MOOCS AND ARTIFICIAL INTELLIGENCE IN EDUCATION

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Abstract

Artificial intelligence has enhanced human life in many ways. It can lead to improved performance in the field of education. It will be the future of education and will benefit students as well as educators. Because of Massive Open Online Courses (MOOCs), many people have taken high quality courses for free from the best of schools and teachers. Artificial intelligence (Artificial Intelligence) has played an important role in making MOOCs what they are today. Given a smart device with internet connectivity, the information is at our fingertips. This leads to better deliverance of courses. Artificial Intelligence is also changing the education scenario rapidly. There has been a boost of Artificial Intelligence in the field of education as opposed to traditional education.

Keywords: *MOOCs, Artificial Intelligence, blended learning, chatbots.*

INTRODUCTION

MOOCs provide free access to quality courses for free from the best of schools and the best of teachers. It provides an equal opportunity to everyone. In this digital era, online education can be perceived as an extension of distance learning. MOOCs are truly a tremendous technological leap and what makes them so attractive is that they offer learning at no cost. As technologies and theories evolve in this digital age, we need to constantly prepare ourselves to unlearn, learn and relearn accordingly.

There is a growing number of Massive Open Online Courses. MOOCs help more teachers enable more learners to learn more things and delve deeper into a topic. The increasing number of active users of MOOC indicates that electronic and distance methodologies are highly valued by the world. Coursera and edX are the top-notch MOOC providers. MOOCs are the evolutionary turning point and are bound to change the higher education format.

MOOCs cater knowledge to students who may not have access to it otherwise. It can be of use to learners who can't afford the cost of higher education. Non-traditional education through MOOCs is a useful form of online learning and can complement traditional university learning. They include a range of learning activities designed to help students to build their

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skills and knowledge. Institutions of higher education present the obstacles of entrance examinations, fees, distance, expenses, etc. Universities worldwide are opening virtual doors to students in the form of MOOCs.

According to the four-quadrant approach followed by SWAYAM, a MOOC has the following:
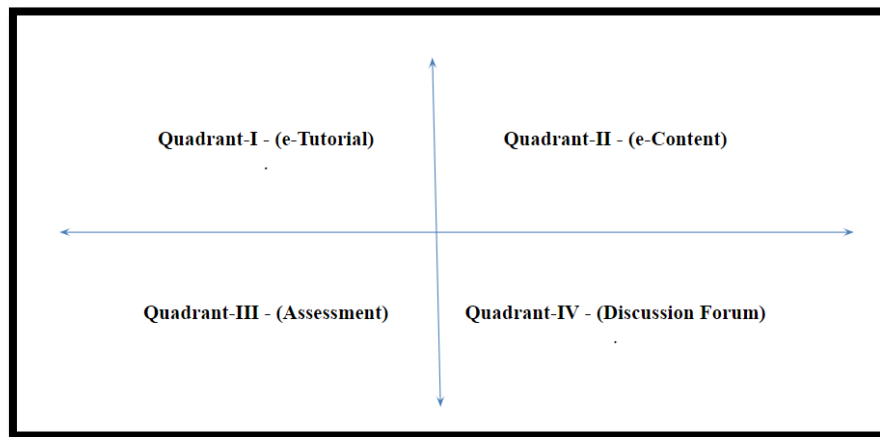
1. **e-tutorial:** This consists of video, audio, animation, simulation, virtual labs, etc.
2. **e-content:** This consists of (OER)Open Educational Resources, e-books, instructional material-specially prepared reading material that can be downloaded and printed.
3. **Assessment:** Assessment is in the form of quizzes and tests.
4. **Discussion forums:** With the help of discussion forums, we get a platform for posting queries and doubts.

The rapid increase in technology, more specifically, Artificial Intelligence has made it easier for people to work more effectively and efficiently. The mention of Artificial Intelligence brings to our mind a supercomputer-a high performance system with immense processing power. Artificial Intelligence has revolutionized and created a niche in the world. From kids to adults, people either use Artificial Intelligence or are aware of products related to Artificial Intelligence in some form or the other. Currently, Artificial Intelligence is rapidly and greatly affecting the educational landscape.

Artificial Intelligence can perform tasks that usually require human intelligence. Sometimes, it is necessary to search beyond the norm, develop new ways of doing things. The developed countries have integrated Artificial Intelligence within its curriculum at the school level. AI covers a broad range of domains and applications and is expected to impact every field in the

future. The educational transitions powered by Artificial Intelligence are fuelled with creativity as the current education is advocating for interactive learning.

Artificial Intelligence can perform assessment much faster than a human can. It can assign coursework, track student progress, generate reports on their performance, communicate with students and parents everything within one space. This means that teachers can provide constructive feedback on any assignment or assessment at any time. This would also allow teachers to give individual attention to students which in turn would help to foster a healthy classroom ethos.

Artificial Intelligence can also augment teachers by providing insights about students' learning styles and giving hands-on feedback for students who need more practice with a particular topic or skill. Artificial Intelligence can be used as an educational tool that guides students towards their goals by providing personalised yet constructive feedback.

As the main idea is to maximize learning across all the subjects and disciplines, AI helps in the following ways:

1. **Personalisation:** The content can be customized as per the level and need of the student.

2. **Improve Video Navigation:** The student can go back and forth and check the video content and check what part was missed which is not possible in a regular classroom setting.

3. **Feedback:** When the feedback is constructive and timely, it is lot more useful for the student.

4. **Automation in content creation:** AI can create content automatically. So, this will reduce the workload on teachers.

Devedžić observed that Web Intelligence and Artificial Intelligence research fosters improvement in the education sector by learning, adaptation and performing intelligent functions. Indeed, Artificial Intelligence has been adopted and permeated various areas of education. Use of Artificial Intelligence in education has a major impact, including personalized learning, smarter content and improved effectiveness and efficiency in education administration among others. As Artificial Intelligence continues to develop, new ways of application in education emerge. Incorporating Artificial Intelligence-based strategies would enhance students' learning experiences within MOOCs.

Technology is there everywhere, in every step of our life. We need to keep up with what's changing and hence be updated with the latest trends in education. Technology has always played a vital role in education but its current use is more widespread because of the availability of smart devices and adaptive curriculum. With the rise of Artificial Intelligence in education, there are many different ways it can help students learn. The following Artificial Intelligence powered technologies will help education:

CHATBOTS

Chatbots are an example of Artificial Intelligence powered educational applications that students can use. These are being increasingly implemented into classrooms where students can use smartphones or laptops to chat with bots designed to help them understand specific topics in various subjects. Chatbots can help students learn new concepts and delve into a topic. Chatbots are the future of technological assistance. It reduces the tasks assigned to teachers. Examples: Applications like Cogni, Woebot, Brainly are popular examples of chatbots in Artificial Intelligence.

AUGMENTED REALITY

Augmented Reality is the real time integration of digital information with the user's environment. Augmented Reality gives the best interactive experience with real world and computer-generated content. Bringing Augmented Reality to classrooms would be a great way to integrate experiential learning into education. It's a fun-and-learn approach with increased engagement and deep understanding instead of the traditional one.

Artificial intelligence can make MOOCs smarter. Differentiated learning programs can be used in all learning aspects in the future – whether in the classroom or online. Flipped classrooms can become the new normal devoting more time for problem solving, probing and critical thinking thus catering to the different life skills.

EXPERIENTIAL LEARNING

The theory of experiential learning is mainly based on the work of eminent educational scholars such as Dewey and Piaget who put the experiences at the forefront during learning. They were of the view that experiential learning theory describes learning as the mechanism by which experiences are modified to make learning meaningful. The concepts gained from direct experience or making inferences can be converted into understanding through critical reflection or productive exploration. Mahatma Gandhi's Nai Talim focused on creating a

holistic and casteless Indian society. He was of the view that knowledge and work are not separate nor could they be separated. By integrating Nai Talim he wanted to create self-reliant communities and achieve sustainable development.

EXPERIENTIAL LEARNING THROUGH MOOCS AND ARTIFICIAL INTELLIGENCE

 By implementing blended learning, materials for students to review outside of class for course preparation, leaving class time for problem-solving and interactive development is done via MOOCs. They are learning by doing as it is hands on experience. As a result, the attendance is up, retention is up, the grades are up and most importantly, students focus less on memorizing facts and more on developing the problem-solving skills which is indeed the need of the hour.

By making use of MOOCs for out-of-class activities, teachers can check the student progress and understanding through formative assessment in order to reshape the direction of the course based on student needs. Blended learning through MOOCs provide a hands-on approach that makes learning more effective for on-campus students and it also caters to distance and online learners.

 On-campus students get more class time to focus on learning through hands-on experiences while those taking the online course get the same chance to learn the materials and can do the hands-on portion at their own pace. Not only are MOOCs popular, but there is a great interest in knowledge-sharing across the world – for everyone, including students, educators and professionals. As MOOCs have wider access, it allows educators globally to use the materials and blended teaching methods in their own classrooms.

The opportunity MOOCs provide to focus on hands-on learning both in the classroom and in the digital domain that enables problem-solving is a great solution to an ever-present need for more innovators in our world. Learning by doing through hands-on activities is crucial to catering to the innate curiosity of students.

In Artificial Intelligence related activities, students will be interacting with a chatbot and Augmented Reality. With Augmented Reality, students can explore things that they may never have the opportunity to see or learn about in real life. By engaging students in hands-on experiences and reflection, they are better able to understand theories and knowledge learned in the classroom and apply it in the real-world.

The expected outcomes will be:

Preventing dropouts

Artificial Intelligence can make accurate predictions of who will drop out early on. Accordingly, students can be alerted early on who have about a low chance of passing or rather failing and teachers can encourage them. To offer students more individual attention, MOOCs can also integrate chatbots which will respond to the current students' queries and online comments. Accordingly, the content and delivery can be tuned as per different category of students.

Increased online engagement

If students' doubts are catered to timely, it will increase student retention in a particular course. Also, the students' online engagement would increase. MOOCs provide millions of pieces of data on each student's interactions that could create richer learning experiences for students in all types of classrooms and improve learning. For teachers, Artificial Intelligence can be a new teaching platform and can improve communication and interaction with students.

Since it is blended learning, various 21st century skills like problem solving, creativity, critical thinking are instilled- which is the need of the hour. It will reduce the workload on teachers, giving them more time for individual attention. It can be extended to an inclusive setup. A learner can receive assistance by using Artificial Intelligence-powered applications which will provides them an assistance to solve their problem.

Artificial Intelligence can help teachers in creating content, helping parents in monitoring their child's progress in the system, and assessing them. This can help teachers reduce classroom management time, assisting parents in understanding their child's progress better and lessening teachers' workload. Thus, the Sustainable Development Goal (SDG Number 4) of ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all can be met.

Artificial Intelligence is an important factor for change in education. Every student will have equal access no matter their learning ability. It will lead to Inclusive Education in the real sense. This makes a massive difference since not all children learn at the same pace or possess similar skill sets. With the help of Artificial Intelligence, students can make their future bright.

When students participate in experiential education opportunities, they benefit in the following manner:

- **Better comprehension:** Students understand the content better and learn the art of comprehension.

- **Correlation:** Students learn the relationship between two or more subjects and hence don't view the subject as a standalone entity.

- **Self-introspection:** By doing hands-on activity, students become aware of the various skill sets they possess. They can know what ignites the fuel in them. They become aware of their interests and passions.

- **Collaboration with different organisations**: When experiential learning is taken a step ahead, it will lead to collaboration with different communities and with various organizations.

- **Meeting community needs:** As it is experiential learning, in the long run it caters to the needs of the community.

- **Life-skills and soft skills:** It finds the best in students and helps them gain self-worth by instilling self-confidence and leadership skills.

Relevance

MOOCs are important to distance learning students or those undergoing professional development in any field. The importance is two- fold one to the above mentioned as it will give an idea of how effective MOOCs can be designed and deployed. Secondly Artificial Intelligence is a field impacting many professions. So a course geared to Artificial Intelligence in education can be used to facilitate professional development of teachers in an area of contemporary relevance.

Significance

Creativity can be developed and innovation benefits both teachers and students. It gives scope for self-directed learning along with blended learning. The teaching learning methodology addresses the diverse class of learners. It is all inclusive learning. The shift will be from teaching to learning, student-centered approach, creative learning experiences for students. It gives scope for self-paced, self-directed and self-organized learning along with an interactive and blended approach. It will not only improve education but make it all inclusive by addressing diverse learners of the class.

CONCLUSION

MOOCs and Artificial Intelligence in education initially have evolved to online education platforms. The use of these platforms and tools have enabled or improved teacher effectiveness and efficiency, resulting in enriched content and improved quality. MOOCs and Artificial Intelligence have provided students with improved and rich learning experiences because of personalization of learning materials according to the needs and capabilities of students. MOOCs and Artificial Intelligence can be the next game changers in education.

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