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Artificial Intelligence in Education: Benefits and Risks

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Abstract: *The growing use of artificial intelligence (AI)-based programmes in higher education and high schools is a sign of the industry's embrace of AI as a tool for enhancing student learning. Before integrating AI into the conventional educational system, developers, educators, and students should all take the dangers into account. To safeguard students' ethical understanding, emotional intelligence, and intellectual creativity, it is vital to find a balance between the advantages and hazards of artificial intelligence in education. Although AI is already poised to impact the future of education internationally. Hence, the benefits of AI in education, applications of AI in the classroom that are grounded, risks connected with AI in education, a comparison of the advantages and disadvantages of AI in education, criticism of AI in education, and the possible influence of AI on education were all covered in this article. Among other strategies for striking a balance between the benefits and risks of AI in education and ensuring the future of education globally, collaboration in ongoing research and giving equity, transparency, and accountability top priority are crucial to ensuring the moral and responsible use of AI in education.*

Key words: AI, Artificial Intelligence, Education, Benefits, Risks

1.0 Introduction

The integration of artificial intelligence (AI) within educational settings has become a topic of significant interest among scholars in recent times. The escalating pervasiveness of artificial intelligence (AI) implementations in educational settings has incited fervent discourse regarding the prospective advantages and disadvantages of this phenomenon. In the submission of McCarthy (2007), the primary aim of research in the field of artificial intelligence (AI) is to create robotic systems that possess cognitive abilities that were once believed to be exclusive to human beings. The term may also be applied to any machine that exhibits traits associated with a human mind, such as learning and problem-solving (Komleva & Mikhailova, 2019). It refers to the simulation of human intelligence by machines that are programmed to think like humans and mimic their actions (Kaushik, 2022). Artificial intelligence's ability to reason and choose actions that have the best possibility of succeeding in a particular objective is its ideal quality (Miller, 2019). Machines

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equipped with artificial intelligence can mimic or even outperform human brain functions in education (Huang & Rust, 2018).

Artificial intelligence (AI) enables intelligent machines to learn from experience, adapt to new inputs, and execute human-like tasks (Tanwar, 2022). The objectives of artificial intelligence encompass the augmentation of computerised learning, cognitive processes, and perceptual abilities. Artificial intelligence is currently being utilised across diverse domains such as finance, medical care, and academia. There are individuals who hold a skeptical view regarding the potential consequences of the extensive implementation of sophisticated artificial intelligence in society. AI in education is not about utilising humanoid robots as teachers to replace human teachers, but rather about using computer intelligence to assist teachers and students and make the education system much better and more successful (Alam, 2021; Belpaeme & Tanaka, 2021).

The utilisation of Artificial Intelligence (AI) within the realm of education is experiencing a notable surge in momentum, primarily attributable to its capacity to enhance student learning outcomes and academic achievement. In education, AI can be used for speech recognition, computer vision, translation between (natural) languages, and other mappings of inputs (Galbusera, 2019). AI algorithms can be used to prompt deep conversations with students, collaboratively research topics, personalise content for individual learners, and provide feedback that supports their development in meaningful ways (Thill et al., 2020). Additionally, AI-driven technologies offer greater accessibility and affordability than traditional instructional approaches (Yoo & Kim, 2019). In an increasingly digital world where data flows freely across all domains, it is essential to understand how AI integrations affect educational outcomes within classrooms. This knowledge will enable educators to maximise the benefits offered by these new tools while still maintaining quality instruction grounded in pedagogical principles (Rasman et al., 2017; Weinstein et al., 2018).

AI has the potential to revolutionise educational practices and outcomes, and as such, there has been increased focus on this topic over recent years (Mhlanga, 2023). For example, Khan et al. (2020) found that AI could be used to improve student engagement by providing personalised learning experiences based on individual preferences and goals. Other studies have looked at how machine-learning algorithms can recommend appropriate curriculum materials or predict tutorial pathways from data mining learner action logs (Fotso et al., 2020; Kim & Yoon, 2020; Tomasevic et al., 2020; Troussas et al., 2020). The research into using artificial intelligence in education is ongoing, but so far it appears to hold a great deal of promise and potential for improving teaching effectiveness while also benefiting learners with more tailored approaches to instruction.

While AI has the potential to improve student outcomes and assist teachers in identifying areas where students are struggling, it is important to consider the potential negative consequences, such as exacerbating existing inequalities, and the ethical implications of relying too heavily on AI in education (Ungerer & Slade, 2022). However, there have been serious concerns and a series of debates among educators and researchers about the ethical, emotional, and future applications of using AI in education, some of which have no empirical evidence but are rather speculations. Therefore, this paper is aimed at exploring what could be the benefits of AI in education, the use of AI in classrooms around the world, the risks of AI in education, the comparison of advantages and disadvantages of AI in Education, the criticism of AI in education, and the future of Education. This study also described how to balance the benefits and risks of AI in education to guarantee the future of education globally.

2.0 Benefits of AI in education

The integration of Artificial Intelligence (AI) within the realm of education has the potential to yield numerous advantages for students, faculty, and educational institutions. The implementation of AI technology in educational systems has the capacity to bring about a significant transformation by facilitating customised learning experiences for every student, expediting the grading and feedback procedures, augmenting data analytics capabilities, providing better access to high-quality resources, and other such benefits (Ghinea & Pedrinazzi, 2018; Xiao et al., 2019). Additionally, it can help save time and money while allowing teachers to focus on teaching rather than administrative duties (Rhaaeno et al., 2020). Intelligent tutoring systems can analyse a student's performance and adapt the curriculum to their strengths and weaknesses (Burns & Capps, 2013).

This personalised method may encourage greater participation in the subject matter and allow students to progress at their individual pace. Additionally, AI can provide students with quick feedback, enabling them to remedy errors and strengthen their conceptual comprehension (Luckin et al., 2016). This may result in improved knowledge retention and learning effectiveness. According to the National Bureau of Economic Research in Alam (2021), incorporating AI into education can lead to significant improvements in student outcomes. According to the research, students who got individualised teaching using AI technology outperformed their peers on tests and were more likely to finish their assignments. Additionally, AI can help instructors see the areas in which their pupils are having difficulty and provide them extra resources to improve their learning (Kasneci et al., 2023). Teachers may concentrate on higher-level feedback such as content and argumentation by using AI-powered software, which can assess student writings and offer comments on grammar, spelling, and sentence structure (Zer & Yükselir, 2023). AI has the capacity to free up 30% of a teacher's time and energy, enabling them to devote more time to duties that call for empathy and creativity (Chui, 2017). This could end up in a system of education that is more successful and productive, which would be favourable to students as well as teachers. By offering individualised, interesting, and adaptive learning environments for students as well as educators, it has the potential to change teaching and learning (Alam, 2022).

AI may further improve the effectiveness, efficacy, and equity of school systems by delivering data-driven insights, intelligent tutoring, and automated assessments (Hieu & Uyen, 2019. However, there are worries about the moral ramifications of using AI in education too aggressively and the possibility of escalating already-existing inequities among pupils. AI poses several hazards and problems to the educational system, including less human connection, job threats to teachers, moral and financial concerns, a lack of emotional intelligence, and a decline in student initiative and inventiveness. Therefore, it is crucial to weigh the benefits and downsides of AI in education and ensure that its implementation is constrained by moral principles and human rights.

2.1 Examples of how artificial intelligence is currently being applied in schools worldwide

Personalising learning experiences, automating administrative processes, giving students real-time feedback, and promoting student engagement are all made possible by AI. For instance, Carnegie Learning's Mika platform uses AI to analyse student performance and provide personalized recommendations for improvement based on their individual needs (Resnick, 2021). In China,

Squirrel AI uses AI to create personalized learning plans for students based on their strengths and weaknesses; AI-powered robots are used to provide one-on-one tutoring to English and STEM subjects (Li et al., 2019). Additionally, Duolingo's AI-powered language learning app provides immediate feedback and adapts to the learner's level of proficiency (Loewen et al, 2019). Carnegie Learning's Mika platform uses AI to provide individualized mathematics instruction to students in K-12 classrooms (Williamson et al., 2020). AI is being used to personalize learning experiences for students, such as in the case of Carnegie Learning's mathematics tutoring software which adapts to individual student needs (Resnick, 2021).

Additionally, it is used to grade student work and provide feedback, as seen in the case of Turnitin's Feedback Studio (Kostka & Maliborska, 2016). In China, AI-powered robots are being used to teach English to young students, while in the US, AI is being used to grade essays and provide personalized feedback and recommendations for further study (Canals & Al-Rawashdeh, 2019). In the US, EdTech Company Carnegie Learning uses AI to grade student assignments and provide feedback (Murphy, 2019). It is used to help students with their homework and examination preparation (Zhou, 2019). AI enhances students' academic achievement in classrooms. An AI-powered mathematics tutor called Squirrel AI has been used to improve students' mathematics scores by up to 35% (Ahmad et al., 2020).

In a similar line, AI is already being utilised in classrooms to automate administrative work and give teachers feedback. Facial recognition technology driven by AI is utilised in China to track students' concentration levels in class (Andrejevic & Selwyn, 2020). In China, the AI-powered Smart Campus Initiative has been implemented in over 400 schools to track student attendance and behavior patterns. It is being used by teachers to detect early signs of mental health issues among students (Vieira et al., 2014). In China, Squirrel AI provides AI-powered adaptive learning programmes platforms like DreamBox and Knewton have been used by over 2 million students (Ahmad et al., 2020).

In addition, AI-powered chatbots like Jill Watson are being used to provide 24/7 support to students and answer their questions in real-time (Drozdal et al., 2021). In the US, AI chatbots are used to answer students' questions and provide academic support (Chen et al., 2023). In China, AI-powered cameras are used to monitor students' behaviour and engagement in the classroom (Hlee et al, 2023). AI chatbots are being used in universities in the United States to provide students with instant support and guidance (Huang, 2019). AI is being used to personalize learning experiences, track student progress, and provide feedback to both students and teachers (Maghsudi et al., 2021).

3.0 Risks of AI in education

AI can provide numerous educational benefits such as personalised learning, adaptive evaluation, and intelligent tutoring but there are several challenges, barriers, and risks to using AI in education that must be considered. Here are some of the challenges, barriers, and risks of AI in education:

Reduced human interaction: Artificial intelligence (AI) in education can be a useful tool, but it can also limit the chance for learners to practise and acquire social skills in the classroom because they lack interaction with real people. Meanwhile, developing interpersonal skills such as emotional intelligence, empathy, teamwork, and communication is crucial for the future workforce (Alam, 2021; Porayska-Pomsta & Rajendran, 2019)

Teacher unemployment: AI in education may potentially result in teachers losing their jobs or having their roles and responsibilities curtailed. Some of the responsibilities that teachers perform, such as planning instruction, teaching, assessing, and providing feedback to students, could potentially be replaced by AI systems. This may result in the loss of the human expertise, originality, and mentoring that teacher's offer to their students (Tschannen-Moran & Tschannen-Moran, 2010).

Ethical issues: AI in education may provide ethical issues that are not adequately addressed or understood in kindergarten to twelve contexts (Akgun & Greenhow, 2021). For instance, AI systems have the potential to gather and exploit a lot of students' data, which raises concerns about ownership, security, consent, and privacy. As a result, the quality and fairness of education may be impacted by AI systems that are biased, inaccurate, or unreliable (Tolksdorf, 2021).

Digital divide and inequality: AI in education has the potential to widen and amplify the digital divide and inequality that exists among students from various situations and origins. The platforms, internet, and devices that make AI-based learning possible are not equally accessible to all students (Hill & Lawton, 2018). Additionally, not every student possesses the same level of digital literacy and proficiency needed to use and comprehend AI systems.

Lack of productive thinking: AI in education may potentially prevent students from developing their creative and analytical thinking abilities (Suraci, 2022). AI systems may offer pre-packaged responses to issues, which may deter students from considering further options and viewpoints. Students' autonomy and diversity of thought may be diminished using algorithms and recommendations by AI systems, which can also affect students' decisions and beliefs.

Lack of openness and trust: Using artificial intelligence in education can also lead to a lack of transparency and trust between students, teachers, and AI systems (Nazaretsky, 2022). It is possible that teachers and students are unaware of how AI systems operate or the rationale behind their conclusions. Their trust in and acceptance of AI systems as reliable sources of knowledge and direction may be impacted by this.

Lack of emotional connection: Artificial intelligence in education may not be able to connect with children on an emotional level like peers and teachers do (Vartiainen, 2020). The emotional states, needs, and preferences of students may not be recognised or addressed by AI systems. Students who feel alienated or frustrated by AI systems may suffer as a result, which may damage their motivation, engagement, and general wellbeing.

Lack of emotional intelligence: The emotional demands of students, such as those for inspiration, criticism, and encouragement, may be difficult for AI to comprehend or address (Lim et al., 2021). AI may also be incapable of fostering the critical thinking, creativity, and problem-solving abilities necessary for 21st-century learners12.

Lack of flexibility and adaptability: According to Kaplan and Haenlein (2019), AI in education might not be able to offer students the same degree of adaptation and flexibility that human teachers can. AI systems might not be able to handle unforeseen events or modifications to the learning environment or curriculum. Furthermore, AI systems might not be able to accommodate students' various learning preferences, skill levels, interests, and objectives.

Absence of regulation and accountability: AI in education is currently devoid of the accountability and regulation necessary to guarantee the integrity and quality of instruction. The creation, application, and assessment of AI systems in education are not subject to any specific norms or regulations (Ekman, 2018). The possible hazards or harms that AI systems might inflict on children or teachers are also not clearly addressed by any established methods or procedures.

Financial issues: Due to the technology and software necessary for their execution, AI-based solutions are frequently more expensive than conventional teaching methods. Resources, knowledge, and infrastructure are needed in large quantities for the development, implementation, and upkeep of AI systems (Alam & Mohanty, 2022). This might result in a digital divide between children, schools, and nations with access to various levels of AI resources.

Maintenance problems: AI may require constant maintenance and updating to keep up with the changing needs and demands of education (Huang & Rust, 2018). AI may also malfunction or break down at times, which could disrupt the learning process and cause frustration for students and teachers.

Artificial intelligence addiction: AI may create a dependency on technology that could affect the autonomy and self-regulation of students. Students may rely too much on AI for guidance and answers, rather than exploring and discovering things on their own (Song & Kim, 2021).

Artificial intelligence data problems: AI may raise moral and privacy concerns with the gathering, storing, and usage of student data. The effectiveness and validity of educational outcomes may be jeopardised by AI's vulnerability to prejudice, hacking, and manipulation (Regan & Jesse, 2019).

Communication difficulty: Students from different linguistic and cultural backgrounds may find it difficult for AI to communicate with them effectively. The ability of AI to comprehend the context, nuance, and humour of human language may also be limited (Jeon, 2021).

Reduces students' ability to think critically: AI may lessen the cognitive burden and difficulty of learning for students, which may have an impact on their brain growth and memory retention. It might deter students from having doubts, making errors, and failing forward (Albus et al., 2021).

Laziness in the students: AI may encourage laziness and passivity in students who may not feel motivated or engaged to participate actively in their own learning. AI may also reduce the sense of responsibility and accountability of students for their own learning outcomes (Green et al., 2020).

Technical barriers: The integration of AI into educational platforms requires technical knowledge that is not widely available (Otto, Waller & Wolenetz, 2019).

Biased data: AI systems can collect vast amounts of data on students, raising concerns about privacy and security. They are only as unbiased as the data they are trained on, and if that data reflects existing biases and inequalities, the system will reproduce and even amplify them (Pedro et al., 2019).

Ethical considerations: Questions of data privacy can arise when using AI in education as student and teacher data may need to be collected for the system to function properly (Holmes et al., 2023).

Security risks: Because AI systems collect sensitive information about students, there are potential security risks associated with their use of such data for other purposes that education. (Nigam et al., 2021). While most of this computer programme employs numerous modules, the confidential data it collects causes anxiety among the student body.

Absence of risk insurance protocols: The most crucial information is the absence of risk insurance protocols following the initial rollout due to lack of preparation, as well as the lack of adequate external standardisation, internationally recognised curricular guidelines, processes, measures, tools, assessment frameworks, resources, materials, support vehicles, internal cross-referencing, and cultural values (Kenneth & Grazyina, 2013).

Widespread literacy gaps: An understanding of how AI works is essential for making informed decisions regarding its usage but lack of understanding among individuals could lead to broad literacy gaps between users and these systems (Long & Magerko, 2020)

Cultural ethics of use: Different cultures view the use of AI very differently based on beliefs around individual autonomy and individual agency (Ahmed & Prosser, 2016).

Lack of access to technology: There may be lack of access to technology in certain communities, and the potential for AI algorithms to perpetuate biases and inequalities (Currie & Rohren, 2022).

Algorithm bias: Poorly calibrated algorithms used in such technologies could lead to unexpected results due to bias built into the model's parameters (Brotman & Zou, 2018; Zajko, 2022).

Unrealistic expectations: Administrators or developers might overestimate what current processing power can achieve leading to underperformance (Currie & Rohren, 2022).

Cultural ethics of use: Different cultures view the use of AI very differently based on beliefs around individual autonomy and individual agency (Currie & Rohren, 2022). Lack of access to technology in certain communities, and the potential for AI algorithms to perpetuate biases and inequalities (Bowen, 2022).

4.0 Summarised comparisms of the advantages and disadvantages of AI in Education

Advantages of AI in Education	Disadvantages of AI in Education
Organized information	Human interaction decreases
Personalized learning	Unemployment of the teachers
Better for students with special needs	Financial problems
Immersive learning	Lack of emotional intelligence
Intelligent tutoring systems	Artificial intelligence addiction
Adaptive group formation	Artificial intelligence data problems
Facilitation by example	Communication barrier
Intelligent moderation	Decreases the thinking power of the students
Virtual reality learning	Maintenance problems
Essay grading software	Laziness in the students

5.0 Criticism of AI in Education

One potential issue is that AI may reinforce and exaggerate prejudices and stereotypes, especially in contexts like grading and admissions. An AI system may perpetuate biases while making decisions, for instance, if it was educated on data that is skewed against particular populations. Artificial intelligence may eventually totally replace human educators, which would entail losing the emotional support and intimacy that are so important to learning. Because of this, it is essential to carefully consider AI's function in education and make sure that it is deployed in a way that promotes equality and accessibility for all students while assisting teachers rather than displacing them (Hübner, 2021; Prince & Schwarcz, 2019; Schwartz et al., 2022).

Massive volumes of student data are also collected and analysed by AI systems, which increases the risk that this information will be utilised improperly and compromise student privacy. To protect the confidentiality of student data and prevent its unauthorised use, educational institutions must establish clear guidelines and protocols. It is imperative to inform students and their families about the implementation of artificial intelligence in educational settings and provide them with the opportunity to decline its usage in case of apprehensions regarding privacy or other related issues.

Transparency and clear communication are critical for creating trust in the use of AI in education among schools, families, and technology suppliers (Berendt et al., 2020; Masters, 2023; Regan, & Jesse, 2019).

The use of AI in education has the possibility to make already existing student inequality even worse. AI systems may unintentionally reinforce bias and discrimination if they are not developed with diversity and inclusion in mind. An AI system may perpetuate biases while making decisions, for instance, if it was trained on data that is biased against populations. As a result, existing marginalised groups like students from low-income households or students with impairments may become even more marginalised. To avoid reinforcing or introducing new prejudices, it is essential that AI systems are developed, tested, and evaluated with diversity and inclusion in mind. They also need to have open and accountable decision-making processes. Mehrabi et al., 2021; Ntoutsi et al., 2020; Parikh et al., 2019)

Using AI in teaching has certain ethical repercussions. AI systems may eventually be able to gather and analyse enormous amounts of data about students, including their preferences, conduct, and learning styles. This prompts concerns regarding data ownership and appropriate usage. Should schools have access to this data to utilise it in making judgements concerning the education of children (Dwivedi et al., 2023; Etzioni & Etzioni, 2017; Holmes et al., 2023) or should it be kept private?

Additionally, there is a potential that AI programmes might replace real instructors, which would be detrimental to both pupils and teachers. The number of open teaching posts might decrease, for instance, if AI systems are utilised to automate educational responsibilities like grading and delivering feedback. Less possibilities for teachers to give each student their undivided attention and for kids to get individualised education could come from this (Carbonell, 1970; Oke & Fernandes, 2020).

Furthermore, if AI is only available to pupils who have access to technology and the internet, it could worsen already existent inequities in education (Beaunoyer, 2020). As a result, it is essential to carefully analyse how AI might affect education and to make sure that its application is constrained by moral standards and a dedication to justice and inclusion.

Concerns have also been raised about the quality of education that students would get because of AI use in the classroom (Dai et al., 2020). While artificial intelligence (AI) technologies could be able to provide real-time feedback and customised learning experiences, they might not be able to take the place of instructors' social and emotional intelligence in the classroom. Students may grow socially and emotionally via interaction with instructors and classmates, two elements that are crucial for their overall growth.

Moreover, if AI systems are taught on discriminatory data, they may reinforce prejudices and perpetuate biases (Cheuk, 2021). For instance, if an AI system is trained on data that reflect racial or gender stereotypes, it may give biased results that further marginalise student groups. As it could perpetuate current disparities and restrict opportunities for marginalised populations, this could have significant consequences for the future of education.

As a result, even while the application of AI in education has the power to completely transform how students learn, it is crucial to proceed cautiously with this strategy (Hennessy et al., 2005). It is essential to think about how AI might affect equality and inclusion as well as the standard of education students receive. Furthermore, measures must be taken to make sure that AI systems are not reinforcing prejudices and biases that could further marginalise student groups. In the end, applying AI to education necessitates a cautious and moral strategy.

The ethical ramifications of utilising AI in education, such as the potential for discrimination and the lack of human touch throughout the learning process, are also a source of worry. Therefore, before using new technology in the classroom, researchers and educators must carefully balance their benefits and drawbacks.

6.0 AI and Future of Education

AI is a powerful technology that can transform the way students learn, teachers teach and educators' work. It is predictable that AI will continue to shape the future of education in several ways. For instance, AI will enable more personalized and adaptive learning for students, by analysing their learning styles, preferences, strengths, and weaknesses, and providing customized feedback and guidance (Datamation, 2023). AI will help teachers save time and enhance their productivity, by automating tasks such as grading, attendance, curriculum design, and data analysis (UNESCO, 2023). AI will create new intelligent tools and platforms for education, such as virtual tutors, chatbots, simulations, games, and augmented reality (UNESCO, 2019). It will prepare students for future jobs that require AI skills and competencies, such as problem-solving, critical thinking, creativity, collaboration, and ethical awareness (Selwyn & Facer, 2022). AI will foster lifelong learning and continuous upskilling for workers and teachers in a rapidly changing labour market, by providing personalized and flexible learning opportunities and career guidance (UNESCO, 2019). AI will improve access and equity in education, by reaching learners in remote or marginalized areas, providing multilingual and culturally relevant content, and reducing costs and barriers to education (Lambert, 2020). AI will enhance the quality and relevance of education, by aligning learning outcomes with the needs and expectations of society, employers, and learners

themselves (GoStudent, 2023). AI will support collaborative and interdisciplinary learning, by connecting learners across different locations, disciplines, and backgrounds, and facilitating knowledge exchange and co-creation (UNESCO, 2019). According to Ng et al. (2022), AI will promote innovation and creativity in education, by inspiring learners to explore new ideas, experiment with different solutions, and express themselves in various ways. It will raise ethical and social challenges for education, such as ensuring data privacy and security, preventing bias and discrimination, fostering human dignity and values, and regulating the use and impact of AI (Selwyn & Facer, 2022).

These are some of the possible prospects for how AI might keep influencing the future of education. They are, however, not unavoidable, or deterministic. The real results will be determined by how developers and educators design, develop, use, and regulate AI technology in education. As a result, it is critical that all stakeholders engage in well-versed and inclusive discourse on ensuring that AI serves the common benefit of humanity.

7.0 How to Balance the Benefits and Risks of Using Artificial Intelligence in Education

The way students' study and become ready for the future might be revolutionised by integrating AI into education. It must be addressed cautiously, considering how it would affect all parties. To guarantee that it serves the requirements of every student and encourages equal results, the integration of AI into education should be created with the help of educators, students, and other stakeholders. To ensuring AI is utilised morally and responsibly, calls for cooperation between educators, technologists, politicians, and other stakeholders. To comprehend the efficiency and possible hazards of AI in education, more investigation and assessment are required. Additionally, ethical considerations like algorithmic bias and data protection must be made.

An all-encompassing strategy that considers the requirements and viewpoints of all stakeholders is necessary for the successful integration of AI into education. For the ethical and responsible use of AI in education to be ensured, it is crucial to prioritise fairness, openness, and accountability while collaborating on current research. To successfully incorporate AI into their classrooms and curriculum, educators must be taught and given the necessary tools. To safeguard student privacy and guarantee that AI is utilised ethically and responsibly, policies and laws must be in place.

One can only fully realise AI's promise to improve education and better prepare students for the workforce by taking a holistic and cooperative approach. Engaging educators, politicians, and industry leaders to collaborate on a single objective is necessary for the implementation of AI in education.

To guarantee that the data used to train AI systems is varied and reflective of all learners, it is essential to include students in the construction and deployment of these systems. Integrating AI into classrooms raises serious ethical questions that must be considered by teachers.

The measures encompass transparency regarding data collection, utilisation, and accessibility, implementation of strong security protocols, utilisation of AI as a supportive tool for educators rather than a replacement, and provision of an environment that fosters free expression of students' opinions and beliefs without the threat of persecution or retaliation. It is imperative that students are afforded a secure and hospitable educational setting that fosters their scholarly advancement and enhances their overall welfare.

The possible biases that may be included in AI systems must be considered by educators. To achieve this, it is important to make sure that the data sets used to train AI systems are diverse and inclusive of all pupils. Additionally, the AI systems should be routinely monitored and assessed.

Teachers should also prioritise accountability and transparency when using AI in the classroom, so that students and their families can understand the rationale behind any choices made. Artificial intelligence (AI) can gather vast quantities of data on pupils, which raises privacy and abuse of information concerns in the classroom. The use of AI systems by educators must respect students' privacy and take the necessary precautions to secure student data.

Similarly, educators must think about how AI will affect the labour market and help students be ready for a day when AI will play a bigger part in society. They need to be knowledgeable about the possible biases and restrictions of AI systems and ready to deal with any unforeseen effects of utilising AI in the classroom. It's crucial for educators to find a balance between using AI's positive effects in the classroom and being aware of any possible negative effects.

8.0 Conclusion

Artificial intelligence (AI) is a smart and novel innovation that can provide multiple advantages and prospects for education. AI might boost the standard and accessibility of education by offering individualised, immersive, and dynamic learning experiences for students and teachers. AI might enhance the effectiveness, efficiency, and equity of educational organizations by delivering data-driven insights, intelligent tutoring, and automated assessment. AI, however, poses a few challenges and risks to education, including less human connection, job risks for teachers, moral and financial concerns, a lack of emotional intelligence, and a reduction in student agency and inventiveness. Therefore, it is crucial to weigh the advantages and hazards of AI in education and ensure that its implementation is constrained by moral principles and human rights. Instead of them replacing or undermining human teachers and students, AI should be used to complement and improve them.

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