

ARTIFICIAL INTELLIGENCE AND INFORMATION & COMMUNICATION TECHNOLOGY IN MANAGEMENT EDUCATION: NEED TO BE IMPLEMENT

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Abstract

Social, political, economic and cultural changes taking place at the global level play an important role in leading to new trends and challenges in the field of management education. To make education more effective, digital media is moving very fast nowadays. Artificial intelligence (AI) and Information and Communication Technology (ICT) are digital techniques are very important in enhancing the quality of education. The use of AI and ICT in management education emphasizes more and more to promote student-centered education. The management education highlights the use of ICT and AI to make student outcomes efficient and effective. The world is moving very fast in the field of digital media and according to the way in which the role of AI and ICT is becoming increasingly important and will develop more new dimensions in the future. AI and ICT will revolutionize the field of education. There will be definitely be new uses in the technology sector in the coming future, there will be new tools and techniques in AI and ICT which will be more powerful and there will be more new things in education which is probably beyond our imagination. In this paper, we describe why we need AI and ICT in management education, types of AI and ICT applications, their impact on education system, uses of AI and ICT in recent management and also discuss about future of AI and ICT. Finally we described growth of AI and ICT knowledge and practice.

Keywords: Artificial intelligence, Information and Communication Technology, needs of AI and ICT.

1. INTRODUCTION

Digital Technology has become a very important part of our normal life. Smart phones, tablets, smart television, gadgets all these products are made by digital technology which make human life easier, smarter and accessible. Digital technology has not only enhanced the way we live but has also become an important part of our lives. Digital technology has touched every sphere and aspect of life during the recent revolution and has even not left the field of education. The connection between digital technology and education is unique and admiring which is probably not so good with any other field. This technology has greatly accelerated digital learning; due to which the importance of digital learning is increasing day by day globally. In current scenario Artificial Intelligence (AI) and ICT (Information and Communication Technology) have become an integral part of digital learning. Artificial intelligence is parts of computer science that emphasizes the creation of such machines that behave like humans, thinking like humans and

work like humans such as speech recognition, solving problems, learning and planning can be done by AI. Now AI is the essential part of daily life. ICT is the most important integral part of today's education sector. It is a tool that enhances administrative activities of higher education institute. Considerable change is feeling in the traditional way with the introduction of AI and ICT in education filed. As per **Johnson (2019)** "5 ways AI is changing the Education Industry" explain about how AI change our normal life and how it is a boon for education management. As per **Richard (2015)** "The role of ICT in Higher Education in the 21st Century" he highlighted the impact of ICT on higher education in the 21st century and also tried focused on how fast ICT will progress in 21st century. According to **Oliver 2002** "The role of ICT in Higher Education for the 21st century: ICT as a change agent for education" he has discussed the various effects of ICT on higher education and also examined the possible developments in the future. He has tried to find out how ICT will impact the way universities and college programs are offered and distributed in future. Researcher **Schmelzer (2019)** described that "AI Applications in Education" highlighted about AI applications in education and what is the impact of AI on education.

An attempt has been made in this paper -

1. To explain the significance of AI and ICT in management.
2. To study the effect of AI and ICT in management education.
3. To study about future scope of AI and ICT in management education.

2. REVIEW OF LITERATURE

According to **Garcia (2019)** "The use of Artificial Intelligence in Education" explores the use of AI in education. As per **Schmelzer (2019)** "AI Applications in Education" highlighted about AI applications in education and what is the impact of AI on education. According to **Johnson (2019)** "5 ways AI is Changing the Education Industry" explain about how AI change our normal life and how it is a boon for education management. As per **Allen (2019)** he has described how we can analyze the new challenges and possible policy solutions through artificial intelligence and other emerging technologies. As per **Roxford (2018)** AI is not only focuses on what the teachers teach but also emphasizes on how they teach. **Raja and Nagasubramani (2018)** has described ICT as a boon but has also highlighted its negative impact on teachers and students. He told that teachers and students should take maximum advantage of this facility by reducing its negative effects so that we can have a technically equipped India in the education sector in future. According to **Richard (2015)** highlighted the impact of ICT on higher education in the 21st century and also tried focused on how fast ICT will progress in 21st century. **Ghavifekr et al. (2013)** described about applications of ICT and types of applications. Researcher **Venezky (2007)** explained how technology affects the classrooms and how we can take education to a new level by using technology resources. As per **Oliver (2002)** the various effects of ICT on higher education and also examined the possible developments in the future. He has tried to find out how ICT will impact the way universities and college programs are offered and distributed in future.

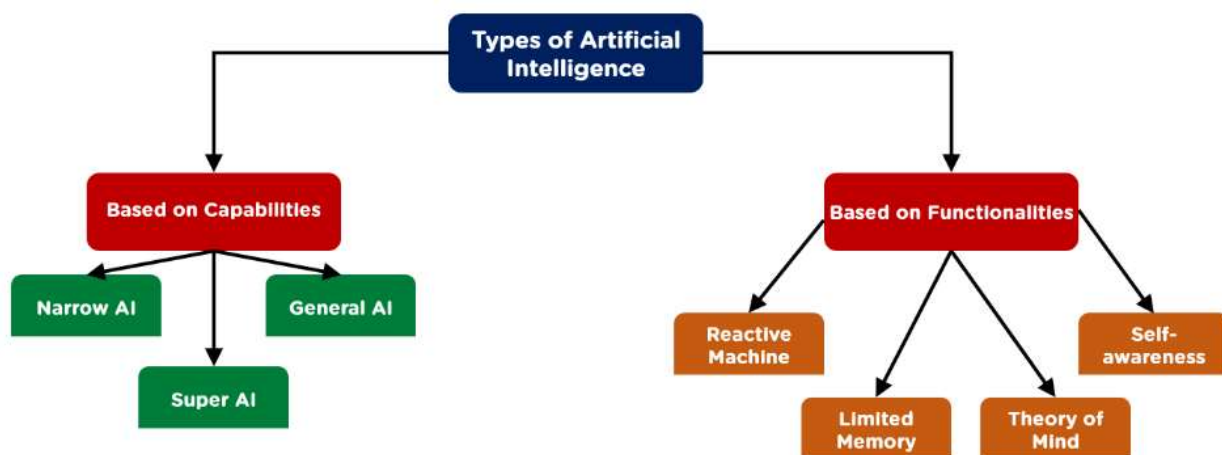
3. NEED OF AI AND ICT IN MANAGEMENT EDUCATION:

Today's era is educational era and it's growing rapidly. The use of ICT and AI is considered as a teaching and learning tool but it's also important in administrative organization. Education has become much easier after introducing AI and ICT in education. People have changed their way of learning because they have smart devices and smart computers so that all the facilities can be easily available as long as the computer is connected to the internet; students does not have to be physically present in any class to study. AI and ICT is also allowing to conduct administrative tasks so that the toughest task can be completed in less time and the teachers gets more and more time with the students and has time to discuss the changes made by AI and ICT in education. Every student has different capability and learning potential, training them all on the same skill or measuring them through the same exam is not justifiable. Thus we need a system that can cater to persona of each individual. AI can bridge that gap. Not only bridging the gap, it's almost impossible to transform the education given the limited resources and manpower across the world.

4. TYPES OF ARTIFICIAL INTELLIGENCE (AI)

As per the following figure AI can classify as type 1 and type 2

Figure -1: Types of Artificial Intelligence



Source:-<https://www.simplilearn.com/tutorials/artificial-intelligence-tutorial/types-of-artificial-intelligence>

a. Type 1 (Based on Probabilities):

- **Narrow AI:** It is focused on narrow task. It consists of machines which are not very intelligent in doing their work but they are made in such way that it looks smart.

- **General AI:** It is also known as strong Artificial Intelligence. It can easily comprehend and learn any kind of intellectual job that a human can. It also helps to machine for applying different knowledge and skill at different situation.
 - **Strong AI:** Machines that are very intelligent that can actually think like human being and complete tasks on their own. It can work better than human.
- b. Type 2 (based on functionalities):**
- **Reactive Machines:** This is one of the basic forms of AI. It contains that machines which do not remember the pervious memory and the previous information cannot be used for any future action.
 - **Limited Memory:** In this AI system can use past experience to inform future decisions. In this information cannot be stored permanently.
 - **Theory of Mind:** This type of AI should have the power to understand people's thoughts, belief, feelings and expectation and also be able to interact socially. AI has not yet been completed in this area. There is a lot of improvement in this field.
 - **Self- Awareness:** This type of AI has its own consciousness, self- awareness, super intelligence and sentient. In easy words this type of AI is complete human being. This kind of AI does not exist yet, but if it is achieved then it will be a big milestone in the field of AI.

5. DIFFERENT TYPES OF ICT HELPS IN EDUCATION:

- 1. Smart phones and tablets:** we are familiar with this technology and used on daily basis. Whoever thinks that a smart phone is only for talking, either does not have a smart phone or does not know many of its features. Smart phone users want to have such device that not only entertains them but also does all the work that was possible only on PC (Personal Computer).
- 2. Mobile wallets:** A mobile wallet is a digital version of a wallet to be kept in a pocket. It stores the payment details, for example debit card and credit card that we use to make payments.
- 3. Flipped classrooms:** A flipped classroom is an instructive strategy that includes blended learning that reverses the entire learning environment by providing mostly online or instructional material outside the classroom. It also includes activities under which homework can be considered in the classroom.
- 4. Mind mapping:** The graphical way that represents the idea and concepts is called mind mapping. It is a visual thinking that helps in understanding, remembering and generating new ideas. It presents the basic elements and techniques in a visual way how to create maps in mind.
- 5. Social media:** Social media is a computer-based technology that facilitates the exchange of ideas and information by building communities through internet.
- 6. Digital textbooks:** Digital textbook is also known as e-book. They may serve online courses and Massive Open Online Courses (MOOCs).

6. IMPACT OF AI AND ICT ON EDUCATION SYSTEM

Education is an area that has unlimited potential for new use. New technology can streamline everything to the student's reach apart from accelerating and accelerating the learning process. New technology affects the field of education as follows:

6.1 Impact of AI

- **Automating and Expediting Administrative Tasks:** AI is the one simplest and impactful way to speed up the process of educational and administrative department.
- **Outside the Classroom Support:** Through this technology, tuition and study programs are becoming more advanced. This technology is capable of teaching fundamentals to students struggling with old concepts. Such devices are designed to support the approach of teacher and tutors to overcome the difficulties of students.
- **Adaptability of Assessment and Educational Support Software:** AI provides learning opportunities exclusively in assessment software and digital textbooks. It emphasizes on the creation of devices that can facilitate the learning process of students.
- **Where and How We Educate:** Under this, the nature of compulsory education will almost change as AI will become more prevalent. Online classes have also increased under this technology and students choose classes according to their level of learning.
- **The Shifting Face of Curriculum Materials:** Already there are AI tools exist that produce student's customized curriculum using the curriculum outlines provided by the teachers. Course content has now reached people in the form of iPods and laptops through digital devices within and outside the classroom.

6.2 Impact of ICT

- **Investigating reality and building knowledge:** students can use ICT tool to interpret and analyze the outside world for better knowledge. The information can be accessed online system or through data logging. Special knowledge can be exchanged and acquired through ICT in a very short period of time.
- **Active learning and authentic assessment:** ICT potentially increases the chances of acquiring education and knowledge. ICT is capable of delivering education anytime and anywhere through which innovation in learning activities develops.
- **Engage students by motivation and challenge:** ICT provides students with the opportunity to create a wide range of learning experience. It engages students by motivating them and facing challenge.

- **Provide tools to increase student productivity:** ICT has completely changed the teaching and learning process and as a result of this, there have been more changes in the way students learn their creativity. To develop the creativity of the students, they will have to give opportunities and increase their problem solving ability.
- **Increasing learner independence:** A Computer system provides freedom to students in the learning process. It gives them complete freedom to know when to learn, where to learn and what to learn.
- **Management of learning experience:** Management problems can be easily solved in high quality educational programs through ICT because there are many tasks which are time consuming and tiring of the teachers.

7. USES OF AI AND ICT IN MANAGEMENT EDUCATION :

7.1 Uses of AI

- **Teachers and AI collaboration:** In education, AI combines the best qualities of teachers and machines and gives them the best results. Today's students will need to work in the future, so it is important that our educational institutions teach students how to use technology and how it helps to cope up with dynamic business environment.
- **Differentiated and individualized learning:** In the field of Management Education, AI can develop these digital platforms which are useful for providing learning tests and feedback to the students. It is possible for a machine to read what a student is struggling to understand and they will revise a lesson by taking that feedback. The idea of creating a curriculum to suit each student's need is probably not true today but this would be handy for AI operated machines.
- **Universal access for all students:** AI tools are available globally for classes of people including people who speak different languages or people with visual hearing impairments. This technique opens up possibilities for students who cannot attend school due to a disease or need to learn on particular subject that is not available to them in their school.
- **Tutoring and support outside the classroom:** Through the AI, we can easily learn the most difficult subject. Tuition and study programs though AI is becoming more developed. The students will get a new way of personal development through global conference. Whether education can be a little slow to adopt AI and machine learning but the changes are starting and will continue.

7.2 Uses of ICT

- **Plenty of educational resources:** We can access academic information at any time by the use of information technology. Both students and teachers use ICT to acquire and exchange education materials.

- **Instant access to educational information:** Information technology speeds up the transfer and distribution of information. Students can easily collect data through computers and new technologies. Experts have many applications that can be used by students to get information very fast. These mobile phones applications are replacing the old methods. Now we can easily access any mobile phone on world library. We can read the book and can be easily obtained.
- **Full time learning:** We can access any information at any time, no matter where it is or the time of day or night. ICT has facilities online education allowing us to easily access anywhere. We can get the information while sitting and in the whole world. We can study same thing and when it comes to getting job, all the students have the option to get the same job on equal opportunity.
- **Group learning:** Information technology has helped students to learn in groups. It will also help teachers to teach students in groups. Now with information technology, schools have created academic forums where students can express themselves on a specific subject with no fear. He can also engage in videos and text chatting. Another advantage of online group discussions is that all members are the same it is not necessary to be in a class and it is also not necessary to belong the same school; that students of any group can be around the world and we can share our educational information with them.
- **Use of audio visual:** An Information technology has completely changed the way we learn and interpret information. Using audio visual education helps students learn faster and easier. With the introduction of audio visual technology in education students are enjoying learning by using the pictures on the projector, we can easily help students understand anything.
- **Long distance learning:** ICT makes it possible for students from all over the world to study anywhere through online education. This has been possible due to cheap broadband internet for both developed and non-developed countries.

8. FUTURE OF AI AND ICT

The future of AI and ICT is very bright in our country and is taking India towards progress through leaps and bounds. This makes it clear that AI and ICT will enter every aspect of our life in the coming future. AI and ICT have not left any field with its innovative ideas. Since it is used widely in internet industry it will also expand to other industries as well, like tourism, manufacturing etc. Similarly education industry won't be untouched from the scope of AI and ICT. Its contribution in the field of education has been most beneficial; because education is the basis of knowledge and progress of all countries. If the field of education effective then a country can be completely transform through the development of human resources and increase in productivity. Especially in the context of emerging country, level of Management education and population literacy plays an important role for an advanced economy. From AI and machine learning to automation and digitization, the global learning sector has been most technology affected area. AI

and technology were anticipated to transform human life for decades and now they can be experienced for real by anyone around them. The importance of the developed education sector in India has increased. As digital practice is being adopted; it is important that effective methods of better education and teaching are availed in a manner. AI and ICT have brought a new revolution in the field of Management education and administration around the world. India is one of the leading developing countries that has followed this trend and is also adopting innovative technology and AI in the field of education. In the era of digitization, technology and knowledge have biggest issue in national and international debate. At the same time, they have become an important part in almost all the field related to the education landscape. They have revolutionized the field of Management Education. AI and ICT are preparing the role of future education especially in India. They have emerged as a boon for both the teachers and the learners. ICT is a transformational tool that when used can promote change in learner- centered environment. Students will need to know the digital age to flourish in the digital world. Through ICT, we can give education sector a form that also leads to innovation and creativity. In future, students from all over the world together with ICT can study online together. There are lots of online courses available for Management Education. The ability of AI to change the management education sector in the future is five-pronged, which is as follows:

1. Students can get additional support in the field of Management Education through AI tutors.
2. The powers of AI will be leveraged to evaluate students.
3. The time taken for grading through AI can be reduced.
4. AI will be helpful in customizing education to suit the needs of every student.
5. AI will indicate the locations of the course where improvement is required.

AI and ICT in education have not only helped in reducing the administrative burden. It has also changed the field of Management Education.

9. Conclusion

Education is very important in today's scenario. The education system acts as a catalyst for the development and growth of the nation. Education plays an important role in the economic, social and global development of any country and in today's educational era, which is at the forefront of teaching technologies; to keep pace with the latest developments there it is necessary for people to gain knowledge through ICT based teaching technologies. In view of today's educational scenario, it has become necessary to make our education system so strong that it can easily meet the global challenges facing in the future. Education not only enhances a person's skills but also enhances his earning power. It also increases his ability to absorb new ideas as well as his participation in society. So that they do not have to face any challenge in succeeding personally and professionally.

It is not uncommon for educators have to fear how their role would be affected by the use of technology. It is true that when systems changed, there are some things that we think are

reasonable to fear. In some instances, there are actually logically justifiable reasons for such fears. However, at the same time, it would be unwise to ignore the reforms and possibilities in the field of education coming through AI and ICT. It is actually supposed to bring about a dramatic improvement in the overall educational experience with AI and ICT. In fact, when you have the right teacher using it AI and ICT can actually do wonders that traditional methods of education may not be able to do. In the future, there will be a significant revolution in the field of education through AI and ICT. Technologies like AI and ICT will be present in the field of education to meet the challenges in the future.

This paper highlighted the overall need and its impact on management education.

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