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ARTIFICIAL INTELLIGENCE IN EDUCATION

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ABSTRACT

In this, we will see about the Artificial Intelligence Use in Education. Importance of AI in education. The use of AI is still unclear for educators on how to make pedagogical advantage of it on a broader scale and how AI can impact teaching and learning in higher education. The impact of AI in education and its pros and cons are presented here. It also describes a specific way to develop AI-enabled platform for education and finally the after-effectuate effects of AI in education.

The purpose of this study was to assess the impact of Artificial Intelligence (AI) on education. A qualitative research approach, leveraging the use of literature review as a research design and approach was used and effectively facilitated the realization of the study purpose. Artificial intelligence is a field of study and the resulting innovations and developments that have culminated in computers, machines, and other artifacts having human-like intelligence characterized by cognitive abilities, learning, adaptability, and decision-making capabilities. as well as an assessment of AI in education, were suggested for further investigation. However, we also proposed the challenges in education may be caused by AI regarding inappropriate use of AI techniques, changing roles of teachers and students, as well as social and ethical issues. The results provide insights into an overview of the AI used for education domain, which helps to strengthen the theoretical foundation of AI in education and provides a promising channel for educators and AI engineers to carry out further collaborative research.

1. INTRODUCTION

In 2020 when the covid-19 pandemic impacts the whole world everything went online and, in that education, AI become the most important tool The emergence of big data, cloud computing, artificial neural networks, and machine learning has enabled engineers to create a machine that can simulate human intelligence. Building on these technologies, this study refers to machines that are able to perceive, recognize, learn, react, and solve problems as artificial intelligence (AI). According to the 2018 Horizon report, experts anticipate that the use of AI in the education to grow by 43% in the period of 2018 – 2022. Application of AI in education has been a subject of research for the past 30 years.

The International Artificial Intelligence in Education Society (AIED) is an interdisciplinary community at the frontiers of the fields of computer science, education, and psychology. From a review of the convergence of AI with education as discussed by Chassignol et al., the scope of this study will cover the impact of AI on the administration and management, instruction or teaching, and learning functions or areas in the education sector. Artificial Intelligence is an emerging technology that started modifying educational tools and institutions. Education is a field where the presence of teachers is a must, which is the best educational practice. The advent of Artificial Intelligence changes the teacher's jobs who are irreplaceable in the education system. The existing research mainly focused on the virtual online system, and the

Internet of Things (IoT) is less noticed. Learners' biofeedback also needs to be explored in future educational research. AI in education initially took the form of computers and computer- related systems, and later, the form of a web-based and online education platforms. Three key technical developments underpin recent advances in data-driven AI. First, in the last 15 years, the rapid expansion of social media, internet use, and smartphones have generated vast amounts of data, text, voice, and images. Second, data-driven AI uses very simple computations that can be done using hardware that was originally developed for graphics processing in computer games. Third, the Internet has enabled the low-cost distribution of human workers at a massive scale. Many of the advances in data-driven AI are based on the availability of data collections that have been processed and labeled by humans.

A. **Nature of Artificial Intelligence: -** Artificial intelligence (AI) is conventionally heavily associated with computers. extrapolations from the extraordinary developments of the last decade may have little predictive power. At present young people tend to use lot of time using their smartphones or tablets. This gives them a chance to study for ten to fifteen minutes in their free time by using AI applications. Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

At the same time, the study of the human brain will allow us to duplicate its functions in

machine circuitry. Advances in brain imaging will allow us to "map out" brain functions synapse by synapse, allowing individual minds to be duplicated in some combination of hardware and software. The result, once again, would be intelligent machines. Digitization is often considered to be immaterial. It is therefore important to note that, currently, the mining of one Bitcoin requires fossil energy equivalent of 750 tons of concrete, or 60 barrels of oil.

B. **Technical Aspects of Ai in Education: -** The connection between AI and education involves three areas: learning with AI (e.g., the use of AI-powered tools in classrooms), learning about AI (its technologies and techniques), and pr

eparing for AI (e.g. enabling all citizens to better understand the potential impact of AI on human lives). AI-aided education includes intelligent education, innovative virtual learning, and data analysis and prediction. AI-powered grading software combines Machine Learning to create calculating systems after it collects important data on metrics for grading assignments from papers that have been graded by teachers/professors. The tools are designed to understand and replicate the teachers' human grading process earlier. I convert the data into a readable form allow the system to interact with ideas with perfect accuracy. It is widely used in customer services to generate reports and pull market data. Intelligent education systems provide timely and personalized instruction and feedback for both instructors and learners. AI tools can assist learning through tailor-made study schedules and customize learning based on the specific needs of individual learners. They identify the gaps in knowledge, creating instructions, testing and feedback systems for learners from preschool to college. AI-powered software, games and tools can set a strategy for students to learn at their speed, time and requirements for repeated practice.

C. **Role of AI in education: -** AI can grade papers and essays much faster than a human can. This will give teachers more time to work with students on critical thinking skills and critical analysis skills. This would also allow teachers to focus on individual students who would benefit from their guidance. For decades, science fiction authors, futurists, and movie makers alike have been predicting the amazing (and sometimes catastrophic) changes that will arise with the advent of widespread artificial intelligence. So far, AI hasn't made any such crazy waves, and in many ways has quietly become ubiquitous in numerous aspects of our daily lives. From the intelligent sensors that help us take perfect pictures, to the automatic parking features in cars, to the sometimes frustrating personal assistants in smartphones, artificial intelligence of one kind of another is all around us, all the time. In college, grading homework and tests for large lecture courses can be tedious work, even when TAs split it between them. Even in lower grades, teachers often find that grading takes up a significant amount of time, time that could be used to interact with students, prepare for class, or work on professional development. An analysis of the scholarly sources selected for the study showed that AI has indeed been applied in educational institutions in different ways, including in the form of automation of administrative processes and tasks, curriculum and content development, instruction, and students' learning processes. While there are obviously things that human tutors can offer that machines can't, at least not yet, the future could see more students being tutored by tutors that only exist in zeros and ones.

2. IMPACT OF AI IN EDUCATION

A recap of the objective or purpose of the study; the study aims at assessing the impact of AI in education. The evaluation of the different ways in which AI has been implemented in the education, focusing on administration tasks, instruction, and learning, only partly answers the implied research question. The impact of artificial intelligence as a powerful technology can be witnessed in diverse industry verticals. The education industry across the globe is no exception to this. Artificial intelligence in education is being used by different schools in the country.

Here are some statistics to throw light on artificial intelligence in education.

- The AI in education market size exceeded 1 billion USD in 2020. It is expected to grow at a CAGR of over 40% between 2021 and 2027.

- The artificial intelligence in education market is expected to post a revenue of 25.7 billion USD by 2030. (Prescient and Strategic Intelligence)

- The global AI in education market is expected to reach 3.68 billion USD by 2023.

- A lot of time is spent by teachers in administrative activities like grading and assessment of worksheets.

A. **Education Administration:-** AI application in education, in its various forms and serving different functions, has had a major impact on the performance of administrative and management functions in education. The rapidly rising visibility of AI has led many educational institutions to expand the provision of AI-related content. The 'Elements of AI' online course, developed by the University of Helsinki and Reaktor, has been a very successful effort to provide introductory-level knowledge about AI for broad audiences. The potential of using artificial intelligence in education to enhance learning, assist teachers and fuel more effective individualized learning is exciting, but also a bit daunting. To even have an intelligent conversation about AI in education, one must first push past imaginary science-fiction scenarios of computers and robots teaching our children, replacing teachers and reducing the human element from what are a fundamentally human activity. However, using AI techniques, including visualization and hierarchical reasoning modelling, may be inadequate to support reasoning.

B. **Instruction: -** AI and social cognition, the apparent complexity of learners' behaviour was largely a reflection of the complexity of the learning environments. Another aspect of education that was the focus of this analysis is the use of AI in instructions or by instructors. An analysis of different articles showed rapid uptake and use of AI, in different forms for instructional purposes or as a pedagogical tool by instructors. The use of AI for instructional purposes or as a pedagogical tool has had a major impact on this aspect of education. As the solutions in AI continue to get to higher level it helps to identify the gaps in teaching and learning and increases the proficiency of

education. AI can drive efficiency, personalization and streamline admin tasks to allow teachers the time and freedom to provide understanding and adaptability- uniquely human capabilities where machines would struggle. With the combination of machines and teachers it is possible to pull out the best results from students. AI ensures improved dissemination of course content, starting from curriculum development phase to actual delivery of content or instructions, more so in online and web-based learning platforms.

3.   DISCUSSION OF THE RESULTS

From the different articles and studies reviewed, it is evident that with technological innovations and advancements, computers and computer related technologies, and other innovations have encouraged the development of artificial intelligence, which has permeated different sectors of the society, and will potentially have a major impact on different industries in which it is used. This approach has been the starting point in the EU-funded New Era of Learning -project, where the largest Finnish cities have provided opportunities for rapid AIEd experiments and co-design with technology developers, teachers and students. The AI technique was utilized as a development tool for the construction of a smart learning environment, which can be subclassified as focusing on the development of algorithms including classification, matching, recommendation, and deep learning for teaching and learning purposes. Continuous developments and innovations, particularly, with the transitioning of AI from computers only, to include embedded systems, as well as online and web-based platforms, harbingered the development and use of AI in web-based platforms and online platforms, and robotics, evidenced by the development and use of humanoid robots (cobots and chatbots)

4.   CONCLUSION

The objective or the purpose of this study was to assess the impact of AI on education. A qualitative research study, leveraging literature review as a research design and method was used. Journal articles, professional publications, and professional conference reports were identified and used in an analysis that facilitated the realization of the study purpose. AI in education is a revolutionary change. According to a report issued by Centre for Integrative Research in Computer and Learning Sciences states that the next level uses of AI in Education is not yet invented. So the people working on AI applications should let the educators and education policy makers know about this in depth. In the U.S., the Department of Education has invested in the "What Works Clearinghouse" that consolidates scientific evidence on educational products and policies, and there have been many similar initiatives in the Member States. There seems to be clear potential for coordinating such initiatives at the EU level. The use of these platforms and tools have enabled or improved teacher effectiveness and efficiency, resulting in richer or improved instructional quality. AI has provided students with improved learning experiences because AI has enabled the customization and personalization of learning materials to the needs and capabilities of students. Overall, AI has had a major impact on education, particularly, on administration, instruction, and learning areas of the education sector or within the context of individual learning institutions.

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