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Generative AI Ethics in Open and Distance Learning: ChatGPT's Role Under the Lens

Trisha Dowerah Baruah[1*], Apratim Baruah[2]

[1]*Bhupen Hazarika School of Mass Communication, Krishna Kanta Handiqui State Open University, Assam, India.*
[2]*Department of Business Administration, Gauhati University, Assam, India.*

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ABSTRACT

Digital media technologies and platforms are increasingly used on a wide scale in the field of education more specifically in the field of open and distance learning. Distance education has indeed come a long way from the Correspondence model to the Intelligent Flexible Learning model. With every passing year, new technologies and digital platforms have changed the way communication takes place. These days the emphasis has shifted from e-learning to u-learning which is an amalgamation of e-learning and m-learning that allows learning to take place independently of time and place. Since learners in open and distance learning system are not in direct face to face contact with the instructors, so they are provided with learners' support services which can facilitate the teaching-learning process. With the advancement in the field of ICT, technologies like blockchain, virtual reality, mixed reality and most importantly artificial intelligence have captured the attention of the learners and academicians alike. Generative AI or GenAI creates content in response to written prompts. It produces text, images, videos, music, software code, and many more. In this paper special emphasis will be given on analysing ChatGPT, which is a large language model-based chatbot developed by OpenAI and launched on November 30, 2022. This paper intends to analyse the ethical concerns of Generative AI in the field of distance education by specifically focusing on ChatGPT.

INTRODUCTION

With every passing year, there have been major developments and changes in the field of education with the incorporation of IT tools and technologies. Both conventional and distance educational systems witnessed a major revival of sorts making teaching learning experience a fruitful one. Artificial Intelligence is one such technology in which specific tasks are done by the computer or robot controlled by the computer as it requires human intelligence and discernment. Generative artificial intelligence (also generative AI or GenAI) is artificial intelligence that is capable of generating text, images, or other media, using generative models. GenAI has been used across a wide range of industries, including art, writing, script writing, software development, product design, healthcare, finance, gaming, marketing, and fashion. However, this technology runs the risk of being misused including cybercrime or creating fake news or deepfakes which can be used to deceive or manipulate people. This paper intends to analyse the ethical concerns of Generative AI in the field of education by specifically focusing on ChatGPT.

Objectives of the present study

The main objectives of the present study are –

- To assess the importance of Generative AI with special reference to ChatGPT in the field of education
- To introspect the feasibility of building a technology enabled learning environment specifically in the field of open and distance learning
- To analyse the pros and cons of accessing news and information through AI powered platforms as far as distance education is concerned.

***Corresponding Author:** Trisha Dowerah Baruah

Address: Bhupen Hazarika School of Mass Communication, Krishna Kanta Handiqui State Open University, Assam, India.

Email ✉**:** trishabaruah@kkhsou.in

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- To look into the ethical aspects of using Generative AI in the field of open and distance learning

Methodology of the present study :

The present study is basically a qualitative analysis of the ethics concerning Generative AI in the field of education by specifically focusing on ChatGPT. The researcher has followed a process of identifying, examining and interpreting patterns and themes pertaining to the ethical issues of using AI powered tools in the field of conventional as well as distance education. Besides , the researcher had analysed secondary data sources like books, journals, online learning resources in order to substantiate the basic premise of the research study i.e understanding the ethical aspects to the use of AI powered technology in the field of distance education with special focus on ChatGPT. The researcher has also made use of observation method in order to look into how one can navigate the ethical complexities of AI utilization, ensuring that these technologies enhance learning while respecting rights and fostering equity.

Theoretical Framework

AI powered tools provide personalized learning experiences to the learners . This approach aims to customize learning for each student's strengths, needs, skills, and interests. The concept of personalization is based on the theoretical foundations of *Gardner's (2011) Theory of Multiple Intelligences and Self* in which there are eight different domain-specific intelligences : Logical-mathematical, Linguistic, Musical, Spatial, Bodily-kinesthetic , Intrapersonal, Interpersonal, and Naturalist. By providing personalized feedback and adaptive learning environments that help students build knowledge based on their individual needs and previous experiences, artificial intelligence can support constructivist learning. This fact has been well defined in the *Jean Piaget and Lev Vygotsky's Constructivist Theory*. An individual's behaviour is shaped through reinforcement and punishment as outlined in *B.F Skinner's Behaviourist theory*. Behaviourist principles are applied through adaptive learning platforms that provide rewards and feedback based on student performance. Learning is also impacted by internal learning processes. AI tools can assist cognitivist approaches by modelling cognitive processes, such as problem-solving strategies, and offering tools like simulations or interactive problem-solving activities that enhance cognitive development. When networks are provided , learners can connect with diverse resources, experts, and peers as explained in *Connectivism theory.* Majority of learning systems are adaptive and personalized in nature. AI algorithms can analyze learner data in real-time to adjust the difficulty of tasks, suggest resources, and personalize the learning experience to improve outcomes and efficiency. Artificial intelligence can tailor educational experiences to meet the unique needs, strengths, and interests of each learner. *Personalized learning* and *Adaptive learning theory* focuses on these very aspects of learning. It is not just about providing tailored learning, but also creating an environment of social interactions in which different collaborative tools and platforms can be used that support interaction and knowledge sharing among learners as outlined in the *Socio-cultural theory*.

Common Applications of AI in Education

Artificial Intelligence is said to have a wide range of applications in education, enhancing both teaching and learning experiences. Artificial intelligence helps in personalized learning. It can tailor educational content to individual students' needs, preferences and learning paces. Tutoring systems that have been built with artificial intelligence provide additional support outside the classroom. Such AI powered tutoring systems can provide explanations to certain questions thereby mimicking the experience of having a personal tutor. Grading can turn out to be quite cumbersome when done manually. Teachers and instructors can make use of artificial intelligence for analysing multiple choice or short answer questions. This drastically reduces the workload and provides immediate feedback for the learners. Practice problems, quizzes, flashcards and interactive exercises can also be generated based on the course curriculum. AI-powered translation tools can also help break down language barriers thereby enabling the learners to comprehend the materials in different languages. The incorporation of virtual reality, augmented reality or mixed reality can make the learning process more interesting and informative. Learners can practice real-world skills in a controlled setting. Artificial intelligence is also supposed to help in streamlining administrative tasks like scheduling, enrolment management and communication with learners. For example, chatbots can handle routine enquiries and provide information about courses and policies. AI can also predict student performance and identify those at risk of falling behind. In this way, the instructors and the teachers can intervene at an early stage and provide the necessary support to them. Artificial intelligence can also provide insights into student learning patterns and behaviours. This can help the educators to introspect which teaching-learning methods are more effective and where modifications are needed. Differently-abled students can also receive help in the form of AI-powered assistive tools like speech-to-text and text-to-speech. It is not only the learners but the educators as well who can avail the benefits of artificial intelligence . AI assisted tools can aid in the professional development of the instructors by offering personalized training recommendations and providing feedback for improvement.

By leveraging these AI applications, educational institutions can enhance the learning experience, make administrative processes more efficient, and provide better support to both students and educators. However, it

is important to address ethical considerations and ensure that these technologies are implemented thoughtfully and equitably.

Impact of AI on media literacy

It is high time that educational institutions started embracing generative AI to streamline the learning process. Learning experiences can be customized by way of creating personalized learning paths, adapting content to suit different learning preferences, and providing targeted feedback to help students improve their performance. The grading process can be made automated and educators can be allowed to spend ample amount of time in the teaching process. Creation of educational content is very important which could act as a supplement to online or offline teaching. Generative AI can be used to create contents in the form of videos, simulations and assessments. This can drastically help to reduce the time and cost which would have otherwise been spent in creating the audio-video contents. Generative AI can also help in providing personalized career counselling to the learners based on their interests and goals. Thus, the widely used applications of AI in the field of open and distance education includes Intelligent Tutoring Systems, Adaptive Systems and Personalisation , Profiling and Predictions / Learner Analytics , Assessment and Evaluation , Affect Recognition / Affect Sensitive E-learning and Virtual Learning Environments. The educators in the field of education have to don various hats while discharging their duties. Some of these widely accepted and recognized roles are-

Acting as facilitators of learning

Educators can act as facilitators of learning by creating content and assigning grades. This would involve guiding and supporting learners throughout their academic journey and providing personalized feedback and support.

Acting as curators of learning resources

Educators could play an important role in selecting and curating learning resources like suggested readings, videos and interactive learning activities. Educators can also look into the quality of these contents.

Besides, the educators or the instructors act as assessors of learning by reviewing the feedback of the learners and providing insights and valuable suggestions to it.

Media literacy is basically the ability to access and analyze media messages as well as create, reflect and take action. In a world of 'infodemics' , it has become an essential skill that is required for distinguishing fact from fiction and credible sources from unreliable ones. AI tools has lent a helping hand in improving media literacy as is indicated in the following ways-

- Ability to Recognize Biased information and Misinformation
- Better understanding of the working of the media
- Ability to Evaluate the Credibility of Sources
- Improved Media Creation and Distribution

In short , AI tools can help individuals create and distribute media content more effectively.

Integrating Technology in open and Distance Education with Special Reference to Artificial Intelligence

Gone are the days when a student used to attend classes in a conventional mode whereby the main teaching aids were blackboard, chalk and duster. At that point of time oral and written communication were considered the main medium of communication. In ancient times, stories, folklore, histories and news were transmitted and maintained through oral communication. As time passed by, blackboard paved the way for smart board (interactive whiteboard) which is touch sensitive and operates as part of a system that includes a computer and a projector. In the 1970s, the Open University of UK transformed the use of print for teaching through specially designed, highly illustrated printed course units that integrated learning activities with the print medium, based on advanced instructional design. Electronic media like radio, television, social media, digital media, computer networks, digital photography etc. have changed the way people communicate.

Open and distance learning universities and institutions rely a lot on educational technologies to deliver learning content to the learners. It does not necessarily mean that such institutions are completely dependent on technologies for delivering support services to the learners. In most of the cases, blended learning approach is also being followed which uses a combination of both online and offline support services like counselling (pre and post admission counselling), teleconferencing, videoconferencing, online learning tools etc. Open and distance learning system has passed through three pedagogical approaches- Cognitive-behaviourism, social-constructivism and connectivism. Cognitive-Behaviorist (CB) models looked into the first generation of distance education system. It not only provided accessibility to education at lesser costs but also easy access and student freedom. Cognitive-behaviorism and social-constructivism theories claim that learning is an individualised thing- it occurs within a person. Connectivist approach emphasises on learning process along with what has been learnt. In the present context, considering the fact that ODL system has gained prominence, the information learnt and the importance of converting the information into knowledge process has made this approach all the more important for ODL. If we look at the Social-Constructivist Pedagogy of ODL, we will find that there is a link between two-way communication technologies and social-constructivist pedagogy.

With the development of web-based learning management systems in the mid-1990s, textual communication, although digitized, became, at least for a brief time, the main communication medium for Internet-based learning. Very soon , development of information and communication technology revolutionised the educational scenario to such an extent that information can be accessed at the click of a mouse. Augmented reality, virtual reality , mixed reality , blockchain technology and most recently artificial intelligence have had a profound effect on the way interaction takes place. Then, there is the Ubiquitous Learning Environment (ULE) which refers to that environment in which the learners can become totally immersed in the learning process. Devices such as Web Pads, Tablets, Personal Digital Assistants (PDAs) and Smart Phones are used in ULE. In fact, this form of learning environment is intended to allow the learners to pursue their different academic work anywhere and at anytime. Ubiquitous computing comprises of the technologies human computer interaction, wireless sensor networks, context-based computing, mobile computing, cloud computing, artificial intelligence, distributed computing, natural user interface, physical computing, virtual reality etc. Though the effectiveness of traditional classroom teaching aids like charts, maps, discussion boards , flashcards and slides has not come down, yet newer forms of technology have made the teaching-learning process more interesting and interactive. From web 1.0 (Static Web) to web 5.0 (Immersive Web), a massive transformation could be seen in the functioning of World Wide Web. It had changed the very face of global communication.

Founded as an academic discipline in 1956, artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. It is the theory and development of computer systems that are able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. Generative AI creates a wide variety of data, such as images, videos, audio, text, and 3D models. In recent years, AI has shown great potential in transforming various aspects of education, from personalized learning experiences to intelligent tutoring systems . ChatGPT , which stands for Chat Generative Pre-trained Transformer is one of the prime examples of Generative AI. One can log in to the site (www.chat.openai.com) and can type in any queries or get access to any answers .

So, we can see that artificial intelligence technology has taken the world by storm. However, there are certain underlying issues that needs to be addressed while making use of such technology. ChatGPT has found its maximum usage in science based courses like medical, engineering and bioinformatics. It helps the students to comprehend complex ideas and to enhance their learning ability. It

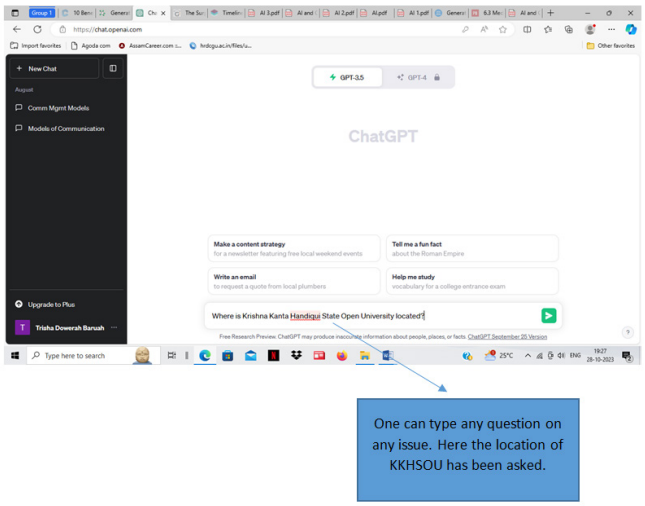

Figure 1: That any particular question can be typed in chatGPT

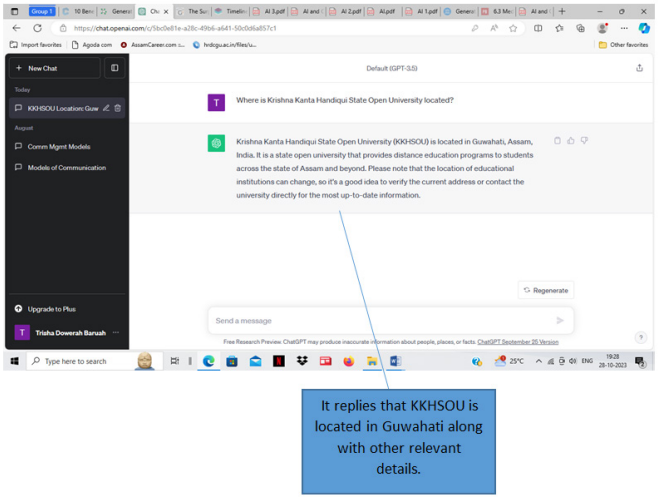

Figure 2: Answer to a particular question has been generated

provides personalized and adaptive learning experiences. When we talk about distance education, a lot of emphasis is laid in providing quality education and in reaching the unreached. However, it is easier said than done as it becomes difficult to reach out to the learners who reside in far flung places. Of course, technology has bridged the gap , yet a lot remains to be done. Feedback is an important component of any distance educational programme. This is because until and unless one understand the needs and preferences of the learners, it becomes extremely difficult to prepare a curriculum tailored to the needs of the learners in general and to the society as a whole. Then , there is the herculean task of generating content for lessons, preparing questions for home assignments, curriculum development and facilitating student-teacher communication. So, Generative AI helps in easing the burden on the teachers in preparing assignments and other self-learning materials. It has drastically reduced the time

needed in conceptualising course curriculum and other academic related activities. Prompts can be designed to obtain requisite information and data through ChatGPT.

Integrating ChatGPT and other AI tools into the folds of open and distance learning can indeed transform teaching and learning experiences, providing students and educators with opportunities for personalized feedback, content generation, curriculum development, and improved communication (Chen *et al*., 2020). Even then, extensive use of such technologies and tools raises significant ethical and practical concerns that must be looked into so that information can be utilised in a proper way . The potential of using AI tools like ChatGPT in distance education is immense. The COVID 19 pandemic threw open the doors for integrating different online learning platforms and technology in education . It had, in a way, contributed in developing a more adaptive, personalized and inclusive learning environment. Digital gap may also be reduced by using AI powered tools in the field of education. Everything depends on how the education community responds to such changes. Of course, the traditional modes of communication like classroom lectures, offline discussion sessions and presentations will continue to provide the basic guidance necessary for the learners. AI powered technology and tools are an added bonus to the learners and to the teachers as a whole.

Artificial intelligence has indeed made a headway in the field of open and distance learning. AI-driven tutoring systems provide students with instant feedback and guidance, simulating the role of a human tutor. Adaptive Learning platforms offer customized lessons and resources. Intelligent tutoring systems which are AI-driven provide instant feedback and guidance to the learners mimicking a human tutor. A learner who has enrolled into any academic programme is sometimes faced with a lot of queries regarding academic and administrative matters. Artificial intelligence helps in generating responses and provide instant feedback to the learners. Natural Language Processing tools can even translate educational materials into multiple languages, making content accessible to non-native speakers and supporting a more inclusive learning environment.

Interactive virtual classrooms will soon replace the age old conventional classroom teaching in the near future. Such type of classrooms can make distance learning more engaging and practical. Learners under open and distance learning system tend to fall behind owing to lack of regular contact with the educators or instructors. AI can analyze student data to identify those at risk of falling behind or dropping out. This allows educators to intervene early with targeted support and resources. AI powered tools can also serve as an important medium of communication for learners with disabilities. For example, speech to text and text to speech applications can help those with visual and auditory impairments engage with course materials. Artificial intelligence can also reduce administrative burden on the educators by streamlining administrative tasks like managing enrollment, scheduling and tracking student progress. Besides academic support, a learner also needs emotional and social support as well. Some AI systems can detect emotional states through analysis of text or voice, providing insights into student well-being and enabling timely interventions. There are a number of AI driven educational tools like virtual tutors, intelligent content recommendations, automated assessment systems, gamified learning platforms, chatbots, intelligent tutoring systems and Natural language processing (NLP) powered tools that are widely used in the field of education. According to a report by International Data Corporation (IDC) dated 4th September, 2023, Artificial Intelligence is expected to be critical in learning and education as the devices market exceeds $150 billion by 2027. United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Institute for Educational Planning (IIEP) and the Commonwealth of Learning (COL) have provided extensive support for research on AI governance in higher education and have played a vital role in the development of regulations, policies, and principles.

The UNESCO has highlighted the importance of AI in education and has stated that it can help in attainment of the Sustainable Development Goal 4 which is on 'Ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all'. Countries across the world have incorporated artificial intelligence within the educational system. Singapore is one such country with initiatives such as the "Smart Nation" strategy. It provides an AI-enabled companion to automate grading and provide custom feedback to students, including those with special needs. With technology becoming an integral part of the lives of the people , the "Smart Nation" strategy focuses on 15 important areas which are maintained by a number of apps – (i) streamlined reporting and tracking of municipal feedback (through OneService app) ; (ii) Dengue prevention at your fingertips (though myENv app) ; (iii) Improved public transit (through MyTransport.SG App); (iv) Empowering citizens to be first responders (through MyResponder App) ; (v) Holistic health management (through HealthHub) ; (vi) Enhanced school-parent communication (through Parents Gateway App) ; (vii) Streamlining of Government digital services (though LifeSG) ; (viii) National Digital Identity (through Singpass) ; (ix) Enhanced digital payment experience (through SGQR) : (x) User-friendly parking solutions (through Parking.sg App) ; (xi) Smarter estates (through Smart Parking System) ; (xii) Encouraging water conservation (through Smart Water Meters) ; (xiii) Protective monitoring (through drones and robots); (xiv) Timely weather updates (through myENV App) ; and (xv) wellness simplified (through Healthy365 App) .

With an aim to providing personalised and deeper learning, South Korea has introduced AI in education. Accordingly, AI digital textbooks are used to boost "eLearning" and "smart learning". They also adapt homework and assignments based on students' educational level and learning behaviour. The South Korean government had announced a budget allocation of $70 million to enhance education digital infrastructure within schools. This initiative aims to support the integration of Artificial Intelligence (AI) digital textbooks, which are set to be fully implemented by 2025. The investment is expected to facilitate the construction of digital device laboratories, improve network reliability, and establish an integrated control system for learning data hubs.

Researchers are increasingly using AI in an open way to build adaptive tutoring systems to help teachers differentiate instruction and students learn math and other subjects. One such team in BSE's Computational Approaches to Human Learning lab at the University of California, Berkeley had developed a tutoring tool called Open Adaptive Tutur (OATutor) that was released in 2023. An open-source system, the tool has potential to powerfully assist research in the use of AI in learning scenarios. Just like UC Berkeley, University pf Michigan launched U-M GPT, a homebuilt generative AI tool before the fall 2023 semester, that now boasts between 14,000 to 16,000 daily users. When universities offer their own version of ChatGPT , it allows faculty and staff to use the technology without the concerns that come with OpenAI's version. Even Washington University jumped into the bandwagon by launching "WashU GPT" in 2023. These tools were built using Microsoft's Azure platform, which allows users to integrate the work into their institution's applications.

Ethical Concerns in using GenAI by Specifically Focusing on ChatGPT

Ethics is the study of standards of conduct and moral judgement that is what is good for an individual as also for society at large. Ethics comprises a huge part in every field of life and that includes the proper use of technology for the betterment of the society. As we can see from the above discussion, ChatGPT , in a way , has changed the way information is processed.

Using ChatGPT in distance education offers several notable benefits. ChatGPT can provide support and provide answers to relevant queries at any time, making learning more flexible and accommodating diverse schedules. AI can provide resources to the learners tailored to their needs. In fact, it acts as a kind of personalized learning. Learners can also use ChatGPT for additional help outside of regular class hours, reinforcing concepts and providing explanations for difficult topics. This particular tool can also provide immediate feedback on assignments or questions, allowing for quicker learning adjustments and improvements. Besides, it can also provide assistance to the educators to generate quizzes, study material and other lesson plans. Non-native speakers might face issues with language-related queries. In such cases, chatGPT can go a long way in making content more accessible and in improving language skills. The biggest advantage of such a tool is that it can handle large volumes of queries simultaneously, making it easier for institutions to scale their support without significantly increasing staff. In short, it is cost effective, helps learners develop literacy and critical thinking skills and offers diverse learning resources.

Having said that, there is a certain section of the academicians who have voiced concerns on the possible negative effects of ChatGPT on academic integrity.

Misinformation

In this age of Information and Communication Technology people are bombarded with so much of information that it is possible to be overwhelmed leading to confusion. So, one must use one's judgement to distinguish between right and wrong. Misinformation and disinformation are frequently seen when it comes to accessing online news. For a learner pursuing any academic programme under ODL mode, he or she would feel tempted to get access to information without verifying the contents. Many a times, they would loathe to verify the contents as it can be time consuming to a few. So, they tend to take in whatever information is provided to them without going into the depth of the learning resources. In one such news story (dated June 13, 2023, website : https://decrypt.co/144281/un-united-nations-ai-deepfakes-hate-misinformation) the United Nations had cautioned over AI-generated deepfakes being used to spread hate and misinformation on social media. In a report released by the organisation, "Information Integrity on Digital Platforms," the global organization underscored the need for responsible AI use.

"While holding almost unimaginable potential to address global challenges, there are serious and urgent concerns about the equally powerful potential of recent advances in artificial intelligence—including image generators and video deepfakes to threaten information integrity," the UN report said.

In another such case, (https://www.bbc.com/news/world-us-canada-65735769) a New York lawyer had to appear for a court hearing of his own after his firm used an example of a legal case that did not exist from the AI tool ChatGPT.

Biased Information

Most of the AI systems are trained by humans in the present day context. If biased data is being fed into the AI system, it can lead to unfair and discriminatory treatment of learners. For instance, an AI system which is used for grading essays may be biased against certain groups of students. This can only happen if the AI system is trained on a biased dataset. Biasness may reduce the accuracy

and validity of assessment. Since assessments and grading are an essential part of any distance learning curriculum, so biased information is likely to make the assessment process a cumbersome one.

Issue of Privacy

There is every possibility of a student's privacy being compromised and invaded as one's personal data may be collected and used by AI systems. Thereby, different educational institutions should put into place clear policies and safeguards in order to protect students' privacy and prevent unauthorized access to their data. This is a matter of grave concern not only for distance educational institutions but also other conventional ones.

Issue of Autonomy

Many a times, AI systems may interfere with the autonomy and agency of students and teachers, thereby affecting their ability to make informed choices and exerting control over their learning processes. Since most of the learners under ODL system reside in far flung places, so they need certain time and space for engaging in learning activities as per their convenience. If, however, they have to study under controlled environment then it would hamper their studies. For instance, AI systems may give certain forms of feedback that might not be in tune with the learners' interests. Autonomy might limit the participation of the learners and make them feel demotivated.

Problem of Transparency

AI systems may function in certain ways that are quite difficult to comprehend by the different stakeholders. When such a situation arises, it might question the authenticity or the ability to trust the outcomes of AI systems. ODL institutions are accountable to the society and hence are answerable to the general public. If transparency is not maintained, then people will obviously question its validity.

Question of Accountability

Another ethical concern that is worth knowing here is the question of accountability and responsibility. In certain cases, AI systems may cause harm or errors that are not attributable to any specific human agent.

In light of the above concerns, it becomes all the more important to address the ethical aspects to it. Besides, there are other issues related to the use of AI in the field of education. Too much of reliance on AI tools might debar the learners from exploring genuine learning resources. Even while writing assignments , they will feel the urge to type in the key words and get the resultant answer in a matter of seconds.

The Road Ahead

The question that arises here is how one can address the ethical issues of AI in education specially in the field of open and distance learning. This is not something that can be done within a fortnight. It requires a multi-stakeholder approach in which the educators, policymakers, researchers and developers should collaborate together. A few of the probable ways in which this can be achieved are as follows-

- Developing ethical frameworks and guidelines: Ethical frameworks and guidelines can guide the ethical design, development, deployment, use, and impact of AI in education. UNESCO , for example, has published the first-ever global standard on AI ethics – the 'Recommendation on the Ethics of Artificial Intelligence' in November 2021. One must also engage with ethical AI communities like AI Ethics Lab and Montreal AI Ethics Institute.
- Implementing ethical practices and standards: Ethical practices and standards must be implemented to ensure the ethical performance and behaviour of AI systems in education. Data quality assurance, algorithmic transparency, human oversight and intervention, privacy and data protection policies, etc. are some of the ethical practices and standards that can be implemented.
- Awareness generation about ethical concerns: Learners, teachers/instructors and other stakeholders must be aware of the different ethical aspects to the proper utilisation of AI in the field of education.
- Strengthening ethical governance and regulation: Ethical governance and regulation can provide a legal and institutional framework to ensure the accountability and responsibility of AI actors in education. Laws and regulations, codes of conduct, ethics committees, complaint mechanisms, redressal mechanisms, etc. are a few of the steps that can be used or implemented to strengthen ethical governance and regulation.

To maximize the benefits of ChatGPT and AI in distance education, stakeholders and educators can adopt several best practices. Stakeholders should establish clear guidelines for the ethical use of AI, including data privacy, academic integrity, and accessibility. Efforts must be made to invest in robust technological infrastructure to ensure reliable access to AI tools, especially in underserved areas. Training programs must be provided for educators on effectively integrating AI tools into their teaching practices and curricula. Regular assessments of AI tools' effectiveness, including student feedback and academic performance metrics, to ensure continuous improvement must be done. Efforts must be made to engage with AI experts and educational technologists to stay updated on best practices and advancements in AI tools.

Educators must set expectations for students on how to use AI tools responsibly, emphasizing ethical considerations and academic integrity. Assignments must be designed in such a way so it will enable the students to

critically evaluate AI-generated content. Educators can create interactive sessions where students can engage with AI for brainstorming ideas, problem-solving, or generating discussion topics. Lessons on digital literacy can be incorporated. Collaborative projects can be facilitated that use AI tools, helping students learn to work together while leveraging technology.

By implementing these recommendations, stakeholders and educators can enhance the effectiveness of AI tools like ChatGPT in distance education, ultimately improving student outcomes and learning experiences.

Conclusion

As we move towards web 6.0, our priorities have changed- the way we impart learning to the learners have changed. No matter how much of advanced technology we use, how much of the course content we develop, if the learner is unable to comprehend the matter, then the entire exercise will go in vain. So, a proper plan must be in place in order to lay down a learner friendly technology-enabled learning system. The day won't be very far when a networked community connecting all the learners, instructors and stakeholders belonging to the ODL system will come to fruition. Content that is generated through artificial intelligence should be transparently marked as machine-generated to avoid misleading users. Strong regulations and guidelines must also be in place in order to prevent the malicious use of AI for misinformation or fraud.

AI is a valuable tool for supporting education more specifically distance education. However, it should not be used to replace human teachers altogether. Teachers are necessary for motivating and fostering critical thinking among the learners. Learners should have access to both the teachers as well as AI backed learning resources . It is imperative to identify the loopholes that is necessary for operating the technology in a smoother way. Whether one tries to incorporate such technology within the folds of education is a matter of choice, however it is expected that the instructor must keep himself or herself updated about the latest technologies so as to provide the best possible learning experience to the learners.

Generative AI like ChatGPT have brought in a sea change in the way information can be generated and procured through machines. However, this does not mean that such technologies have replaced the traditional method of providing offline counselling classes. Rather, it has acted as a supplementary tool to the traditional forms of support services. It is expected that with the passage of time, newer technology will have a bigger impact on the way teaching-learning takes place.

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