

A Systematic Review On The Identification Of The Education System And Legal Aspects Of Artificial Intelligence, From An International Perspective

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1. Introduction

Artificial intelligence has made significant steps with the application related towards various sectors, including transportation, healthcare, and finance in recent years. AI-powered platforms and tools have the ability to completely change the learning and teaching process, and education with less exception in the international context (Jaber, & Fritsch, 2022). The ethical concerns and several legal raised by the integration of AI in education were addressed to make sure it's responsible and equitable use. The key challenges and issues that were considered by policymakers, technology developers, and educators were highlighted in the international context, and this research provides a systematic review of the legal framework surrounding AI in education. Data privacy is one of the primary legal concerns that is related to artificial intelligence in education. In the context of education, the data frequently includes student sensitivity information like their achievements in academic, personal traits, and learning preferences. Artificial intelligence system depends on huge volume of data to operate efficiently. The storage, collection, and use of the data needs to comply to the related privacy regulations, such as the General Data Protection Regulation (GDPR) in the European Union and the Family Educational Rights and Privacy Act (FERPA) in the United States (Archambault, 2021).

On processing personal data, including sharing the privacy of data, giving clear transparency about how the data is utilized, and obtaining concern from individuals, these are major laws carried out strictly. Regarding discrimination and algorithmic bias, artificial intelligence in education raised concerns in addition to data privacy. The huge number of databases, AI systems are trained, and if there a biased or unbiased sample contained in the database, the AI may spread and even exacerbate existing inequalities. In the environment, economy, and society, substantial changes have been brought about by global interconnectedness and rapid phase of technological growth. These changes are cooperatively stated as megatrends.

(Haluza & Jungwirth 2023) stated that these megatrends may expect to continue in the 21st century. The reason for the growth of innovative technologies like open artificial intelligence ChatGPT and other AI based technologies in recent years, and the artificial intelligence field made an important step in it. The artificial intelligence systems are trained and designed in a way that avoids the spreading of harmful stereotypes and promotes fairness; the risk was moderate, and it is very important to make sure that happens. In education the ethical usage of artificial intelligence, clear guidelines were established; in the development process, that involves incorporating diverse perspectives, to identify and address the biases of the artificial intelligence system, regular audits must be conducted. In the field of education, the ChatGPT have the potential to bring out these changes because

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it is a language model, and the AI-based system has cutting-edge technology. In the educational system, the implementation of AI-based system has become more widespread. The most advanced chatbot is the ChatGPT, which has never been created before. In comparison with previous chatbots, it may produce outstanding style in a matter of seconds, and it has generated a lot of excitement and accurate projections regarding student assessment in higher education, among other problems (Rudolph et al., 2023).

Intellectual property (IP) rights are another legal issue related to AI in education. The original content, such as assessments, research papers, or even lesson plans, may be generated by artificial intelligence systems because they have become more sophisticated. The question is raised whether the AI system, the developers, or the educational institution using the system owns the intellectual property rights to the research. To clear the license and ownership of artificial intelligence-generated work, the policymakers need to develop a new legal framework, and the current intellectual property laws may not adequately address the research gap. Concerns are raised about the liability and accountability of the usage of artificial intelligence in education (Guan, 2023). It could be unclear who is at fault when an AI system malfunctions or causes harm, by giving wrong information or making biased decisions and whether the educational institution using the system, the AI system's developers, or the AI system itself bears responsibility. A clear legal framework that explains the responsibility and liability of artificial intelligence in education must be established by policymakers to address these issues and also consider the unique issues raised by these technologies. To improve the learning and teaching process, the combination of artificial intelligence in education offers huge possible, but it also raises several ethical and legal concerns that also must be addressed (Guan, 2023).

In the educational sector, there is continuous development and more prevalent artificial intelligence; it is very important for technology developers, policymakers, and educators to work together to establish a robust legal framework that ensures the equitable use of artificial intelligence and responsibility in education. That involves protecting the interests and rights of educators and students, getting into complex issues with data privacy and accountability, and maintaining a balance between algorithmic bias, innovation promotion, and intellectual property rights. In educational settings, the ethical and responsible use of ChatGPT is accompanied by a comprehensive and complicated issue that necessitates an interdisciplinary approach. The necessity of using artificial intelligence in education in an ethical and responsible manner has been highlighted by recent study. The research that has been done on this subject by Dignum (2019); Wang et al., (2020) has concentrated on issues such as privacy, bias, and how AI may worsen the digital gap. Some researchers additionally highlighted the need for a variety of approaches to the ethical and responsible application of AI in educational settings, as well as the importance of considering the role that AI focused play in determining the future of education (Hwang et al., 2020; Knox, 2020; Schiff, 2021). The responsible and ethical application of artificial intelligence tools in educational settings the previous gap findings are focused and also serve as a base for the current proposed investigation. In educational settings, the responsible and ethical use of artificial intelligence with exact prominence on the facilitation of lifelong learning was the investigation of this study. In education, how artificial intelligence tools are utilized in different ways and also opportunities and challenges that are presented by using the artificial intelligence are discussed in this research. To develop more discussion and research on this important topic and also to give a complete understanding of the responsible and ethical use of artificial intelligence in education towards the global perspective was the major objective of this review.

2. Methodology

2.1 Research Approach

Within the education system, to investigate the legal aspects of artificial intelligence (AI), researcher employ the effective and in-depth PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework in this systematic review. Developing the exact research question that addresses the artificial introduction related to legal consideration and interaction of the education system was the significant objective of this review. Simultaneously the next is the complete process is processed by outlining the study's objective, research strategy, methods used for data synthesis and extraction, and eligibility criteria. Across relevant databases, the incorporates predefined terms and keywords, and in-depth literature research is conducted. To identify studies meeting inclusion criteria based on the abstract/title and full-text assessment, a two-tier screening process is implemented. From selected studies, systematically collect relevant information, planned data extraction forms are employed that include legal considerations, implications for education, study design, and AI applications. To make sure the data synthesis and methodological strictly follow the PRISMA guidelines, trends, identify the patterns and gaps in the literature and the quality assessment is conducted. In artificial intelligence in education, exploring the legal dimensions makes sure that it is transparency and reliable, adhering to PRISMA guidelines and comprehensive report; based on this, the systematic review is concluded. Strong inclusion and exclusion criteria are set to carry out this systematic review of the legal implications of artificial intelligence (AI) in the educational system utilizing the PRISMA framework. This study focused on how legal issues and artificial intelligence interact in educational settings, with scholarly publication and empirical research obtaining emphasis. The legal dimension of artificial intelligence in education or lacking relevance to the defined research questions is not directly addressed by this time by the exclusion criteria involved in this study.

2.2 Collection of Records from Database

To ensure an in-depth and diverse coverage of relevant research, the search method makes use of various soft data collecting systems, including academic databases like Scopus, Web of Science, ResearchGate, and Google Scholar. To capture a complete view of the legal landscape surrounding artificial intelligence in education, policy documents, grey literature sources, and legal databases are also consulted. In the research strategy, to improve the focus, the keywords are systematically selected. These contain various terms like "legal aspects" and "education system," which makes it possible to find research that specifically discusses the legal consequences of AI in educational settings. To narrow or broaden the search parameter as per their need, the Boolean and truncation operators are strategically utilized.

2.3 PRISMA Framework

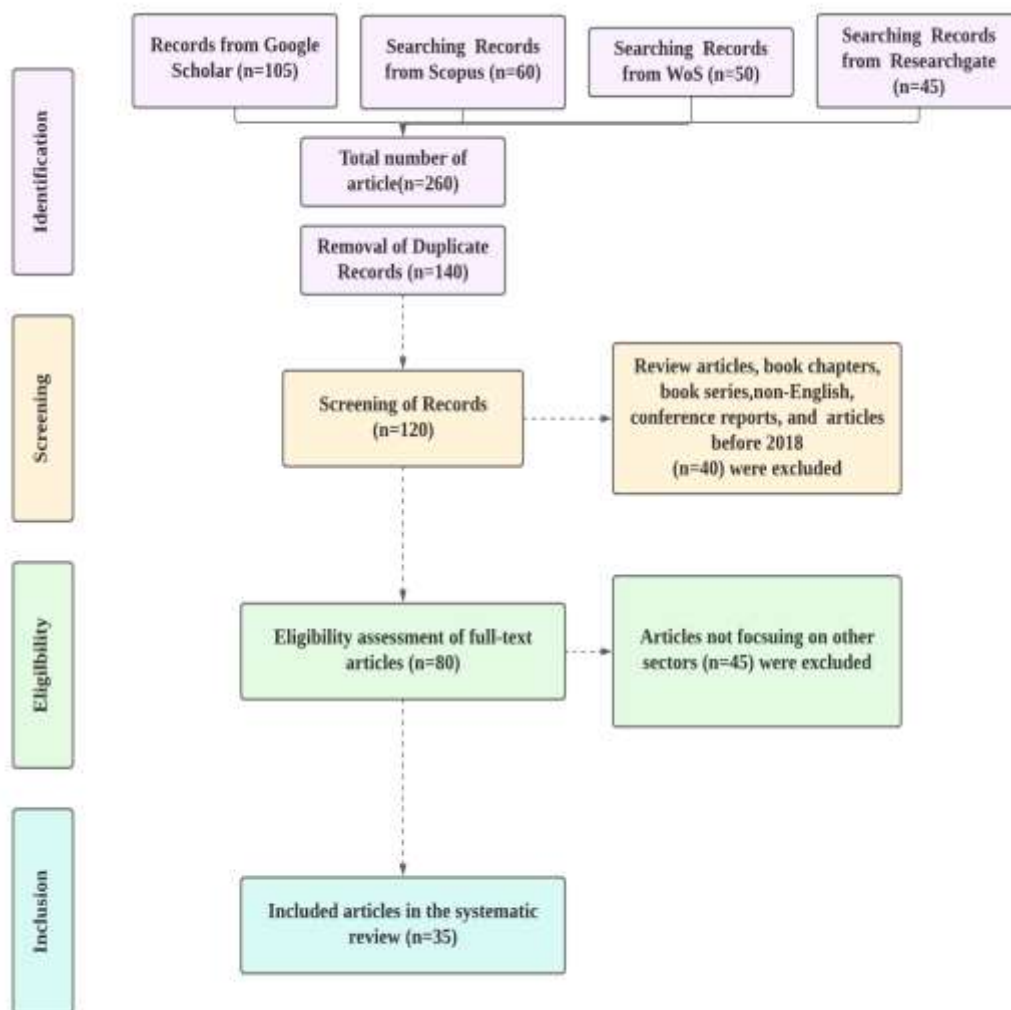


Figure 1. PRISMA Framework
(Source: Self-developed)

To provide an in-depth exploration of the legal facts of artificial intelligence in education, the attachment of these carefully selected keywords, specific criteria and diverse data collection platforms improve the ability of their reviews.

2.4 Inclusion and Exclusion Criteria

By following the PRISMA standards, this specific technical makes sure that the systemic review is reliable, transparency, and relevant to the synthesis of literature on this important intersection. In the identification section, records collected from google scholar (n=105), Scopus (n=60), WoS (n=50), and ResearchGate (n=45). In the screening section, screening of records (n=120) and the screened articles include from review articles, book chapters, book series, non-English, conference reports, and articles before 2018 (n=40) were excluded. In the eligibility criteria, eligibility assessment of full-text articles (n=80), and articles not focusing on other sectors (n=45) were excluded. In the inclusion criteria, the overall article included articles in the systematic review (n=35).

3. Review on the Evolution of Artificial Intelligence in Education

The ability of ChatGPT and additional AI based tools offers opportunities for the application of new and innovative methods in educational settings. Mhlanga, (2023)

predicted that artificial intelligence (AI) technologies like Google bard, Writesonic, and ChatGPT plays a major role in education. Researcher suggest using technology to improve learning. An approach to improve the assessment process is by providing resources to the teachers and the faculties need to use testing as a learning tool as well as a learning process in and of itself. The artificial intelligence tool used to develop the involves increases the collaboration and involvement of the students, encourages experimental learning through hands-on activities, and extends the teaching approaches. Artificial Intelligence based tools provides a significant step to develop the educational system even though it is a technology that may be considered as troublemaking. Multiple perspectives of changes as well as opportunities for teachers is been evolved by the proper usage AI tools in the context of educational institutions. AI tools having the ability to produce essays might represent an issue with conventional methods of student evaluation, but it also provides educators with an opportunity to create completely novel means of assessing students' abilities. To improve the capability of instructor evaluation, provide students more possibility to learn through trials, experience teamwork among students, and stimulate collaboration. Although ChatGPT is a technology that creates problems for the education industry, its modernization has a chance to transform education.

Rudolph et al. (2023) stated that the evolution of “ChatGPT” is the most progressive chatbot currently in use; it may generate excellent content in a matter of seconds when compared to previous chatbots. It has also generated a lot of attention and concerns about a wide range of problems, including the assessment of students in higher education. The researcher concentrated on the consequences of the technology for higher education and discussed how teaching harassment and learning may change in the future in the settings of chatbots related by the optimized artificial intelligence programs. The researcher describes the ChatGPT functionality and also summarises its limitations and strengths. In the field of artificial intelligence in education the issues faced by these students, teachers, system-facing applications, and also the potential dangers in the area are examined by the researcher. Researcher utilize ChatGPT within the framework of the most recent studies on artificial intelligence in the context of education.

Thurzo et al. (2023) stated that there is rising concern regarding the legal and ethical implications of AI, and more agreement is needed to ensure its safe and responsible use in dental education. Research by Pfeffer et al. (2023) indicated that there are advanced language models signify an important step forward in artificial intelligence, and future innovations in the field depend on the underlying technology. Large language models are proposing consistent outcome, in spite of opposing opinions and even local and regional restrictions. The study examined the potential advantages and challenges associated with utilizing large language models in education, considering the viewpoints of educators and learners alike. The authors highlighted the benefits of using large language models. The author discussed the current stage of multiple language models in the current era associated with the applications. Next, researchers concentrate on the multiple perspectives of the language models could be applied to generate instructional materials, enhance student participation and communication, and customized-learning environments. Pfeffer et al., (2023) significantly stated the structured language models in educational settings need the school teachers and students to enhance their skills on the information literacy and subject matter expertise required to recognize the technology along with its limitations and unexpected weaknesses. These difficulties include the possibility of output bias, the need for ongoing human review, and the opportunity for abuse. Researchers suggest the research difficulties are needs to be appropriately handled and it provides chances and insights in learning environments to acquaint students with the risks, critical situations, and potential societal biases connected to implementing AI early in their careers of academic context.

Qadir (2022) states that to remain with the most recent technical developments and fulfil the demands of the engineering business, engineering education is always improving. In the field of AI, one of the most significant recent developments is the application of highly-evolved artificial intelligence-based technologies, such as Google-bard, ChatGPT chatbot, and Write-Sonic. For providing effective hands-on learning opportunities to enable

the creation of realistic visual stimulation, students receive personalized explanations and feedback with ChatGPT, Google-bard based chatbots. The educational experience of these students might become more personalized and productive results. It became more important concern for understand specific limitations imposed by this AI technology, and it was the researcher's point of view. Qadir (2022) concludes that the engineering education service providers have to understand the consequences of this innovation and analyse methods to re-structure the engineering education system to confirm that future generations of engineers improve the benefits and minimises the drawbacks of generative AI.

Natural language processing claims that recent advances provided possible solutions to comprehend and synthesize clear text in an open-ended context. The artificial intelligence based theoretical techniques have been translated into practical implementation and it was effectively organized on the enterprises. There is a substantial impact of the developed language model, and it helps to generate a report that summarizing the outcomes for the software platforms and copywriters. There is a possibility that advanced language models show the toxicity and social prejudice. The research represents a risk to society and ethics because of the implications of irresponsibility. As a result, Zhuo et al (2023) recommendations stated the importance that need to be followed during the development of large-scale standards and regulations for responsible standard language models.

4. Investigating the ethical and legal aspects of AI in Education

To ensure that AI-based tools and other AI-based applications are applied in a structure that is courteous, significant and safe to stakeholders, teaching instructors and students, it is important to stick to ethical and responsible practices while executing the technology in the sector of education. The successive application of artificial intelligence or AI based technology in the sector of education, including AI tools such as ChatGPT, write sonic and google bard, can bring multiple benefits; but also, it increases issues regarding responsibility and ethics. The application of AI, particularly Artificial Intelligence based tools utilized in the educational system, into the educational field brings forth a huge number of legal and ethical considerations in the "International Context". This thematic analysis discovers key dimensions, focusing on the global or universal nature of these issues.

4.1 Legal aspects of privacy in using AI

To start, securing the users' data privacy is a fundamental priority of online-integrated system. The AI based chatbots (ChatGPT, writesonic, and google bard) are a trend on extensive record of information organized from cyberspace or the internet source, and it is significant to confirm that the personal data of the student is safe and never used for any personal purposes (Mhlanga, 2023). Before using AI based chatbots (ChatGPT, writesonic, and google bard) in the school classroom, teachers or educators are in the position to inform all students regarding the way of information collection, kept, used and gain their consent. Additionally, students need to have knowledge about the "security measures" that are used to defend the personal information. During the implementation and usage of "AI applications" in the educational field, the protection of individual's personal information is the significant and essential concern. In the developing era of educational attainment, most of the individuals are evolving in this educational process including teachers, students and others' confidentiality needs to be maintained (Celik, 2023). The "General Data Protection Regulation (GDPR)" in European countries and the "Children's Online Privacy Protection Act (COPPA)" in US firms focused to secure the personal information of individuals (Berger 2022, Botha et al. 2017). These laws and regulations must be focused on the structured manner for providing security to the personal information of individuals, teachers, educational counsellors and students. The regulation must concern about the student assessment results, grades and information that are collected through the application of AI based chatbots (ChatGPT, writesonic, and google bard) in the sector of education.

The regularized usage of AI based chatbots (ChatGPT, writesonic, and google bard) in the education field that mainly focuses on the personal information, including personal particulars, student performance, project idea, assignment details and grades (Baidoo-Anu, & Ansah, 2023). For monitoring the privacy and confidentiality of the people/students using the AI based chatbots, it is important to secure usage of personal information, unauthorized access to the information becomes more significant concern. In the advanced learning process, the term "trust" became significant component in the data security of individuals (Myskja, 2023). The teachers, educational counsellors, students and other people involved in the education context, believe that the privacy and confidentiality of the personal data were maintained, and the outcomes are more significant to give their complete participation and involvement through the process of learning (Tartavulea et al. 2020). The individual's "right to privacy" is significantly impacted by the usage of AI tools, that creates a minimal significant impact on the outcomes of education learning and on complete context. The application of AI based chatbots in the educational field were carried out and considered in a way that is fixed with significant ethical principles including accountability, transparency and informed consent. Respecting people's "right to privacy" is considered a legal responsibility that represents admiration for people and their legal rights. Similarly, the ethical concepts explain about the educational application of AI based chatbots, maintaining the confidentiality of the users is the major significance. It is important to maintain proper safety measures to protect the personal information of those engaged in this educational process, to confirm that the application of AI tools is fixed with ethical principles and to maintain trust.

The legal measurement of privacy or confidentiality in the significant application of AI. Particularly, Bard and AI applications are entangled and demand careful inspection from an international viewpoint. Reidenberg & Schaub, (2018) highlights understanding the developing landscape of confidentiality in educational settings, focusing on the requirement for proper legal frameworks that acclimatize to technological advancements and developments. A thorough understanding of "global privacy laws" is important, consent and notice in the age of Big Data gives valuable insights on steering informed consent issues in different legal contexts (Horodyski, 2014). The above-mentioned literatures significantly impact the legal aspects of privacy in using AI based chatbots.

4.2 Ensuring Equity and Eliminating Bias in AI Applications

It is essential for AI based chatbots to exhibit bias, specifically in the "language" and guide the equity on AI applications. This is important to provide an appropriate context when applying AI tools in the sector of education and classroom settings. The possibility for harm needs also be presented to the educators' attention, specifically if AI based chatbots are applied as an evaluation or grading tool for students. Students are undergone and treated to unfair, discriminatory, or biased treatment due to their utilization of AI tools, regardless of variables including their socioeconomic background, colour or gender (Adam et al., 2021). Because AI algorithms including AI based chatbots can magnify and preserve discrimination, prejudices, and biases, non-discrimination and fairness were strictly maintained whenever AI based chatbots are used in the sector of education. Students were maintained unequally and unfairly within the usage of AI tools, if these "biases" are not understood and recognized directly. As an effect, it is important to point out that AI systems and AI based chatbots (ChatGPT, writesonic, and google bard) are used, advanced and comprehended in a non-discriminatory and fair method during every stage of the procedures. Concerning the likelihood of applying AI tools to assign assessments or grades to pupil assignment and essays. Pupils belonging from minority groups have their "essays" receive nominal level of grades due to their learning information that was applied to practice AI based chatbots being moved towards a specific group of students. It directly leads to the disregarding of groups that are significant and act as a barrier in respect of context of education and also intensify existing gaps in the educational context (Smuha, 2022). Moreover, significant language models including AI based chatbots magnifies and propagates undesirable prejudices, biases and preconceptions. Multiple threats that

originates with applying these research models related towards the educational sector. AI based chatbots occupied in educational fields, the applications provide reactions that are discriminatory and prejudiced, training information that was applied to train the unfavourable prejudices regarding particular groups. Instructors, students and other educational members may suffer due to this. The compulsory to eliminate bias and ensure equity in AI integration is considered a global concern, specifically in the education field. Diakopoulos (2016) supports accountable algorithms, concentrating on fairness and transparency towards the need of AI. In the gender shades project (Buolamwini and Gebru, 2018) focus on intersectional accuracy discrepancy, stressing the significance of identifying bias in the system of AI. Mittelstadt and Floridi (2016) stated in their evaluation of ethical issues in "Big data" analytics, that an international viewpoint is necessary to understand the contextual variations and cultural nuances is biases. Due to this, it is vital to conduct a thorough explanation of AI systems including AI based chatbots and identify the opportunity of bias and discrimination before introducing them in educational settings.

4.3 Transparency in the usage of AI tools

Transparency is the major concern of AI based chatbot, and the AI based chatbot is more important, diligent and transparent about the AI application implementation in the educational field and to provide persistent opportunities in that teachers and students investigates the responsible and moral application of AI (Men et al., 2022). It can take the shape of forums, recurring workshops and discussion groups, and the candidates can contemplate the drawbacks and advantages of implementing AI in the sector of education and formulate advice for its ethical and responsible AI application. Because it ensures that educational institutions, professors and students understand what AI technologies are "capable" of doing and how the AI technology works (Rodgers et al. 2023). Transparency is an important feature of implementing AI applications in the sector of education. Both teachers and students must understand how AI technology including AI applications creates responses and processes information before incorporating the technology in the sector of education. This helps in the abolition of any misconceptions or ambiguities that may grow and confirms that this technology is applied responsibly and ethically (Mhlanga 2022). Transparency in the formation of AI tools including Bard and AI applications is a vital ethical consideration with worldwide implications. According to Weller (2019), algorithmic transparency considering the "European General Data Protection Regulation (GDPR)" provides an understanding of the legal need for transparency. Mittelstadt (2016), transparency is necessary for the accurate implementation of AI. These authors contribute to this discourse by focusing on the greater ethical issues of big data. An international viewpoint is important for evaluating how diverse jurisdictions approach and execute transparency requirements (Cowls et al., 2019). In the education field, there are multiple examples of transparent applications of AI based chatbots could include informing pupils about the data sources and algorithms used by this technology and describing the way it creates and process responses.

The information and insights derived from artificial intelligence were made available through many means, such as the utilization of educational resources and data, as well as support for research organizations, faculty members, and students. Furthermore, educational institutions should prioritize using transparent or open-source AI technologies to ensure that professors and students have access to the source code and underlying data. This can be achieved by prioritizing the deployment of transparent or open-source AI technology (Rodgers et al. 2023). Another case study of the transparent and straightforward nature of AI tools is the provision of sufficient explanation to students regarding the potential limits and biases of the tools used in the lecture hall. For example, made to understand that AI algorithms and applications serve basically as a means of guiding them through the material they are presented. Any biases that may have been present in the training data could potentially be reflected in the responses generated by the AI technology. Whenever teachers carefully consider the limitations outlined here and how they relate to

their students, they are going to be more equipped to critically understand and evaluate the responses provided by artificial intelligence (AI) tools (Mhlanga 2022). Apart from that, transparency is a crucial component of using AI tools in education because it encourages the responsible and ethical use of the tools and gives students a better understanding of their limitations and potential. This validates that AI is deployed in a way that is consistent with the founding beliefs and core values of the colleges and universities in that pupils are enrolled and gives users the capacity to utilize AI technologies in an appropriate and educated manner. In conclusion, the ethical and responsible use of AI tools in education requires an understanding of potential drawbacks and biases, the protection of student data, openness in its application, and a critical evaluation of the effects AI has on teaching and learning. The primary responsibility of educators, or teachers, is to assist students in developing critical, educated opinions on AI and in applying AI tools in an environment that substitutes for their teacher's instruction.

4.4 Assessing the Accuracy of Information Using AI

In the field of education, the accuracy of information and dependability are crucial because they guarantee the validity, credibility, and accuracy of the study materials that students are exposed to throughout. When discussing the guidelines for applying scientific ideas, it is crucial to provide reliable information because using inappropriate research materials could result in misunderstandings. For instance, if a student understands that the world is flat, they will not understand geography, astronomy, or any other related subjects that are taught concerning this topic or subject (Johnson et al., 2023). Correct information and knowledge are important for history teaching to comprehend the importance of the previous or past to the recent or present situation and also its evolving process. The validity and accuracy of information created by these AI tools in the education field are paramount worldwide. Cows et al., (2019) highlight an amalgamated framework of "principles" for AI including reliability and accuracy. Evaluating the global or international landscape confirms nuanced insights regarding accuracy standards and expectations around diverse educational settings. If a student has learnt that adding four and two equals five, then the student will face obstacles to understanding sophisticated mathematical ideas and solving any kind of arithmetic problems that have been created based on this misconception. Therefore, it is important to confirm that the data that is generated by this AI tool and any other application that is used in educating people is accurate. Both professors and learners need to exercise "critical thinking" while providing information and check the information with reliable sources.

5. Conclusion

Significant changes have been observed in the environment, the economy and society as a direct outcome of the rapid rate of technological development and advancement and enhanced global interconnectedness. Currently, the field of AI based chatbot has made appreciable advancements, which has prompted the development of "cutting-edge technologies" including Open AI's AI tools. The "AI applications language model" is considered a cutting-edge technology that can assist in a profound transformation period within the education field. The legal and ethical exploration of this AI in the sector of education necessitates a strong global viewpoint. Privacy accuracy, transparency and equity considerations must be examined and are intertwined within the framework of educational practices, cultural nuances and diverse legal systems. This approach highlighted by academic references, bestows the development of universally applicable and responsible guidelines for the implementation of Bard systems and AI applications in the sector of education. This paper's aims are to encourage additional discussion and research on this extremely vital topic, and provide a complete explanation of the ethical and responsible application of AI tools in education. The document analytical technique was used in this study, and it was observed that for AI tools to be applied in education, this is vital to confirm that privacy is maintained and respected, that there is proper transparency and there is non-discrimination and fairness in the implementation of AI based chatbot, and

in this study there are a some other conditions also outlined. As per the results of this study, it is deliberated that all these thoughts be followed to ensure that the responsibility and integrity of the education field are preserved around the world.

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