



Artificial Intelligence Role in Enabling apprehensive Education: Adaptive instruction for Varied Learner's demands

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Abstract

Despite increasing attempts to the comprehensive instruction, old-style teaching way regularly fall short related with all learners the different requirements. This gap hinders equitable learning chances, particularly for learners with incapacities or distinctive learning methods. Artificial Intelligence (AI) presents important possibility for personalizing instruction, improve approachability, besides sustain adaptive learning settings. This paper exploring Artificial Intelligence role in enabling comprehensive instruction, purposing to recognize active Artificial Intelligence -driven tactics that provide to different learner demands.

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1. Introduction

Artificial Intelligence (AI) is progressively recognized as a transformative force in instruction, particularly in promotion integration for different learners. By utilizing Artificial Intelligence technologies, instructional systems could present modified learning skills provide to the distinctive demands of each student, included those with incapacities or learning variances. This paper exploring the complicated Artificial Intelligence role in comprehensive instruction, focusing on adaptive teaching way addressing the diverse of the learner's demands, such as disabled differences of learning besides diverse cultural or linguistic experiences, AI presents powerful tools for enhancing and personalized and adaptive learning skills. These technologies could analyze massive learner data amounts in the real time, supporting teachers besides the digital methods to recognize strengths individual of learner, favorites also challenge. Centered on these perceptions, Artificial Intelligence could with dynamism modify the content, step, in addition to teaching plans for improved sustenance to each student's journey.

The comprehensive education conception focuses on guaranteeing that the whole learners, irrespective of their capabilities or situations enjoying equitable access to quality learning chances. Models of old education style regularly attempts to fulfill this objective according to the less resources, inflexible curricula, besides general instruction approaches. Nevertheless, with the AI integration, there is novel possibility for designing educational settings represented by flexible also responsive. From intelligent teaching methods besides software of speech recognition for predicting analytics also processing of natural language, Artificial Intelligence uses could overcome learning obstacles which are historically excepted lots of learners.

The current research exploring the complicated Artificial Intelligence role to support comprehensive instruction. It investigates the way Artificial Intelligence-driven adaptive instruction methods personalize teaching, the manner in it Artificial Intelligence backings students with exceptional demands, besides the ethical deliberations complicated in its application. By concentrating on the Artificial Intelligence connection besides comprehensive education, this paper tries to focus on the emerging technologies method could contribute to the academic achievement and the social equity in education.

Eventually, the objective lies in understanding the method Artificial Intelligence could be harnessed for make extra accessible, empowering and to engage learning skills for the whole learners.

3. Problem of the Research:

Old-style educational systems regularly depended on consistent teaching methods that fail to accommodate the different demands, capabilities, besides learning methods of learners. This lack of adaptableness creating barriers to comprehensive instruction, restraining equal learning chances for learners with incapacities, learning problems, or diverse linguistic and cultural trainings.

4. Significance of the Research:

This paper is important since it highlighting the way Artificial Intelligence can transform instruction by making it more comprehensive and accessible. By utilize Artificial Intelligence-driven tools and adaptive learning technologies, educators could support different learners in a better way, enhancing equity besides improving educational products for the whole learners, irrespective of their individual demands or challenges.

5. Objective of the Research:

The principal aim of this paper is to inspect the way Artificial Intelligence could be applied for backing adaptive teaching tactics addressing diverse demands of learners. Also, to recognize Artificial Intelligence effective tools besides the way of enhancing integration, integration further modified learning in instructional setting learner's demands.

6. Literature Review

Nowadays researches highlighting the Artificial Intelligence improving role for advancement comprehensive education via enabling personalized and adaptive learning experiences (Johnson & Smith, 2021) ^[4]. AI-driven tools such as speech-to-text, predictive analytics, and virtual tutors support learners with disabilities by addressing individual needs (Almalki et al., 2021) ^[1]. Research by Florian (2014) ^[2] emphasizes the shift toward comprehensive pedagogies that accommodate diverse learning styles. Pane et al. (2015) ^[6] found that adaptive learning technologies can reduce achievement gaps through continuous performance monitoring. Despite progress, challenges like algorithmic bias and data privacy remain concerns in implementing AI ethically and effectively in education (Luckin et al., 2016) ^[5].

7. The Development of Comprehensive Teaching

The comprehensive instruction marking development an important change from separated, distinct instruction models toward extra equitable and integrated learning settings. Primarily, learners with disabilities are regularly excluded from normal classrooms, that restricted their academic and social chances. Nevertheless, the comprehensive instruction starts late in 20th century emphasized the accommodating diverse learner's significance within general instruction settings. This method sponsors for adjustments in curriculum, instructional tactics besides school culture to support all learners, irrespective of their capabilities. Comprehensive instruction improves academic success besides fostering social acceptance and lessening stigma. Worldwide, plans like the Salamanca Statement in 1994 and the U N Convention

on the Persons Rights with Disabilities in 2006 have sustained comprehensive instruction right. In spite of advancement, challenges continue in application, principally in resource allocation and educator training. Generally, the trend toward integration reflecting a wider commitment for the human rights besides instructional equity (Florian, 2014) ^[2].

8. Powered Adaptive instruction Methods

Artificial Intelligence -driven adaptive instruction methods analyzing individual student data for tailoring instructional content. These methods apply algorithms to regulate the tasks difficulty level recommending resources besides present real-time feedback, guaranteeing that the learner receiving instruction suitable to their existing capabilities besides advancement. Via constantly checking presentation, adaptive methods identify knowledge gaps and regulate educational tactics to sustain weak areas while progress strengths. This modified method enhancing student's motivation besides commitment besides eventually instruction products via stopping obstruction or boredom. Besides, such methods backing distinguished instruction in different classroom settings, assisting educators to achieve diverse learning demands extra successfully. Adaptive learning technologies besides include data analytics to predict student presentation trends besides suggesting interferences before occurring the failure. Incorporation with multimedia resources also cooperating simulation enriching the learning skill, creating abstract thoughts extra accessible. since these systems evolved, increasingly utilize natural language treating and machine learning to improve comprehend student interactions besides present nuanced promotion. Generally, Artificial Intelligence-powered adaptive learning signifies an encouraging direction in instruction technology, promotion extra comprehensive in addition effective learning settings (Johnson & Smith, 2021) ^[4].

9. Helping Technologies Improving Integration

AI enables the assisting technologies progress supporting learners with incapacities. Tools like speaking-to-text converter, screen readers besides expected text software enabling learners with motorized deficiencies visual or hearing to contact and engaging with educational materials successfully. These technologies develop communication and support independence via letting learners to cooperate the digital content in methods suiting their typical demands. Furthermore, AI-driven customization adapts instruction skills to individual capabilities, presenting real-time response besides adapted backing. Natural language handling also machine learning integration assists to surpass the old-style obstacles, making instruction extra comprehensive. Consequently, learners with incapacities could contribute further fully in classroom accomplishments, increasing their academic presentation besides confidence. Continued advancements in Artificial Intelligence hold great promise for expanding integration in teaching and beyond (Artificial intelligence- Azawei, Serenelli, & Lundqvist, 2016) ^[7].

10. Modified Learning Pathways

Through constant valuation analysis of data, Artificial Intelligence systems could make modified instructional ways for learner. Via recognizing weaknesses, strengths besides learning favorites, these systems assisting in designing

modified instructional tactics support improved commitment besides academic achievement. these modified tactics enabling learners to development, guaranteeing that they obtain challenge and support right level. Artificial Intelligence -driven platforms could adjust educational materials energetically, providing to diverse learning tactics, whether visual, hearing, or kinesthetic. besides real -time response allowing educators to get involved punctually, manipulating gaps. This modified tactic improves inspiration and promotes deeper comprehension and knowledge remembering. consequently, learners become dynamic contributors in their learning tasks, enabling to established objectives besides monitoring their advancement successfully. Eventually, Artificial Intelligence-facilitated modified learning could participate to lessening achievement gaps besides supporting equity in education (Pane et al., 2015) ^[6].

Artificial Intelligence technologies, included natural language handling and tools of real-time translation, help in humiliating language obstacles in different classrooms. These tools enabling learners who speak various languages to comprehend lessons and contribute in active way, fostering an comprehensive learning environment. providing immediate translations, Artificial Intelligence -powered uses assist reducing confusions besides develop communication between teachers and learners. Moreover, Artificial Intelligence could identify language sustenance via adjusting to each learner's skill level, supporting further active language achievement. These technologies besides enable educators via presenting lots of language resources in addition computerized valuations, saving time also improving instructional excellence. Furthermore, Artificial intelligence enables cultural exchange via supporting learners to access content from numerous languages and perceptions. Since classrooms becoming progressively globalized, Artificial Intelligence tools help as necessary bridges promoting equity and commitment. This Artificial Intelligence integration in education backings linguistic variety and boosts partnership among learners from diverse backgrounds, promotion joint respect besides comprehension (Wang & Chen, 2021) ^[11].

11. Learners with Intellectual Incapacities assistance

Artificial Intelligence uses are mainly helpful for intellectual disabilities learners. Adjusted learning abilities, like collaborative simulations and ramified modules, provide to the reasoning levels and these learners goods, improving their learning products. These tools guaranteeing that learners could manipulate information at an excellent speed without feeling overcome. Furthermore, speech-to-text besides text-to-speech technology backing communication besides understanding, solving problems in language also literacy abilities. Artificial Intelligence could provide real-time response, strengthening precise answers besides moderately adjusting mistakes, boosts positive strengthening besides inspiration. Auditory besides visual stimuli could be adjusted to suit sensory favorites, creating lessons further reachable. Additionally, predictive analytics could assist teachers identifying learning designs also intervening proactively at a time learner encountering problems. Artificial Intelligence virtual and chatbots aids could help as on-demand teachers, responding questions besides directing learners without result. Besides, teamwork between Artificial Intelligence

systems besides special teaching specialists guarantees the technological involvements aligning with educational better applies. Integrating Artificial Intelligence into comprehensive classrooms, teachers could nurture extra equitable helpful learning environment for the whole learners (Almalki, Aziz, & Nordin, 2021) ^[1].

12. Teacher's Sustenance and Specialized Progress

Artificial Intelligence assists learners and enhance teachers via presenting visions into student presentation also areas demanding care. Moreover, Artificial Intelligence-driven platforms present specialized progress opportunities for teachers, equipped them with abilities essential to use Artificial Intelligence tools efficiently in comprehensive teaching.

These platforms analyzing classroom data for identifying learning problems besides suggesting purposed teaching skills.

Automating administrative duties like categorizing and lesson design, Artificial Intelligence letting teachers focusing further on individualized student commitment. Furthermore, Artificial Intelligence -powered training tools could present real-time response to teachers, improving their educational method.

Technologies of adaptive learning besides assist teachers distinguish teaching relied on student demands. Specialized advance modules rooted in Artificial intelligence platforms regularly included models besides collaborating settings, making exercise extra useful and attractive.

Teachers obtain constant learning opportunities tailoring to their skill level besides the subject area. These tools nurture thoughtful teaching culture, where teachers assessing besides refining them performs repeatedly.

Generally, Artificial Intelligence enables teachers as learning facilitators and as permanent learners themselves depending the sound exercise besides backing, teachers could utilize Artificial Intelligence to prepare extra comprehensive, active classrooms (Luckin et al., 2016) ^[5].

13. Deliberations besides Challenges of Ethics

Artificial Intelligence application in education stimulated ethical worries, included privacy of data, algorithmic bias, besides the possibility for broadening digital divisions. It is essential to deal with these matters to ensure that Artificial Intelligence participated positively to comprehensive education without worsening existing inequalities. One key challenge represented by guaranteeing that data of the student is collected, stored, besides applied correctly, with perfect accord also transparency. Furthermore, algorithms applied in educational technologies could unintentionally strengthen present biases if trained on non-representative datasets. This might have resulted in biased results, mainly for sidelined or lessened student groups.

There existed a risk that Artificial Intelligence tools might prefer schools and societies characterized by best infrastructure, neglecting students in low-income or in the countryside areas Artificial Intelligence ethical application ought to cover equitable access besides various investors participation, included teachers, learners and parents, to make decisions. Moreover, teachers should be trained to apply Artificial Intelligence tools correctly besides comprehend their limits. The governments besides developers should

work together to set controlling outlines safeguarding ethical criteria. Promoting transparency in Artificial Intelligence decision-making considered essential to improve trust among users. Eventually, a balanced tactic is important to harness the Artificial Intelligence profits while alleviating its possible harms in instructional settings (Luckin et al., 2016)^[5].

14. Future Instructions Besides Innovations

Artificial Intelligence potential in comprehensive instruction is huge. Starting technologies such as virtual reality increased reality (AR), and machine learning promising models to more personalize in addition enhancing learning skills. Continuing future studies and improvement are necessary to harness these novelties correctly and efficiently.

15. Conclusion

Artificial Intelligence holds substantial potential in transforming comprehensive instruction via presenting adaptive instruction answers provide to the different learners' demands. Whereas challenges continue, the continued Artificial Intelligence technologies incorporation, joined with ethical deliberations and skilled progress, could result in extra comprehensive and equitable educational settings for all learners. For complete realizing this potential, it is important to manipulate worries associated with data safety, algorithmic clearness, and reasonable contacting technologies. Investors ought to work in collaborative manner to guarantee Artificial Intelligence tools are planned and applied with integration in reason. This included concerning teachers in the process of design besides guaranteeing that Artificial Intelligence organizations are culturally approachable without bias. Investment in teacher exercise is further critical, empowering teachers to successfully integrating Artificial Intelligence into their educational applies. Eventually, with considerate use besides constant misunderstanding, Artificial Intelligence could help as an influential tool in progressing the comprehensive educational objectives.

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