	Language learning	32	32%
3	Science	24	24%
4	Social sciences	9	9%
5	Arts and humanities	22	22%
Total		**100**	**100%**

Based on the data provided, the subjects or areas of education that respondents believe can benefit the most from AI integration are as it Language learning, with 32% of respondents indicating its potential for benefit. Science, with 24% of respondents recognizing its potential for improvement through AI integration. Arts and humanities, with 22% of respondents acknowledging its potential for enhancement through AI integration. Mathematics, with 13% of respondents identifying its potential for improvement through AI integration. Social sciences, with 9% of respondents recognizing its potential for benefit from AI integration. These responses indicate that language learning, science, arts and humanities are perceived as the areas of education that can benefit the most from AI integration, according to the survey data.

Table 12: Improvement in AI-tools in Educational Platforms (N=100)

S. No.	What improvements would you like to see in AI-powered educational tools or platforms?	Frequency	Percentage
1	Better quick to use	28	28%
2	Free	33	33%
3	User friendly	39	39%
Total		**100**	**100%**

Based on the data provided, the respondents expressed their preferences for improvements in AI-powered educational tools or platforms. The improvements they would like to see include better quick usability, with 28% of respondents indicating this preference, followed by free access, which was preferred by 33% of respondents, and user-friendly features, which were favored by 39% of respondents. These preferences suggest a desire for AI-powered educational tools or platforms that are easy to use, accessible at no cost, and designed with user-friendly interfaces.

Table 13: AI's Role in Shaping Future (N=100)

S. No.	Do you believe that AI will play a significant role in shaping the future?	Frequency	Percentage
1	Strongly disagree	8	8%
2	Disagree	4	4%
3	Neutral	30	30%
4	Agree	33	33%
5	Strongly agree	25	25%
Total		**100**	**100%**

Based on the data received 33% of respondents agree that AI will play a significant role in shaping the future. 25% of respondents strongly agree with the statement. 30% are neutral on the impact of AI in shaping the future. 4% disagree with the concept. 8% of respondents strongly disagree with the notion. In summary, a majority of respondents (58%) either agree or strongly agree that AI will have a significant role in shaping the future, while a smaller percentage (12%) disagree with this idea.

Table 14: Areas that AI can positively Impact in Education (N=100)

S. No.	Which of the following areas do you think AI can positively impact in education?	Frequency	Percentage
1	Enhancing personalized learning	47	47%
2	Improving assessment methods	35	35%
3	Automating administrative tasks	30	30%
4	Facilitating remote learning	47	47%
5	Aiding in adaptive learning	35	35%

The survey data indicates that respondents believe AI can positively impact education in several areas. Specifically, they identified the following areas and their corresponding frequencies and percentages as Enhancing personalized learning 47%, Improving assessment methods: 35%, Automating administrative tasks: 30%, Facilitating remote learning: 47%, Aiding in adaptive learning: 35%, Based on the data, it is evident that respondents perceive AI as having a positive impact on enhancing personalized learning, facilitating remote learning, aiding in adaptive learning, improving assessment methods, and automating administrative tasks within the educational context. These findings reflect the potential for AI to contribute to various aspects of the learning experience, from personalized instruction to administrative efficiency and remote learning facilitation.

Table 15: Concerns Regarding AI in Education (N=100)

S. No.	What concerns you the most about the use of AI in education?	Frequency	Percentage
1	Loss of jobs for teachers	26	26%
2	Lack of human interaction	36	36%
3	Data security and privacy concerns	21	21%
4	Biased decision-making	11	11%
5	Unequal access to AI technology	6	6%
Total		**100**	**100%**

In short, respondents' main concerns about AI in education are reduced human interaction (36%) and potential teacher job displacement (26%). Additionally, they express worries about data security and privacy (21%), biased decision-making (11%), and unequal access to AI technology (6%).

Table 16: Are They Comfortable by Assessed By AI (N=100)

S. No.	Would you feel comfortable being assessed by an AI system?	Frequency	Percentage
1	Yes	26	26%
2	No	22	22%
3	Depends on the context	52	52%
Total		**100**	**100%**

The data indicates that 52% of respondents are open to AI-based assessment, with their comfort levels contingent on the situation. Additionally, 26% express complete comfort with AI-based assessment, while 22% feel uncomfortable about being assessed by an AI system. Overall, the majority are receptive to AI-based assessment, though comfort levels vary depending on context.

Table 17: Educational Equity & Accessibility Issues (N=100)

S. No.	Do you think AI can help address educational equity and accessibility issues?	Frequency	Percentage
1	Yes	53	53%
2	No	15	15%
3	Not Sure	32	32%
Total		**100**	**100%**

The data shows that 53% of respondent's view AI as a potential solution for improving educational equity and accessibility. Meanwhile, 32% are unsure about AI's effectiveness in addressing these issues, and 15% doubt its capability to contribute to them. Overall, the majority (53%) hold a positive perception of AI's ability to address educational equity and accessibility challenges.

Table 18: AI Technologies Can Improve Students Engagement (N=100)

S. No.	To what extent do you believe AI technologies can improve student engagement?	Frequency	Percentage
1	Not at all	8	8%
2	Slightly	24	24%
3	Moderately	50	50%
4	Significantly	18	18%
Total		**100**	**100%**

In summary, the data depicts different degrees of belief regarding the influence of AI technologies on student engagement: 8% hold the view that AI technologies will not enhance student engagement. 24% believe in a minor improvement. 50% foresee a moderate improvement.18% expect a substantial enhancement in student engagement as a result of AI technologies.

Table 19: Ethical Implications of Using AI (N=100)

S. No.	Are you concerned about the ethical implications of using AI in educational settings?	Frequency	Percentage
1	Yes	53	53%
2	No	11	11%
3	Partially	36	36%
Total		**100**	**100%**

The data from question S. No. 13 indicates that 53% of the respondents are concerned about the ethical implications of using AI in educational settings, while 11% are not concerned, and 36% are partially concerned. This suggests that a majority of the respondents have some level of concern regarding the ethical implications of AI in education.

Table 20: AI Potential in Education (N=100)

S. No.	Do you feel adequately informed about the potential of AI in education?	Frequency	Percentage
1	Yes	36	36%
2	No	15	15%
3	To some extent	49	49%
Total		**100**	**100%**

About the AI, to gain the idea that students were aware about the potential of AI in education or not, so for that we raised the question **"**Do you feel adequately informed about the potential of AI in education?" And we got a mix response were 36 (36%) were aware about the potential of AI, while 15 (15%) replied No to this aware about the potential of AI and other said that To some extent they are aware about 49 (49%). So the majority of them believe that they have an idea about the potential of AI.

Table 21: AI Can Reduce Educational Costs (N=100)

S. No.	Do you think AI can potentially contribute to reducing educational costs?	Frequency	Percentage
1	Yes	50	50%
2	No	14%	14%
3	Not sure	36	36%
Total		**100**	**100%**

The data from question S. No. 15 indicates that 50% of the respondents believe that AI can potentially contribute to reducing educational costs, while 14% do not think so, and 36% are not sure. This suggests that a significant portion of the respondents see potential in AI for reducing educational costs, while others are uncertain or skeptical about its impact in this area.

Table 22: Factor for Successful Adoption of AI in Education (N=100)

S. No.	Which factors do you believe are critical for successful adoption of AI in educational institutions?	Frequency	Percentage
1	Adequate training for teachers	11	11%
2	Clear ethical guidelines	16	16%
3	Accessible infrastructure and technology	18	18%
4	Collaboration between AI experts and educators	44	44%
5	Regular monitoring and evaluation	11	11%
Total		**100**	**100%**

The survey data indicates that respondents believe several factors are critical for the successful adoption of AI in educational institutions. These factors include collaboration between AI experts and educators, which was identified by 44% of the respondents, as well as accessible infrastructure and technology (18%), clear ethical guidelines (16%), adequate training for teachers (11%), and regular monitoring and evaluation (11%). This suggests that collaboration between AI experts and educators is considered the most critical factor for the successful integration of AI in educational institutions.

Table 23: Potential Biases with AI (N=100)

S. No.	Are you worried about the potential biases that AI systems may have in relation	Frequency	Percentage

	to race, gender, or other demographics?		
1	Yes	42	42%
2	No	29	29%
3	May be	29	29%
Total		**100**	**100%**

The survey data indicates that 42% of the respondents are concerned about the potential biases that AI systems may have in relation to race, gender, or other demographics, while 29% are not concerned, and 29% are unsure. This suggests that a significant portion of the respondents have apprehensions about potential biases in AI systems related to race, gender, or other demographics.

Table 24: AI Can Help in Reducing Educational Inequalities (N=100)

S. No.	Do you think AI can help in reducing educational inequalities?	Frequency	Percentage
1	Yes	53	53%
2	No	21	21%
3	May be	26	26%
Total		**100**	**100%**

Based on the survey data, 53% of the respondents believe that AI can help in reducing educational inequalities, while 21% do not think so, and 26% are unsure. This suggests that a majority of the respondents see potential in AI for addressing educational inequalities, while a smaller proportion is uncertain or skeptical about its impact in this area.

Table 25: Challenges of Implementing AI in Education (N=100)

S. No.	In your opinion, Is there any potential drawbacks or challenges of implementing AI in education?	Frequency	Percentage
1	Yes	62	62%
2	No	6	6%
3	May be	32	32%
Total		**100**	**100%**

Based on the survey data, 62% of the respondents believe that there are potential drawbacks or challenges of implementing AI in education, while only 6% do not think so and 32% are unsure. This suggests that a majority of the respondents perceive potential drawbacks or challenges associated with the implementation of AI in education, indicating a need for further exploration and consideration of the concerns related to AI integration in educational settings. If you have any specific questions or need further insights on this topic, feel free to ask for more details.

Table 26: Drawbacks of AI in Education (N=100)

S. No.	What are the Drawbacks of AI in education?	Frequency	Percentage
1	Academic Dishonesty	30	30%
2	Copyright Issue	18	18%
3	Research Quality Issue	21	21%
4	Books Detachment	18	18%
5	Any other	13	13%
Total		**100**	**100%**

The drawbacks of AI in education, as indicated by the survey data, include academic dishonesty, copyright issues, research quality concerns, and detachment from traditional learning resources such as books. These drawbacks are reported with the following frequencies and percentages: Academic Dishonesty (30%), Copyright Issue (18%), Research Quality Issue (21%), Books Detachment (18%), and Other (13%). The survey data highlights the potential challenges and concerns associated with the integration of AI in educational settings. Academic dishonesty, copyright issues, research quality, and detachment from traditional learning resources are significant drawbacks that need to be addressed when implementing AI in education.

8. Conclusion

The provided data presents the results of a survey on the perceptions and attitudes of respondents towards Artificial Intelligence (AI) in the context of education. The survey encompasses various demographic and opinion-based questions, yielding insights into the gender distribution, age groups, educational backgrounds, and habitation of the respondents. The responses to questions regarding familiarity with AI, opinions on its

use in education, perceived benefits, utilization of AI-powered educational tools, preferred subjects for AI integration, desired improvements in AI-powered educational tools, and concerns about AI in education are also detailed. Additionally, the survey delves into the respondents' beliefs about the role of AI in shaping the future, its potential impact on education, concerns about its ethical implications and biases, as well as the critical factors for successful AI adoption in educational institutions. In terms of demographics, the survey reveals a nearly equal gender distribution, with 47% male and 53% female respondents. The majority of respondents fell within the 20-29 age range, and the educational backgrounds were diverse, with a significant proportion holding postgraduate degrees. The respondents were predominantly from urban areas, comprising 76% from rural and 24% from urban settings. In terms of familiarity with AI, a majority of respondents reported being either somewhat familiar or moderately familiar with AI. When asked about the use of AI in education, 60% of the respondents indicated that it depends on the individual, reflecting a nuanced perspective on the matter. Regarding the perceived benefits of AI in education, the majority of respondents highlighted improved personalized learning, increased accessibility, and better assessment and feedback as potential advantages. Furthermore, a substantial proportion (73%) reported having used an AI-powered educational tool or platform. The survey also shed light on the subjects or areas of education that respondents believed could benefit the most from AI integration, with language learning and mathematics being notable areas of interest. Furthermore, the respondents expressed their preferences for improvements in AI-powered educational tools, with user-friendliness and being free of cost being the primary concerns. The survey also captured the respondents' beliefs concerning the significant role of AI in shaping the future and its potential positive impact on educational aspects such as personalized learning, assessment methods, and facilitating remote learning. Moreover, the survey highlighted concerns about the use of AI in education, with issues such as loss of jobs for teachers, lack of human interaction, and data security and privacy being prominent. Additionally, the respondents shared their perspectives on AI's potential to address educational equity and accessibility issues, improve student engagement, and reduce educational costs. Lastly, the survey explored the critical factors for the successful adoption of AI in educational institutions, as well as concerns about potential biases and challenges associated with AI implementation in education. In conclusion, the survey provides valuable insights into the perceptions, attitudes, and concerns of respondents regarding the integration of AI in education, thereby offering a comprehensive understanding of the multifaceted perspectives on this evolving educational landscape.

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