A Review – The Study Of AI Integrated ICT Tools And Its Impact On Educational Institutions On Teaching And Learning Process

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Abstract – The present study attempts to understand the role of Artificial Intelligence and Information and Communication Technology in Educational Institutes. There are various factors which are required for overall development of the students. Now a days AI and ICT tools plays a key role in student's development. Educators and administrators are now use AI tools to analyze the data and providing insights for decision and strategies. The AI ICT tools helps in improving personalized learning experience among the students. It has now entered in all sectors like health, communication, hospitality and other services. Now a days it is widely used in academic research and curriculum. This research paper will highlight the role of AI integrated ICT tools among the educators and role of tools in higher educational institutes with reference to various philosophers and writers.

Introduction - An AI Artificial intelligence (AI) has rapidly transformed from a futuristic concept to an integral part of our daily lives, and education is no exception. In 2024, AI technologies are revolutionizing the academic landscape, offering unprecedented opportunities for personalized learning, administrative efficiency and improved educational outcomes. From intelligent tutoring systems to AI-driven classroom management, the impact of AI is profound and far-reaching. Educators and administrators can now leverage AI to analyze vast amounts of data, providing insights that drive informed decisions and strategies.

Artificial intelligence is no longer just a promise for the future — it's actively enhancing education today. By integrating AI into classrooms, educators can personalize learning experiences, streamline administrative tasks and provide more effective support to students. The term Information and Communication Technology (ICT) is a broad and comprehensive expression. It is not restricted to computers or the internet alone. Today, colleges are under pressure to adapt to this technological innovation. AI integrated ICT provides remarkable opportunities for developing countries to enrich their educational system since it can help in acquiring and assimilating knowledge. Technology plays a crucial role in strengthening interpersonal connections. It has

contributed in the sectors of health, transportation, electricity, etc. to all the demographic factors of society. The Internet, digital course materials, and digital textbooks students to be "1 to 1" with a technology device. Since technology is being utilized within the classroom daily, schools must keep up with the ever-changing technological advances.

Benefits of AI in Education

Here are some of the specific benefits AI brings to the education sector:

1. Enhanced Personalized Learning - AI tailors educational content to each student's unique learning style and pace.

2. Automated Administrative Tasks - AI automates grading, scheduling and report generation, significantly reducing the workload on educators.

3. More Engaged Learners- AI makes learning more interactive and engaging through gamified content and adaptive learning platforms.

4. Improved Accessibility - AI-driven assistive technologies support students with disabilities, ensuring a more inclusive learning environment.

5. Actionable Insights - AI analyses vast amounts of educational data to provide educators with actionable insights.

6. More Efficient Classroom Management - AI tools help teachers manage classroom behavior and engagement.

7. Better Security and Assessment Integrity - AI enhances the security and integrity of assessments through advanced proctoring and plagiarism detection.

8. Continuous Lifelong Learning and Professional Development - AI supports continuous learning and professional development for educators by recommending personalized resources and courses.

9. Greater Scalability - AI enables the scaling of educational programs to accommodate more students without compromising quality. AI-based platforms can handle large volumes of data and provide personalized learning experiences to a growing number of learners, ensuring accessibility and consistency in education.

ICT Tools in Education – There are many ICT tools that is useful for educational purpose. Classification of ICT tools is based on its use and functions. ICT tools help the teachers to teach in practical way to the students and helps in overall development of the students. It also leads to skill enhancement among the students.

Teaching Tools –

1. Interactive Whiteboard
2. Computer & Internet
3. Projector
4. Computer & Laptops
5. Personal Digital Assistants
6. Digital Videos
7. Google Classroom

List of top AI integrated tools

1. Gemini
2. ChatGPT
3. Meta AI
4. Smart Sparrow
5. AI Voice Assessments – Eklavvya
6. TutorMe
7. OpenAI
8. Person AI
9. DocuExprt
10. AI Admission Interview

Objectives of the Study – This research paper study is based on research paper related to different AI integrated ICT tools which are used in teaching, learning and academic progress.

Statement of the Problem - The research will highlight effects of AI-powered ICT tools on student learning outcomes in educational institutions by different researchers in their study. It also influences the teacher professional development. The functioning of ICT is to enable products or goods or services to be produced within a shorter period with all the computerized system. It improves efficiency in delivering services rapidly. The AI-powered ICT tools can be used to enhance the assessment and feedback practices in educational institutes. The researcher will highlight this problem through various articles and research papers published by the authors and writers.

Research Methodology – This research paper study is based on a research papers and articles published by various writers in journals and books. The study is mainly based on the secondary data.

Scope of the Study - The study explores the impact of Artificial Intelligence (AI) tools with Information and Communication Technology (ICT) on teaching, learning and assessment process. The use of AI tools and ICT tools among the professors is an important aspect to find out among the working

professionals. The faculty members faces various problems also while utilizing AI integrated ICT tools in their respected college. Therefore it is important to understand the factors behind using AI integrated ICT tools and impact on teaching and learning process. The student satisfaction is the key element for the teachers when they are implementing AI integrated ICT tools in education. The role of students will be found out from the AI - powered ICT tools perspective.

Review of Literature

Baskey, K. S. (2017). Presented his study titled "Use of Ict and Development of Teaching-Learning Activities: A Micro-Study in the District of Purba Burdwan, West Bengal". And highlights the impact of ICT on development of teaching-learning activities among the students and teachers of the surveyed schools in Purba Burdwan district of West Bengal. The study comprises of 120 students and 80 teachers of few selected schools. A nonparametric chi-square test has been used to examine the relationship between use of ICT in school and development of teaching learning activities among the teachers of the surveyed areas. Also, 't'- test has been applied to know whether any significant differences in awareness among the teachers regarding the application of ICT in school and development of teaching-learning activities with respect to gender(Male Female teacher), residing place(Urban Rural) and status of appointment.

Bhattacharjee, B. and Deb, K. (2016). Studied on Role of ICT in 21st Century's Teacher Education. 'ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters. ICT stands for Information and Communication Technologies. ICT is a part of our lives for the last few decades affecting our society as well as individual life. ICT which is now broadly used in educational world. ICT also helps teachers, students and parents to come together.

Aksoy. H. (2003). Made a study on Influence of ICT applications on learning process in higher education. 'Education is the great investment for the future. When investing in education, predicting future parameters and moving according to predictions is an essential part in the education process. In such an important subject, the use of technology cannot be avoided at all. ICT-based educations serves the purpose of both attended and non-attended (distance) education types. The aim of this research is to determine and find out the perceptions of students, motivations and their success rate those study with Information and Communication Technology Based technology supported environments and universities and evaluate these outcomes to find out potential issues of ICT applications through learning process in higher education institutes by conducting survey analysis'.

According to an article in The Atlantic, ("Artificial Intelligence Promises a Personalized Education for All"), artificial intelligence holds the potential to "enhance human teachers' abilities to tailor lessons to each student without knocking their class schedule off track," eliminating the need for educators to

"teach to the middle," as often happens when their students have a range of skill levels and learning abilities.

Rose Luckin, a professor of learning-centered design at University College London, is quoted as saying that, "The real power of artificial intelligence for education is in the way that we can use it to process vast amounts of data about learners, about teachers, about teaching and learning interactions." Ultimately, AI can "help teachers understand their students more accurately, more effectively."

Zawacki – Richter express in his article the field of education especially lends itself to AI technologies since educational activities, including learning and teaching, are knowledge-intensive cognitive activities, and AI applications, which are created for cognition and problem-solving based on algorithms and knowledge base, can effectively support and augment educators' and learners' abilities in teaching and learning.

Conclusion - AI is breaking down education barriers thanks to tools that support students with diverse needs and learning styles. As AI evolves, its potential to transform education grows, setting the stage for a future where learning is more personalized, inclusive and effective. The results of the research highlight a significant impact of the use of AI integrated ICT Tools. It is also needed to be found that the different AI - powered ICT tools are available for educational purpose. This tools really plays a crucial role amongst faculty members and effective implementation of ICT Tools helps to create the positive impact on college development. Use of AI - powered ICT tools will create positive impact or not is the part of the study. It is needed to be studied from the further research regarding the implementation of AI and ICT tools in colleges. The researcher states that this AI ICT tools are essential for today's development of the students in overall academic performance.

References -

1. Devi, S.et.al. (2012). ICT for Quality of Education in India. IJPSS. ISSN: 2249-5894. Volume 2, Issue 6.

2. Eng, S. T. (2005). The impact of ICT on learning: A review of research. International Education Journal, 2005, 6(5), 635-650, ISSN 1443-1475.

3. Barodiya,P. et.al.(2015). Use of ICT in Teacher Education. The International Journal of Indian Psychology ISSN 2348-5396 (e) | ISSN: 2349-3429 (p) Volume 2, Issue 4, July – September.

4. Baskey, K. S. (2017). Use of Ict and Development of Teaching-Learning Activities: A Micro-Study In The District Of Purba Burdwan, West Bengal, Journal of Education and Development, Vol.7, No.14, December 2017, ISSN: 2248-9703.

5. Bhattacharjee, B. and Deb, K. (2016). Role of ICT in 21st Century's Teacher Education. International Journal of Education and Information Studies. ISSN 2277-3169 Volume 6, Number 1 (2016), pp. 1-6, http://www.ripublication.com.

6. Aksoy, H., (2003) Used of Technology in Educational Organizations and a Solution Regarding Their Effect", Education Science Society. Ankara Aşamam Press.

7. The Atlantic, ("Artificial Intelligence Promises a Personalized Education for All"),

8. University of San Diego's innovative, online Master of Science in Applied Artificial Intelligence program, an AI Industry thought leader and education partner

9. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? International Journal of Educational Technology in Higher Education, 16(39), 1–27.

10. Bernard, H. R. (2011). Research Methods in Anthropology: Qualitative and Quantitative Approaches (5th ed., p. 681). Lanham, MD: Alta Mira Press.