ARTIFICIAL INTELLIGENCE IN EDUCATION: EDUCATORS' PERSPECTIVE

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Abstract

The research aims to get a comprehensive understanding of educators' perspectives on the utilization of artificial intelligence (AI) in the instruction of academic disciplines. This study aims to comprehend the primary role of artificial intelligence (AI) in achieving an effective educational experience. The study employs an exploratory research design that utilizes a quantitative research technique. The data is gathered from students enrolled at Autonomous Institutions located in Bangalore city. A convenience sample method was employed to recruit a total of 76 educators for the study. The data underwent analysis with the SPSS and AMOS software. The findings of the study suggest that educators possess a positive perception of the capacity of artificial intelligence (AI) functionalities to augment subject-specific Academic performance. As per the analysis conducted by educators, the implementation of instructional methods that extend beyond the confines of the traditional classroom setting, along with the utilization of collaborative functionalities offered by artificial intelligence, significantly enhance the Academic performance of the students. This study demonstrates methodological innovation by incorporating the perspectives of educators in examining the impact of Artificial Intelligence on the instruction of academic disciplines. This research focuses on autonomous colleges situated in Bangalore that possess the jurisdiction to create their own curriculum by incorporating artificial intelligence (AI). This study aims to offer significant insights to policymakers in the education sector and educational institutions regarding educators' perspectives on the roles and functionalities of artificial intelligence. The stakeholders have the ability to identify functions that are ineffective and can be either replaced or removed.

Keywords: Innovation, Teaching, Educators, Artificial Intelligence, Academic performance

INTRODUCTION

The future years will witness significant impacts on the field of education due to the continual use and excessive reliance on information technology and Artificial Intelligence (Goksel & Bozkurt, 2019). These repercussions are inevitable and will surely exercise a profound influence (Goksel & Bozkurt, 2019). The primary aim of this research is to investigate the effects of artificial intelligence (AI) on commerce education, specifically analyzing the ways in which AI has impacted and altered several facets of the educational environment in the field of commerce. The objective of this study is to examine the effects of artificial intelligence on the provision of commerce educational subjects. The research is expected to yield empirical evidence supporting the improved efficacy and efficiency of commerce education as a consequence of incorporating artificial intelligence into the curriculum (Chen, L., Chen, P., & Lin, Z., 2020; Nagao, K., 2019).

This study will yield advantages for a wide range of stakeholders within the educational system. This study aims to develop an extensive corpus of research and theoretical frameworks, substantiated by empirical evidence, in order to thoroughly investigate and evaluate the diverse ramifications of artificial intelligence on the domain of commerce education. This study will offer significant contributions to the knowledge base of scholars, professionals, and policymakers engaged in the field of commerce education. The results of this study will provide a valuable contribution to the progress of evidence-based decision-making and the enhancement of pedagogical practices in the field of commerce. The findings will be employed to improve previous studies and impact governmental policies and activities aimed at fostering the efficient application of information technology, particularly artificial intelligence, in the realm of commerce education, among other goals. The collaboration between governmental bodies and educational institutions enables the development of policies, plans, and initiatives that promote the beneficial impact of artificial intelligence on commerce education. The achievement of this objective necessitates a thorough understanding of the implications of artificial intelligence in the field of education, together with an evaluation of the specific attributes of this influence. These advantages may include improved effectiveness in instruction and learning.

REVIEW OF LITERATURE

The research utilized a rigorous literature review approach to assess both comprehensive reviews and individual studies about the application of artificial intelligence in the domain of education in India. A comprehensive selection process was conducted to identify and include a total of 34 studies in the review. The inclusion criteria specified that only English research published within the last five years were included. A detailed evaluation of the quality of literature was conducted by selecting a total of 24 pieces of literature. The whole texts of the respective study works were acquired for this purpose. Four papers were removed from the analysis as a result of iterative procedures and concerns pertaining to their quality. The current investigation is based on an extensive examination of 20 pertinent academic references related to the topic at hand.

Ahmad, S. F., & Hyder, S. I. (2022) primary aim of this essay is to analyze the diverse applications of Artificial Intelligence within academic and administrative settings. Within the context of an educational environment, the primary obligation rests upon the educators, who bear the burden of disseminating information and fostering the process of acquiring knowledge. Nevertheless, educators are also accountable for fulfilling a variety of supplementary responsibilities. In addition to performing their academic obligations, a substantial percentage of a teacher's time and educational resources are committed towards administrative duties. Artificial Intelligence Applications (AIA) not only offer assistance in both academic and administrative facets of education, but also contribute to enhancing their effectiveness. The AIA organization provides help to educators by offering a variety of tools and technology, including as Learning Analytics (LA), Virtual Reality (VR), Grading/Assessments (G/A), and Admissions support. The delegation of administrative tasks to educators enables them to dedicate more time and

energy to the facilitation of education and mentorship for students. In the present era, which is marked by numerous obligations associated with the realm of education, the utilization of artificial intelligence in education (AIA) significantly enhances student learning achievements, reduces the workload of educators, enables effective and precise student evaluation, and simplifies various administrative tasks. Conducting a quantitative analysis of the study is essential to ascertain its potential for generalizability and acceptability.

Chen, X., Zou, D., Xie, H., Cheng, G., and Liu, C. (2022). The increasing prevalence of Artificial Intelligence (AI) technologies in the field of education has resulted in a concurrent increase in the volume of academic research carried out in this area. However, there is a dearth of extensive, wide-ranging evaluations that have been conducted to comprehensively analyze the various aspects within this specific discipline. The objective of this study is to fill the current gap in knowledge by conducting an analysis of a comprehensive collection of 4,519 publications that encompass the period from 2000 to 2019. The aim of this study is to discover and analyze emerging patterns and subjects related to the utilization of artificial intelligence (AI) in the domain of education, commonly referred to as AIEd. The present analysis will be carried out utilizing a topic-based bibliometric methodology. The results of the review suggest an increasing tendency among scholars to employ artificial intelligence (AI) for educational purposes. The main research domains include intelligent tutoring systems developed for special education, the application of natural language processing techniques to language education, the utilization of educational robots for AI education, the implementation of educational data mining methods for performance prediction, discourse analysis conducted in computer-supported collaborative learning environments, the use of neural networks for teaching evaluation, the application of affective computing techniques for learner emotion detection, and the design of recommender systems for personalized learning. Furthermore, this study undertakes an analysis of the challenges and potential paths for advancement in the domain of Artificial Intelligence in Education (AIEd).

Gaevi, D., H. Xie, et al. (2020) The rapid progress of computing technologies has played a significant role in enabling the development and implementation of Artificial Intelligence in Education (AIED) applications. Within the domain of Artificial Intelligence in Education (AIED), the word refers to the deployment of AI technology or application programs with the specific aim of achieving educational objectives. Computers possess the capacity to offer pupils tailored teaching, help, and feedback, while simultaneously aiding educators and policymakers in decision-making processes by employing artificial intelligence (AI) technology that replicates human intelligence. The multidisciplinary character of Artificial Intelligence in Education (AIED) poses a unique difficulty for researchers hailing from many academic fields, despite AIED being recognized as the principal study domain within the field of computers and education.

Zawacki-Richter, Marn, Bond, Gouverneur, and (2019) investigated a specific phenomenon. The domain of educational technology is presently placing considerable attention on the integration of Artificial Intelligence in Education (AIEd). Despite the fact that technology has been available for three decades, a considerable proportion of educators and students in higher education still demonstrate inadequate competency in properly incorporating it into their teaching practices. The primary aim of this research endeavor is to conduct a comprehensive analysis of the current corpus of literature about the application of artificial intelligence (AI) in the domain of higher education. Despite an initial search resulting in 2656 papers, only 146 were considered pertinent and subsequently included in the final synthesis, covering the timeframe from 2007 to 2018. A considerable number of articles in the field of AI in Education (AIEd) are taken from the domains of Computer Science and Science, Technology, Engineering, and Mathematics (STEM). In these domains, the prevailing methodology for doing empirical research involves the application of quantitative tools. The utilization of artificial intelligence in education, commonly referred to as AIEd, has promise for its application in many roles encompassing academic support services and administrative activities. The applications

encompass the utilization of Artificial Intelligence in Education (AIEd) for the purpose of profiling individuals, making predictions about future events, evaluating performance, tailoring learning experiences to individual needs, and deploying intelligent tutoring systems. The outcomes of the study suggest a dearth of thorough examination pertaining to the obstacles and potential hazards linked to Artificial Intelligence in Education (AIEd). The neglect of theoretical frameworks of pedagogy has underscored the necessity for more research into ethical and educational approaches to the integration of Artificial Intelligence in higher education.

Chan and Zary (2019), The primary focus of incorporating artificial intelligence (AI) into medical education has been centered around its employment as a learning aid, particularly due to its ability to offer tailored feedback. The limited implementation of digital technology and the cautious approach towards tests have led to a reduced focus on curriculum evaluation and the measurement of students' learning outcomes. The implementation of robust measures to prevent data breaches and associated concerns is crucial in minimizing the risk of unauthorized use of large databases. There exists a necessity for the advancement of methodologies that can successfully address the technological complexities involved in the development of artificial intelligence (AI) applications. Additionally, it is crucial to incorporate novel ways in order to evaluate the performance of AI systems. The implementation of these innovations plays a pivotal role in augmenting the general acceptance and widespread adoption of this technology. To optimize the incorporation of artificial intelligence (AI) in the healthcare industry, it is crucial to integrate AI education into the medical school curriculum for aspiring medical professionals.

Hastungkara and Triastuti (2019) The rapid progress of technology has accelerated the development of modern communication infrastructure, including the Internet, computer systems, and electronic media. Artificial Intelligence (AI) exemplifies this phenomenon. It is expected that in the near future, a growing number of regions, including Indonesia, would embrace the utilization of artificial intelligence

(AI). The integration of artificial intelligence (AI) technology inside the Indonesian education system can be linked to its notable influence in augmenting the efficacy of electronic learning (e-learning). The main aim of this study is to investigate the various aspects that impact the educational system and information and communication technology (ICT) in Indonesia. Furthermore, the research aims to investigate the possible ramifications and outcomes of incorporating artificial intelligence (AI) into e-learning methodologies. The fundamental focus of this discourse pertains to a critical analysis of the prevailing educational system, with reference to secondary sources.

Goksel and Bozkurt (2019), Artificial intelligence (AI), formerly considered a notion limited to the realm of speculative literature, has now permeated several facets of our everyday existence and educational settings. Within the current framework, a comprehensive evaluation is being carried out to assess the existing comprehension of artificial intelligence (AI) and its wide-ranging prospective implementations in several fields, including natural language processing (NLP), machine learning (ML), and deep learning (DL). Social network analysis (SNA) is widely recognized as a significant tool in the field of education for understanding the fundamental ideas of research in artificial intelligence. The research findings revealed three key themes. The discourse encompasses several subjects such as adaptive learning, personalization, expert systems and intelligent tutoring systems, as well as the prospective incorporation of artificial intelligence (AI) into educational procedures in forthcoming times.

Chen, Chen, and Lin (2020) conducted a study. The primary aim of this research was to assess the influence of artificial intelligence (AI) on the educational system. The study centered on the utilization of artificial intelligence (AI) within the realms of education, administration, and learning. Nevertheless, it is crucial to acknowledge that the study's scope was constrained, perhaps impeding the capacity to comprehensively tackle all pertinent matters. The study utilized a qualitative technique, which involved the integration of a literature review as a research

design and approach. The field generally known as "applied artificial intelligence" is responsible for the progress of robots that can mimic human learning and adaptation, as well as execute complex cognitive tasks. The findings of the study suggest that artificial intelligence (AI) has been widely used and integrated in the field of education, notably in academic institutions. The field of artificial intelligence (AI) has had notable progress, evolving from its original computer-based form to include many technologies such as web-based intelligent education systems, humanoid robots, and web-based chatbots. AI systems possess the ability to autonomously execute a wide range of teaching duties and functions, either in conjunction with human instructors or independently. The implementation of these platforms has the potential to allow educators to dedicate a greater portion of their time to instructional endeavors, while concurrently diminishing the time devoted to administrative duties, such as paperwork. This can be achieved through the accelerated and streamlined assessment and grading of student assignments. The incorporation of machine learning and adaptability into curriculum design has resulted in improvements in the educational experience and overall quality by efficiently catering to the specific needs of individual students.

Nagao (2019), This paper is based on a collaborative investigation conducted between 2015 and 2019 at the Leadership research group within the Faculty of Education and Humanities at New Granada Military University. The research primarily examined the convergence of artificial intelligence and bioethics, humanistic considerations, and the legal implications related to robotics. Empirical and analytical research approaches are being employed to investigate the perspectives of educators on the incorporation of artificial intelligence (AI) and robotics inside educational environments. The research encompassed the administration of interviews to a cohort of 140 educators who were tasked with instructing a wide range of academic subjects. The study revealed that a significant proportion of these educators held a master's degree in the field of education. This research investigates the diverse obstacles and constraints faced by educators when

incorporating artificial intelligence (AI) and robotics technology into the educational environment.

Braiki, A., Harous, S., & N. (2020) The domain of education, largely acknowledged as a complex and sensitive area of human existence, is currently seeing the impact of artificial intelligence. Education is a domain that is predominantly defined by its subjective nature, rather than being governed by objective principles. However, the emergence of computers as potential educators has generated significant debate and disagreement among educational experts and a select group of influential artificial intelligence (AI) companies. These companies are striving to create machines that can outperform human educators. The primary objective of this article is to present a comprehensive summary of the current body of knowledge within the relevant academic discipline. The discussion begins by offering a clarification of artificial intelligence (AI) and its potential utilization in educational environments, specifically in the domains of classroom teaching and assessment assessment. Following this, we proceed to underscore the prevailing educational difficulties that have been addressed by artificial intelligence (AI) and machine learning (ML) solutions.

Research Gap - Existing literature has extensively examined various fields of education, including medical science (Chan & Zary, 2019), science (Al Braiki et al., 2020), and vocational training. However, there is a dearth of research focusing on the applications and functions of artificial intelligence (AI) in education. The available body of literature indicates a notable deficiency in comprehending the influence of artificial intelligence (AI) functionalities on the efficacy of topic delivery, particularly in relation to commerce graduates.

The primary objective of this study is to investigate the viewpoint of educators on the utilization of artificial intelligence (AI) features in the teaching and learning of specific subjects and Academic performance

RESEARCH METHODS

The present study is characterized by its descriptive nature and employs a deductive method. It is conducted within Autonomous Institutions located in Bangalore that provide commerce courses. The scope of this study is restricted to instructors who are specifically affiliated with commerce disciplines. A sample of 76 educators was recruited using a convenience sampling method. A meticulously designed questionnaire was developed by incorporating elements from the research conducted by Chen, L., Chen, P., & Lin, Z. (2020) and Ahmad, S. F., Alam, M. M., Rahmat, M., Mubarik, M. S., & Hyder, S. I. (2022). The questionnaire's reliability and validity were assessed utilizing the master validity tool developed by Gaskins, and the results confirmed its soundness. The data analysis was performed utilizing the SPSS and AMOS software applications.

DISCUSSION AND RESULTS

Demographic profile of the educators

The majority study participants consisted of 76% females, reflecting the dominant presence of women in the education industry in India. According to the study, 24% of the educators fall within the age range of 30-35 years, while 36% are in the age bracket of 36-40 years. Additionally, 21% of the educators are between the ages of 41-45 years. A minor proportion of respondents are below 30 years of age or above 50 years of age. The survey reveals that a significant proportion of educators, specifically 67%, have successfully obtained their post-graduate degrees accompanied by either the State Level Eligibility Test (SLET) or the National Eligibility Test (NET). Additionally, the study indicates that 12% of the educators included in the analysis hold doctoral degrees. According to the findings, a significant proportion of educators, specifically 37%, hold the position of

teaching associates. Additionally, 24% of educators are classified as Assistant professors, while 26% are categorized as Associate professors. It is worth noting that a minority of senior academics were included in the study. A significant number, specifically 64%, of teachers are engaged in instructing core commerce subjects, while 12% are involved in teaching non-core papers. The remainder educators possess specialization in individual disciplines and are responsible for teaching elective courses.

Functions of AI in Education

The roles of Artificial Intelligence in education were measured by a thorough literature analysis, resulting in the identification of 13 statements. The utilization of breakthroughs in artificial intelligence within the realm of education is readily apparent through the integration of adaptive learning methodologies. This specific interactive educational setting considers the unique needs of individual students by employing interactive techniques. The possible implementation of adaptive education, which incorporates artificial intelligence (AI), can extend to many systems, encompassing a range of possibilities. The process of hypermedia adaptation involves the careful selection and presentation of content that are best suited for learners, with careful attention given to their current knowledge, learning goals, and individual preferences. The prevalent instructional framework observed in academic environments often omits direct teacher participation and instead places emphasis on students' interaction with computer-based systems. Computer-based adaptive testing (CBAT) is a method of evaluation in which the system intelligently adjusts itself based on the specific scholar's level of knowledge and skills. The following table presents the perspectives of educators regarding the role of Artificial Intelligence (AI) in the field of Education.

Figure 1: Artificial Intelligence functions
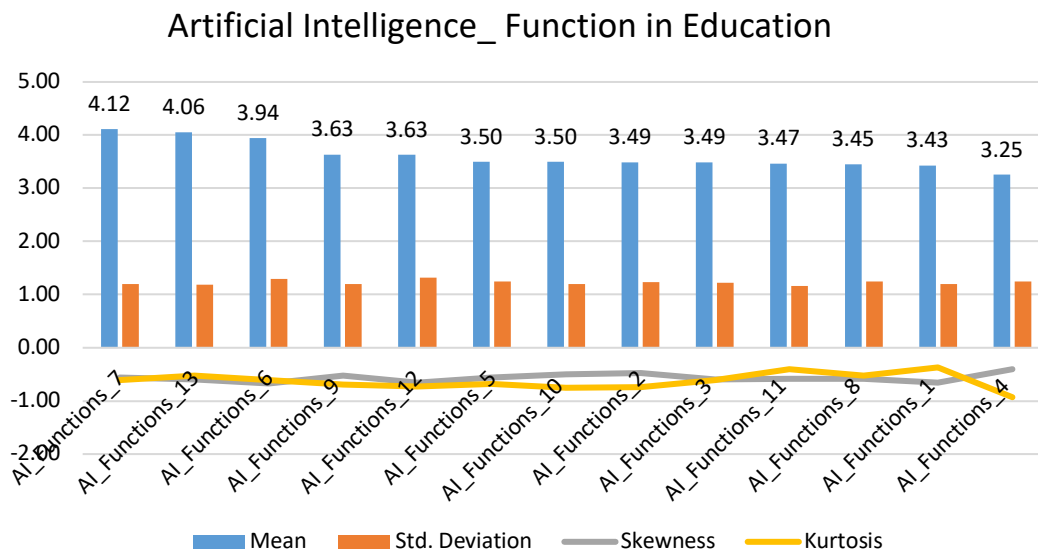
According to the mean ratings, it may be inferred that educators are in agreement on the time-saving benefits of AI in doing routine administrative tasks such as grading and providing prompt feedback, as indicated by a mean score of 4.12. Furthermore, the educators articulated that by utilizing artificial intelligence (AI), it becomes feasible to identify the deficiencies of students and address them during the initial stages of topic acquisition, resulting in an average score of 4.06. The artificial roles, such as providing decision-making aid to teachers, facilitating learning beyond the classroom, and promoting teamwork, received mean ratings above 3.50, indicating a range of reactions from neutral to agreement. The remaining functions exhibited neutral responses, suggesting that they may not be very effective in conveying the subject matter to the pupils.

Impact of AI functions in Academic performance

H1 – There is a significant impact of AI function in Academic performance

Model fit - The chi-square value divided by the degrees of freedom ($\chi2$ / df) is within the permissible range of 3, particularly measuring at 2.955. The observed degree of goodness of fit (0.871) exceeds the specified attributes. The estimation of the border results in an RMR value of 0.071. The model under consideration is widely recognized within the academic discipline, and its measures of fit are deemed to be reasonably appropriate.

Figure 2: Structural relationship between variables - Impact of AI function in Academic performance
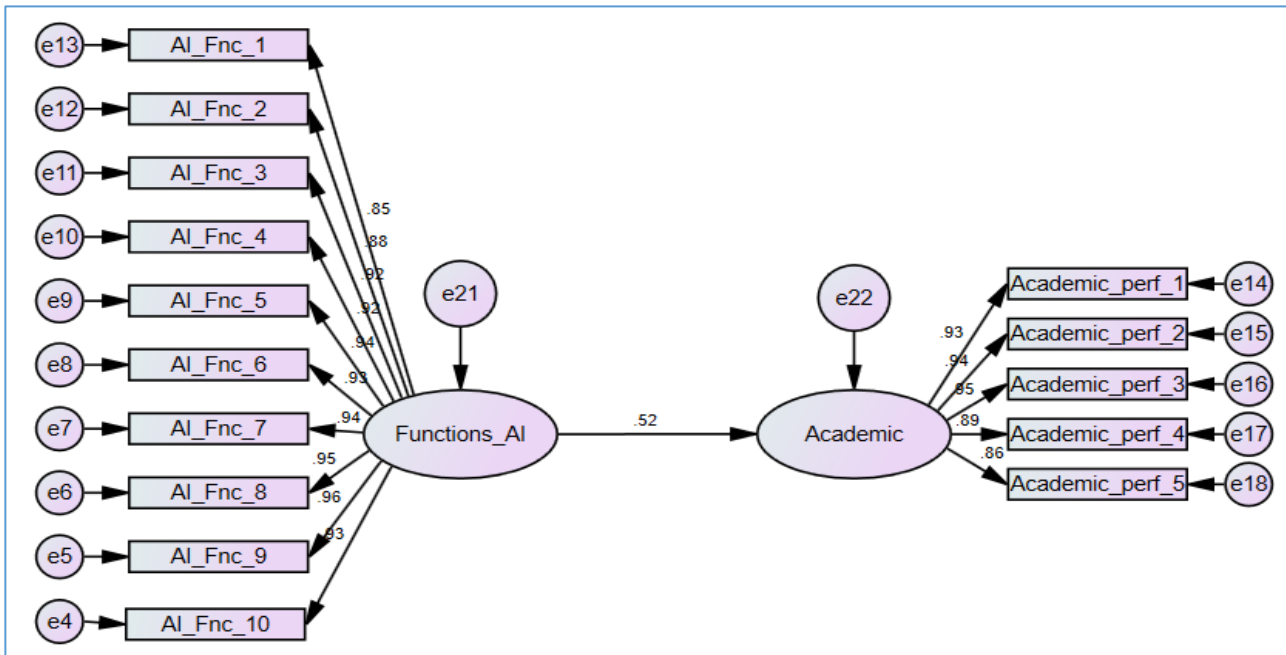
Table 1: Structural relationship between variables - Impact of AI function in delivering Academic Performance

			Estimate	P
Academic	<---	**Functions_AI**	**0.522**	***
AI_Fnc_10	<---	Functions_AI	0.931	***
AI_Fnc_9	<---	Functions_AI	0.965	***
AI_Fnc_8	<---	Functions_AI	0.946	***
AI_Fnc_7	<---	Functions_AI	0.943	***
AI_Fnc_6	<---	Functions_AI	0.928	***
AI_Fnc_5	<---	Functions_AI	0.935	***
AI_Fnc_4	<---	Functions_AI	0.921	***
AI_Fnc_3	<---	Functions_AI	0.917	***
AI_Fnc_2	<---	Functions_AI	0.876	***
AI_Fnc_1	<---	Functions_AI	0.846	***
Academic_perf_1	<---	Academic	0.932	***
Academic_perf_2	<---	Academic	0.937	***
Academic_perf_3	<---	Academic	0.955	***
Academic_perf_4	<---	Academic	0.892	***
Academic_perf_5	<---	Academic	0.859	***

The results of the SEM analysis show that the AI functions play a significant role in Academic performance of commerce graduates. The standardised estimates show that 1 unit increase in the AI functions will lead to 52% increase in effectiveness of delivering the commerce subjects to graduates and this effect is statistically significant at p=0.05.

According to Kelley, Fontanetta, Heintzman, and Pereira (2018), the implementation of artificial intelligence in educational settings allows educators to devote more time to meaningful student engagement and provide more efficient support in addressing obstacles, as a consequence of the automation of administrative tasks. The utilization of artificial intelligence holds promise in streamlining the admissions process of commerce colleges through

the automation of document classification and processing. The utilization of artificial intelligence (AI) has the potential to streamline the process of evaluating examination papers, comprising the assessment of both objective and subjective responses. In addition, the application of this technology not only aids in minimizing the time and effort expended by instructors, but also helps in mitigating any errors that may arise from lapses in attention or unintentional biases (Hwang, G. J., Xie, H., Wah, B. W., & Gašević, D., 2020).

The increased implementation of automated systems in conjunction with intelligent materials has resulted in a broader reach of high-caliber educational opportunities to a more extensive range of individuals (Knox, J., 2020). By harnessing advanced artificial intelligence technology, educators possess the capacity to produce personalized study materials that specifically address the distinct needs of students residing in various geographical locations (Hastungkara, D. P., & Triastuti, E. (2019). The dissemination of instructional material can occur through several channels, including virtual platforms such as video conferences and lectures, as well as conventional face-to-face contacts. Moreover, the incorporation of artificial intelligence through the utilization of smart learning content will augment the aptitudes of educators in providing individualized assistance to each student, thereby supplementing the current intelligent tutoring system. The integration of artificial intelligence is enabling the creation of a compendium of digital resources obtained from traditional textbooks. The aforementioned materials are being organized into outlines, study aids, chapter summaries, and practical assessments. The implementation of artificial intelligence interfaces allows educators to create thorough syllabus outlines and e-curriculums that can be accessed on multiple platforms. These resources include online support programs, instructional films, and audio materials.

Within the confines of a traditional educational environment, educators may face difficulties in accurately identifying the distinct abilities and limitations of each student, thereby impeding their capacity to distribute sufficient attention to every individual. However, the application of artificial intelligence is enabling educators to effectively monitor the immediate progress and growth of their students, thereby improving their capacity to address the unique requirements of each learner. Moreover, the integration of artificial intelligence allows instructors to spend supplementary time to offer advice and support to their students, so facilitating the development of cognitive capacities.

In addition to its scholarly implications, artificial intelligence can also be utilized to discern and optimize pupils' vocational opportunities. Artificial intelligence (AI) holds promise in facilitating the detection of particular learning disabilities, such as dyslexia, as well as addressing other obstacles that individuals with a background in commerce may confront. As a result, this can assist educators in evaluating whether pupils have achieved the necessary reading abilities that are appropriate for their age. The use of artificial intelligence (AI) software plays a crucial role in collecting accurate data about pupils, which allows educators to apply customized teaching methods during instructional sessions. Instead of employing a standardized approach, this model seeks to capitalize on the unique capabilities exhibited by each students.

In general, the utilization of artificial intelligence (AI) in the field of education has demonstrated efficacy in the dissemination of subject matter to pupils.

CONCLUSION

The integration of artificial intelligence (AI) into the educational system holds the promise of augmenting inclusion. The convergence of artificial intelligence, internet connectivity, and mobile technologies has enabled enhanced accessibility to educational resources within domestic settings. Therefore, in the event that a student is unable to obtain admission to a certain educational institution, they still have the option to continue their studies with the assistance of a smart device. Artificial intelligence is being efficiently employed in various educational institutions to address the negative outcomes resulting from insufficient infrastructure and a

shortage of skilled educators. The integration of this technology has significantly improved the quality of remote educational options. The implementation of virtual classrooms and the direction provided by teachers have played a significant role in the development of structured and efficient asynchronous sessions.

The utilization of artificial intelligence allows for the development of a personalized multidisciplinary curriculum that can be modified and adjusted to track the individual reactions of students, thereby aiding in the discovery of their particular areas of interest. The approach described exhibits similarities to the recommendation systems utilized by well-known streaming and e-commerce platforms. These systems make suggestions for favored television episodes or products to enhance future visits or usage of their websites or services. Therefore, the likelihood of kids being assigned to an unsuitable educational system is extremely low.

In the near future, there are some promising characteristics related to the progress of technology that merit consideration. Individualized instruction is an invaluable educational tool that enhances the academic experience of students. The use of automated processes for time-consuming jobs offers several benefits to educators, as it improves their productivity and enables them to dedicate additional time to accomplishing other important duties. This study is limited to the specific geographic region of Bangalore city. Future scholars are strongly urged to explore the utilization of artificial intelligence in the realm of education across various geographic settings. The current investigation is limited in scope as it primarily examines the viewpoints of educators within the commerce discipline. Nevertheless, there exists a prospect for additional exploration regarding the application of artificial intelligence (AI) in the facilitation of educational instruction across diverse fields, including but not limited to science, arts and humanities, and computer science.

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