Artificial Intelligence in Teaching Languages and Social Sciences

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Abstract
Educational Technology is not a new phenomenon in helping the success of the curricular aspects. Though there were myriad apprehensions when the introduction of the Computer Based Instruction (CBI) was initiated, later it was conveniently adopted as the part of the educational ecosystem which is perceived to be the catalyst in enhancing the quality of information and teaching methodology to cater to the growing educational needs. Similarly, artificial intelligence (AI) is emerging in different fields, despite the concerns on the possibilities of downsizing the human capital and the absence of emotional aspect, especially in teaching. It would be beyond any reasonable doubt that AI will have a profound impact on improvising the instruction, and material. The advent of AI and its impact on the education sector needs to be calibrated cautiously by thinkers, psychologists, and policymakers. The digital divide, as the fundamental challenge, to what extent a developing nation like India can afford and democratize the AI in the education sector. What will be the future of teaching languages if AI is considered to be a game-changer and steps are taken towards adopting it? In the light of these fundamental questions, the present study discusses the challenges and opportunities offered by AI inn language teaching.

<u>**Keywords:**</u> Language Teaching, Artificial Intelligence, English Language education, and ICT tools

<u>**Introduction**</u>
Educational Technology, as termed as the process, identifies the problems related to instruction, explores the problems of evaluation, and examines the success of educational outcomes.
The usage of educational technology can be traced before the advent of Radios and televisions. Pictures and films were important tools in pedagogical practices for a considerable period. But during World War II, the major thrust was placed upon education to fulfil the needs of military and vocational training. Thus the full-scale integration of technology into education was realized. The significant changes took place in the 1960s. The researchers in the field of educational technology were encouraged with funding in the USA to cater to vocational and military needs. Parallel to these developments, computer science and technology was emerging by providing various computer-based applications in creating space for Computer Based Instruction (CBI). Illinois University developed more than 1600 lessons using computers with PLATO (Programmed Logic for Automatic Teaching Operations).
 The PLATO system inspired many other projects related to computer-based instruction, which continued till the recent past. As a part of computer science, a branch of the Educational Computing Program was also evolved to a greater extent.
John Dewey, a renowned educational thinker, emphasised technology in education. Many educational thinkers continued this legacy and could show a positive side of the role of technology in education. The development of science and technology also facilitated a momentum to this phenomenon.
Robert Heinrich and Silverman conducted several surveys on the development of educational technology. They define educational technology as the "process". Taking this definition ahead, Silverman includes some essential procedures involved in the execution of educational technology.
He opines that educational technology creates an interface between the procedure and devices.
Constructive educational technology is more fundamental; it deals with:
1. Understanding the problems involved in the
2. Deciding the appropriate parameters to measure the instructional outcomes thereby determining the success of the curriculum.
3. Integrating the methods and techniques into the device to acquire the desired goals.
To amplify the optimistic side of this argument, educational thinkers categorise technology into good and bad. And caution the critique on the phenomenon of educational technology must be based on good technology. They further

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argue that Integration of good technology will be undoubtedly helpful in instruction, providing material, and evaluation, by facilitating the teacher to facilitate cognitive activities, and time to address the individual student's learning issues. Freeing the teacher from mundane activities which can conveniently be addressed with technology will have a positive impact on the holistic growth of the student and will benefit the cause of the larger good of society. And bad technology will certainly have innumerable negative effects.

Literature Review

(Ennals, 1982).Argues that Classes of history can be taught by Artificial Intelligence (AI). AI can offer multiple detailed ideological frameworks and wealth examples in the history class. Conclusions, explanations and predictions can be generated as per the classroom needs. He also expresses his satisfaction while using PROLOG in teaching history classes.

(Balajthy, 1985) is of the opinion that computers cannot replace teachers. By citing the work of Koetke (1984) of Scholastic Software, it was argued in the study that, use of AI was a mere commodification of education through educational software's which will potentially isolate the learners from the human contact of teachers and peers. However, technology can be tapped for educational purposes which can be handy for the teachers and learners.

(Roth G. &., 1986) This study is of the firm opinion that technology in vocational education is inevitable. And the availability of this Technology also varied in different powerful applications. Therefore, the teachers need to integrate AI technology in their curriculum to smoothen the teaching-learning practices. Every new change should be welcomed in the field of educational technology; the passive reaction of the teachers towards technological integration into education may weather away from their job prospects.

(YAZDANI, 1986) Organised a conference on AI and Education in 1985. It was expressed in this report that the researchers in this conference expressed their positive attitude towards AI in the field of education as it can enhance the quality and quality of information that can be disseminated effortlessly.

(Dear, 1986) This study attempts to historicise the Computer Based Instruction (CBI) in which the emergence of AI in 1970 was discussed. This study observes that though the prime area of AI is intelligent tutoring systems (ITS), it broadened its horizons of research by focusing on producing the courseware which can do the job of authors of course developers.

(Roth G., 1987) These studies are of the opinion that technology education and information economy both are complementing each other. This study recommends the teachers and learners aggressively adopt the technology for better learning outcomes.

(Tennyson, 1987) The ability of computer science was identified to be beyond calculations which were termed AI in the late 1960s. In the early stages, the focus of AI was limited to natural language dialogues, pattern recognition, and action rule databases with the help of heuristics methods.

(Nelson, 1989) This paper primarily deals with the factors that determine the critical knowledge and methods disseminating the instructional designers need to depend on the subject experts. And how the knowledge obtained from the experts is encoded in computer language.

(Coughlin, 1990) This paper deals with Computer Assisted Language Learning (CALL). This paper argues that AI can individualize the learning process, and the use of NLP would suggest the learners the appropriate options to use rather than showing all the available options.

(Perez, 1990) Designing the instruction modules based on the cognitive model demands categorical details, in other words, the cognitive framework of the knowledge and mental process of the teachers should represent through a software application.

(Devedžić, 2004) This study briefly talks about Web Intelligence (WI) related to Artificial Intelligence in Education (AIED) research. Some of the key components of WI have already attracted AIED researchers for quite some time – ontologies, adaptivity and personalization, and agents.

(Xie, 2021) AI has been introduced into teaching-learning processes, and it has been proved to be very effective. This research was contributed by 12 researchers who examined the impact of AI in teaching and learning.

(Yang, 2021) In this speech, it was emphasized precision education, which is useful in identifying the students at the risk and providing timely intervention. To achieve precision education the paradoxes between cold technology and warm humanity need to be achieved. In this process, AI can be very useful.

(Chen, 2021) Personalized language learning (PLL), instruction developed by AI can cater to the needs of the learners as per his/her personal choice.

(Murphy, 20196) It has been predicted in this study that AI can change the face of the education sector dramatically. The method of instruction, the role of the teacher, and the learning of the students can be drastically influenced by AI.

Research Gap

The success of computer-based instruction attained accurate results. However, the teaching languages require the

integration of day to day linguistics requirements based on the needs and situations. Therefore it would be interesting to examine the functioning of AI in teaching languages and to what extent the big data can cater to it. As it is described in the literature available related to AI in education, the pattern of the information and the methodology developed by the teacher will be mapped and encoded into computer programming, to what extent the instructional module prepared out of it would be efficient in addressing the learners' needs.

The impact of AI in the usage of human capital has been one of the important concerns. Because whenever there has been an argument related to the invention of technology in any sector, there were concerns related to downsizing the human capital. If it all reducing the human capital is thought to be the need of the hour due to adopting the AI, it will have a disastrous impact on the economic inequalities. Especially in populous nations like India, where disguised unemployment is prevalent, will be threatened if downsizing the human capital becomes an essential part of this exercise. The usage of artificial intelligence might be started in advanced nations. Technology cannot be restricted to those nations all the time since the technology can be percolated because of the market available in Indian in the form of the growing needs of a large scale population. However, studies are found to be minute on the impact of AI in the educational sector in India. Therefore, the understanding of this phenomenon remained to be remote for the academicians, thinkers and policymakers.

Innovation

How the teaching modules designed by AI technology will be helpful for the learners in meeting their learning needs, to what extent they will be able to acquire and internalise the learning in this model. How the language proficiencies of the learners will be enriched through an AI technology-enabled learning environment. Findings related to the attitudinal and behavioural changes of the learners in AI technology-enabled language classroom offer insights into its success. These learners oriented comparative results will show more significant implications to the process of being instructed and actualising their learning goals.

Question of Relevance

Issues in teaching languages, especially the attitude and political choice of the teachers, determine the very nature of instruction, thereby influence the learners in embracing the ideologies. However, the machines are ideologically and politically neutral tools. This is where the whole gamut of discussions explore the possibility of not only encoding the knowledge and method of imparting knowledge but the ideological viewpoints of the teachers. As per various theoretical frameworks, language teaching also does not remain an isolated practice from the ideologies and political choices of the instructors. Therefore, the emergence of AI technology in education and its subsequent entry into teaching languages offers a reasonable amount of curiosity in understanding its procedure and gauging its effects.

Advantages

India is a populous country, and the institutionally enabled learning sources are limited for many students from various socioeconomic backgrounds. Technology as the gamechanger, revolutionise the teaching and learning practices.

1. Democratising the knowledge will be the essential expected effect with the advent of AI technology in teaching. Every expert on a subject matter may be made available for every learner from any corner of the country for an effective learning experience. These possible positive points will be popularised for the larger good of society.
2. The introduction of AI technology may unburden the teachers from unproductive activities. Therefore, the new space created may be scientifically curved out for Engaging teachers in many essential roles in identifying the emerging needs of society and encouraging them to use their expertise in offering viable solutions.
3. This study unveils a reasonable dialogue on human-machine interaction and achieving harmony in society. The relationship between technology and humans will be promoted as the complementing element by addressing all the concerns that emerge in the new ecosystem.

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