# Ethical use of Artificial Intelligence (AI) in Curriculum Transaction

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**Abstract:** Artificial intelligence (AI) is the means of revolutionizing the field of education. More specifically, the process of curriculum transactions is being influenced by the new generation technology of AI. It is providing vast options of interaction between teacher and taught. The other stakeholders of education system are also getting benefitted by the application of AI. However, it deserves mention that some unethical practices by which the stakeholders including learners can get harm with the applications of AI. Therefore, framing and implementation of relevant laws, and continuous supervision to ensure ethical use of AI in education is the need of the hour. This article describes some of the key ethical issues related to the use of AI in curriculum transaction. In addition, some ideal ethical practices have been recommended to ensure skilful applications of AI to provide standard educational services.

**Keywords:** AI, Curriculum, Transaction, Ethics, Education.

## Introduction

Artificial intelligence (AI) is transforming every sphere of life including education. It is providing new opportunities to enhance curriculum-transaction including teaching - learning, instruction strategies, assessment techniques (1). For both teacher and taught, it is important to understand and familiarize with the applications of generative artificial intelligence tools to incorporate them in regular classroom transactions (2). Use of AI is undoubtedly offering increased access to education and equity. Despite the revolutionary effects of AI in curriculum-transaction, the ethical challenges of AI application must be analysed critically. Involvement with generative AI tools means using an insightful, complex, and ethical monitoring system to decide whether their use will enrich the educational activities like assigning projects, assessment techniques and so on in regular set up (3). Additionally, the independent involvements of students and teachers in maintaining productivity and academic integrity need to be assessed in terms of ethical issues. Use of AI is offering increased access to education and equity through better curriculum transactions.

## Brief Concept of Artificial intelligence (AI)

AI refers to computer systems able of performing complex tasks that traditionally only a human subject could carry out, like reasoning, making decisions, or solving problems. Today, the term "AI" includes a wide range of technologies that power many of the services and goods people use in day-to-day life, including the apps that recommend tv shows to chatbots that provide customer support in real time.

Artificial intelligence is generated by the simulation of human intelligence processes by machines, especially computer systems. Examples of AI applications include expert systems, natural language processing (NLP), speech recognition and machine vision.

The term AI is commonly used to describe a range of different technologies which are in use today. Many disagree on whether these constitute artificial intelligence. Instead, some say that much of the technology used in the real world today actually constitutes highly advanced machine learning that is simply a first step towards true artificial intelligence, or "general artificial intelligence" (GAI).
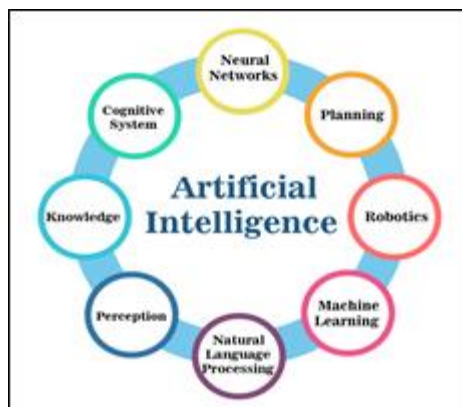


**Brief Concept of Curriculum Transaction (CT)**

The process of CT involves planning and organizing the curriculum content in a specific field, designed at different levels of education (6). The term CT also incorporates continuous monitoring of steps of curriculum implementation (7). This process emphasises the effective and desired way of implementation of the curriculum contents on the basis of aims and objectives mentioned in the curriculum. Curriculum Transaction incorporates effective planning for providing learning experiences for its learners, organization of planning, administration, and implementation of the organized planning and evaluation of the implementations by the stakeholderds og education system, namely, teachers and learners in the relevant field.

➤ **Modes of Curriculum Transaction:**

The modes of curriculum transaction can be classified as face-to-face mode and distance mode:

**1. Face-to-Face Mode:**

The instructional interactions where the learners and the teacher interact and transact the curriculum content by facing each other is known as face-to-face mode. This mode includes interactions including seminars, discussions, lectures, demonstrations and any activity involving direct interaction between the teacher and taught. The face-to-face mode is the traditional and most widely practised mode of transaction (8).

In reality, at the time when the infrastructure of electronic media were not available and even the print media was underdeveloped, the most easily accessible and effective means of transmission of knowledge and for communication was through face-to-face mode.

**2. Distance Mode:**

The curriculum transaction by distance mode, as the term indicates, refers to all kinds of interactions between the teacher and the taught in which they stay away and contact with one another by a channel or medium of contact. This mode includes print, audio, video, and electronic mode of communication (9). Open learning systems generally utilize such modes. Due to the case of indirect contact or the distance between the teacher and learner, none of these media can by itself sufficient to make effective communication.

This mode therefore is used as additional means of contact where face-to-face interactions between teacher and learners acts as the primary mode of curriculum transaction. Later, more interactive medium has been designed and implemented, such as interactive satellite television or teleconferencing. The two modes need not be mutually exclusive (10). The distance mode plays significant role in correspondence education. It acts in this case as an alternative to 'teacher talk' in India, with increased availability of printing facilities.

The correspondence education widened with the emergence of open learning system, consequently, the media of transaction were diversified into audio, visual and audio-visual mechanisms. More recently, interactive television has come into the picture as a means of communication of knowledge. The use of media has resulted in new assignments for the teachers: resigning and developing the learning materials for instructional purposes and storage of information (11).

**Objectives**

The current study is made

To identify the ethical issues of AI in education.

To find the means of balanced use of AI in curriculum transaction.

**Methodology**

A large volume of data has been searched from reliable sources including Scopus, PubMed etc. A systematic analysis of all the acquired information was made to develop the overall concept of the topic.

**Discussion**

The available body of knowledge can be discussed under the following points:

➢ **The Ethical Concerns of the Use of AI in Curriculum Dissemination**

Despite the revolutionary effects of AI in curriculum-transaction, the ethical challenges of AI application must be addressed carefully by different stake holders of education field like educators, policymakers, researchers, and developers.

There are many questions on ethical use of AI, including the ethical design, development, use, and evaluation of generative AI in teaching and learning. While applications of AI may potentially revolutionise the educational services, the concerns and sensitivities surround several key ethical issues related to its application as discussed in the following section:

1. **Privacy and data protection:** AI systems can efficiently collect, store, process, and share large amounts of data. However, in the process of doing so, it may preserve personal and sensitive data of students and teachers like academic achievements, behaviour, likes and dislikes, emotions, biometrics, or health information. This may cause risks of privacy and data protection rights, especially if that data is used in purposes apart from education, like commercialization, surveillance, and profiling.

2. **Bias and discrimination:** AI systems can influence and amplify human biases and prejudices which may lead to unfair or discriminatory outcomes for stakeholders such as some groups of students and teachers. For example, AI systems may use data that is incomplete, inaccurate, or unrepresentative of the diversified natures of learners. Sometimes, AI may apply algorithms that are not at all transparent or accountable for decision making.

3. **Transparency and explain ability:** The operation system of AI may sometimes be opaque or complex which causes difficulty in understanding or questioning by students, teachers, or other stakeholders. This may be the source of their questions regarding the ability, trustworthiness of the actions or outcomes of AI systems. For example, AI systems may use black-box algorithms that do not disclose how they reach their conclusions and predictions.

4. **Accountability and responsibility:** AI systems may raise questions about who is accountable or responsible for their design, development, deployment, use, or impact in curriculum-transaction. This may create distance and ambiguities in the distribution of roles and responsibilities among different stakeholders involved in the AI ecosystem. For example, AI systems may be responsible for harm or errors that are not attributed by any specific human agent.

5. **Autonomy and agency:** AI systems may interfere or influence the autonomy and agency of students and teachers which in turn may affect their ability to make informed choices, exercise control over their learning processes, express their creativity, or develop critical thinking skills. For example, the recommendations or feedback, provided by AI systems may not be aligned to the learners' goals, interests, or values, or they may substitute human interaction and guidance with automated machine-generated responses.

6. **Environmental impact:** The AI tools are trained with ever larger data sets which require large amount of energy sources for consumption. This excessive consumption of energy resources may have adverse impact on the environment.

➢ **Importance of Addressing the Ethical Issues of AI in Curriculum-Transaction**

Addressing the ethical issues of AI in curriculum-transaction is important for various reasons as stated below:

1. **Protection of human rights and dignity:** The ethical issues of AI in CT may affect the fundamental human rights and dignity of students and teachers. Biasness and discrimination may violate the right to education. Privacy and data protection may violate the right to privacy. On the other side, autonomy and agency may violate the right to freedom of thought and expression. Transparency and explain ability may violate the right to information. Accountability and responsibility may violate the right to remedy of the stakeholders.

2. **Ensure quality and effectiveness:** The ethical issues of AI in education may affect the quality and effectiveness of educational processes and outcomes. Bias and discrimination may decrease the accuracy and validity of assessment procedure. Privacy and data protection may undermine the trust and confidence of learners, the valuable stakeholders. Autonomy and agency may act as obstruction to motivate and engage the learners. Transparency and explain ability may impair the feedback and guidance of learners where as accountability and responsibility may compromise the evaluation and improvement of learning techniques

3. **Ensure foster inclusion and equity:** The ethical issues of AI in education may affect the inclusion and equity of educational opportunities and benefits. Bias and discrimination may enhance existing inequalities and marginalization. Privacy and data protection may expose the vulnerable groups of learners for exploitation or harm. Autonomy and agency may restrict the participation and empowerment of learners. Transparency and explain ability may create asymmetries or gaps in information. Accountability and responsibility may pose the burden or blame to learners.

➢ **The Ways to Address the Ethical Issues of AI in Curriculum-Transaction**

Addressing the ethical issues of AI in curriculum-transaction is a complex area of concern. It needs a comprehensive multi-stakeholder approach that ensures collaborative involvements of various stakeholders like educators, policymakers, researchers, developers, learners and other factors in the AI ecosystem. Some of the possible effective measures are discussed below:

1. **Development of ethical frameworks and guidelines:** Ethical frameworks and guidelines can provide effectively a common goal and a set of rules and values to guide the areas of ethical design, development, deployment, utility, and impact of AI in curriculum-transaction. For instance, UNESCO has published the first-ever global standard on AI ethics namely, 'Recommendation on the Ethics of Artificial Intelligence' in November 2021.

2. **Implementation of ethical practices and standards:** Ethical practices and standards can actualize the ethical frameworks and guidelines into concrete action-oriented measures to ensure the ethical performance and behaviour of AI systems in curriculum-transactions. The ethical practices and standards can incorporate data quality assurance, algorithmic transparency and explain ability, privacy and data protection policies, human oversight and intervention, impactful assessment and evaluation techniques, participation of stakeholders and consultation of experts.

3. **Promotion of ethical literacy and awareness:** Ethical education and awareness can raise the ethical competence of students, teachers, and other stakeholders in the AI ecosystem. For instance, ethical literacy and awareness can include integration, professional development, public engagement, media literacy, digital citizenship, etc aspects in curriculum of a specific educational standard.

4. **Strong ethical governance and regulation:** The governance and regulation of ethical aspects can offer a legal and institutional platform to ensure the accountability and responsibility of AI contributors in the field of education. The ethical governance and regulation can include implementation of laws and regulations, codes of conduct, ethics committees, oversight bodies, complaint mechanisms, redress mechanisms, etc.

**Conclusion**

The application of AI in curriculum-transactions undoubtedly is offering great potential in teaching and learning, and thereby promoting the standard of education. However, there are many ethical issues, promoting significant challenges in front of the stakeholder. These challenges need to be carefully analysed and addressed. Development of ethical frameworks and guidelines, implementation of good ethical practices and standards, promotion of ethical awareness, and formulation of ethical governance and regulation, it can be ensured that application of AI in curriculum-transaction is the need of the hour. Such careful attempt of monitoring and surveillance can ensure education for the good of humanity, individuals, societies, and the environment. National policymakers, institutions, and all individual members of the academic community need to seek ways on the ethical use of AI and share best practices to benefit from the opportunities that AI brings to educational services.

**References**

1. Antoniak, M. (2023). Using large language models with care - AI2 blog. Medium. https://blog.allenai.org/using-large-language-models-with-care-eeb17b0aed27

2. De Vynck, G. (2023). ChatGPT maker OpenAI faces a lawsuit over how it used people's data. Washington Post. https://www.washingtonpost.com/technology/2023/06/28/openai-chatgpt-lawsuit-class-action/

3. Dwivedi, Yogesh K. et al. Opinion Paper: "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges, and implications of generative conversational AI for research, practice and policy, International Journal of Information Management, Volume 71, 2023, 102642, ISSN 0268-4012, https://doi.org/10.1016/j.ijinfomgt.2023.102642.

4. European Commission, Directorate-General for Education, Youth, Sport and Culture, Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2766/153756

5. Frąckiewicz, M. (2023). OpenAI and the Risks of AI Bias: Addressing Stereotypes and Discrimination. TS2 SPACE. https://ts2.space/en/openai-and-the-risks-of-ai-bias-addressing-stereotypes-and-discrimination

6. Experiential Learning Models, Methods, Principles, & Practices. Retrieved Mar 15, 2021, from https://www.outlife.in/experiential-learning.html

7. Hough, J.B. & Duncan J.K. (1970). Teaching: Description and Analysis. United Kingdom, Addison-Wesley.

8. Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.

9. Learner-Centred Teaching Techniques. Retrieved Mar 10, 2021, from https://pbea.agron.iastate.edu/plc/learner-centered-methods/learner-centered-teaching-techniques

10. Methods and strategies of teaching. Retrieved Mar 10, 2021, from https://www.slideshare.net/jerincissac/methods-and-strategies-of-teaching

11. Moore, J. W., & Smith, W. I.(1962). Programmed Learning. London: D. Van Nostrand Co. Ltd.

12. Personalised system of education. Retrieved Mar 15, 2021, from https://www.slideshare.net/athiravimalkumar/personalised-system-of-education

13. Rather, A.R (2004). Essentials of Instructional Technology. New Delhi: Discovery Publishing House. Pvt. Ltd.

14. Teaching & learning. Retrieved Mar 10, 2021, from https://citl.illinois.edu/citl-101/teaching-learning/resources/teaching-strategies/group-learning

15. Gašević, D., Siemens, G., & Sadiq, S. (2023). Empowering learners for the age of artificial intelligence. Computers & Education: Artificial Intelligence, 4, 100130. https://doi.org/10.1016/j.caeai.2023.100130

16. Uzzi, B. (2020, November 4). A simple tactic that could help reduce bias in AI. Harvard Business Review. https://hbr.org/2020/11/a-simple-tactic-that-could-help-reduce-bias-in-ai

17. European Commission (2018). Artificial Intelligence for Europe. European Commission. Brussels. https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2018:237:FIN

18. Levene, A. (2023) Artificial intelligence and authorship. COPE. https://publicationethics.org/news/artificial-intelligence-and-authorship

19. Tauginienė, L., Gaižauskaitė, I, Glendinning I, Kravjar J, Ojstersek M, Robeiro L, Odineca T, Marino F, Cosentino M, Sivasubramaniam S, Foltynek T (2018) Glossary for academic integrity. ENAI report (revised version), October 2018. Available Online. URL - https://www.academicintegrity.eu/wp/wp-content/uploads/2023/02/EN-Glossary_revised_final_24.02.23.pdf