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Innovation and Technology Development with Respect to Artificial Intelligence in Improving the Quality of Higher Educational Institutes

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Abstract

The innovation has become the most important aspect of any educational organization in this century. Education fields also is now behind in present days to add innovation and technology in various educational activities. The teaching learning process has become now dynamic and it requires problem based solutions to the real world problems or of the society . Students are benefited by various innovative practices followed in the higher educational Institutes . Use of ICT and use of advanced software's is common in many of the higher educational Institutes. The above paper is decent contribution in making awareness to the stakeholders of the educational Institutes and active use of the high end software's and hardware . Also use of robotics, machine learning techniques, Data Science and ERP packages to perform maximum tasks of the educational Institutes. and virtual classrooms in the future.

Keywords: Student, Innovation, Technology, Machine Learning, Skill, Higher education.

1. Introduction

What is machine learning? Machine learning is a subfield of artificial intelligence, which is broadly defined as **the capability of a machine to imitate intelligent human behavior**. Artificial intelligence systems are used to perform complex tasks in a way that is similar to how humans solve problems.

How AI and Machine learning in Higher Education Is used

Machine learning in higher education is **a form of personalized learning that could be used to give each student an individualized educational experience**. Here, the students are guided for their own learning, can follow the pace they want and make their own decisions about what to learn.

The Students are very sensitive to the learning methods used in schools and colleges. They are using all the practical and theory knowledge acquired during school and college life. The best planning of resourceful activities which will shape the career of the students is must and all the Institutes should take

this as a very important for the betterment of the students. The proper use of advanced technology in colleges will bring the positive impact on the teaching and learning process of the educational Institutes. Similar to many higher-education institutions during the pandemic,[2] one online university was facing a significant downward trend in student retention. The university explored multiple options and deployed initiatives spearheaded by both academic and administrative departments, including focus groups and nudge campaigns, but the results fell short of expectations. The institution wanted to set a high bar for student success and achieve marked and sustainable improvements to retention. It turned to an advanced-analytics approach to pursue its bold aspirations. To build a machine-learning model that would allow the university to identify students at risk of attrition early, it first analyzed ten years of historical data to understand key characteristics that differentiate students who were most likely to continue—and thus graduate—compared with those who un enrolled. After validating that the initial model was multiple times more effective at predicting retention than the baseline, the institution refined the model and applied it to the current student population. This attrition model yielded five at-risk student archetypes, three of which were counterintuitive to conventional wisdom about what typical at-risk student profiles look like

Artificial Intelligence in higher education for quality improvement :-

- Increase outcomes
- Increase access
- Increase retention
- Lower cost
- Decrease time to completion

The main areas to implement the AI and ML are as follow.

- Pedagogical implications of AI for teaching and learning in HE.
- Research on the effectiveness of AI applications for teaching and learning in HE.
- The impact of AI on the assessment of learning;
- The potential of AI technologies to enhance teaching and learning in HE.
- The impact of AI on the role of human teachers in HE.
- Social and/or ethical issues in using AI for teaching and learning in HE.
- Costs and benefits of using AI in teaching and learning HE.
- The impact of AI on the management and administration of teaching and learning in HE The AI and Robotics are common in any application now. Its need to make maximum use of the technology in higher educational Institutes. The better way is to make best systems to implement the process of teaching learning using AI tools and techniques

Customizable learning experience through advanced technology -

With machine learning entering schools, teachers will no longer have to worry about the logs they keep on each student. No more need to spend hours on delivering concepts and establishing goals for each student. The machine will be able to do it on its own.

The idea behind this feature is to help educators see how each and every concept is being “digested” by the students. Thus, instead of simply instructing the ideas to the general public, teachers can see what

methods are not working well and specify how exactly they can change the curriculum to make them work better.

Student path prediction and quality improvement -

Some companies have started developing software that can actually predict how well a student will do at school and what are their chances of dropping out. Based on the repetitive actions of a student, the program identifies their weaknesses and analyzes whether they can lead to expulsion.

So, if a student has issues with writing and with time this problem only gets worse, the program can analyze whether or not it is a kind of situation where one should be worried and start taking measures. Thus, it is not only a problem of writing a proposal. It might be a sign of inability to meet requirements in the long run. In this case, the help of essay writing services might be needed.

Better organization of the process

Artificial intelligence has the potential of organizing the content and curriculums in a better way, as it can analyze what works best and which concepts are understood better with certain techniques.

As a result, the efficiency of education grows significantly and the students are happy because they get to learn important things in a way that they are comfortable with.

Unbiased grading system to make the system better-

Teachers won't have to check students' assignments because the machine can do it for them. Scores and grades will not be affected by the attitude of educators toward their students (we're all people after all) but will be based on their performance exclusively.

The only issue is that it is still just a machine while checking requires much more than a set of technical requirements. So, some assistance from teachers will be needed anyway. For instance, Turnitin has recently developed a Revision Assistant. This program reviews one's essays and detects plagiarism in them. Based on the results of the analysis, each essay gets a score. Besides, students get to see what parts should be changed or edited to make their text better.

Overall feedback on both students' and teachers' performance

The students can not only be graded by the machines but also given feedback according to the analyzed data and their recent submitted works. Once the machine is taught how to analyze the progress a student is making over time as well as how well they understand different concepts the teachers are showing them, it will be able to assess it. Thus, tutors will know what parts of their job need adjustments. Meanwhile, students will see where they have gaps in knowledge. Moreover, they will see what patterns they need to

follow to achieve better results. Among good tools for this matter is Bright Bytes Clarity. It offers a profound research and best practical analysis, and develops a so-called strength gap analysis.

Suggested learning path

Once the software analyzes students' performance, it might suggest a better way to learn new material. It starts with the analysis of the existing knowledge of the curriculum. And once weak spots are identified, students receive suggestions regarding materials and further learning methodology.

Among the best systems for this matter are Mangahigh and DreamBox. According to the official website of the DreamBox, "DreamBox Learning Math is an adaptive, online K-8 math program designed to complement classroom instruction and deliver results". As fantastic as it sounds, machine learning of such kind can be a part of your classroom routine.

Matching students and teachers

Some software allows you to match students that need help and available teachers. No need to facilitate such appointments all by yourself or to try to fit another meeting into your busy schedule. The system will do all of it for you.

This is what New Classrooms does. They strive to create a personalized schedule for students based on their needs and pace of learning. No pressure at all. Students come as they are and the program adapts to them. That is how learning Math becomes a pleasure.

Educational experiments through Artificial Intelligence

Finally, AI can help educators make the process of obtaining new knowledge more fun and challenging with the aid of advanced technologies. All you need to start using this approach is an in-depth analysis of the best-working practices in your classroom. Once you have that, simply add more fun and creative tasks based on already existing successful activities.

Artificial intelligence has all the potential to speed up the progress in the educational establishments. Teachers will get to save time on their daily routine tasks. Therefore, they will be able to use this time to actually work with students.

Some people are worried that AI might replace tutors altogether. However, we guarantee that this will not happen. It will only help schools equip them better and help them prepare kids for the developing demands of the job market.

Besides, it is a known fact that the size of classes is growing and teachers need help to be able to give proper attention to each and every student equally. And that is the job for AI.

So, machine learning can take our education to a brand-new level as soon as schools implement it in their curriculums. AI does not have a positive image among the educators and we hope that this article will fix that. And we hope to help you see the positive effect of AI on the future of education.

Conclusion

The Paper is a most useful in case of students community and for the quality improvement in higher educational Institutes. Also management of the college. Advanced technology in educational Institutes will benefit the students community and all the stakeholders of the educational system Its very important to develop the student's personality in positive and they will become the best citizens of the country.. Creativity is improved with increase in self esteem. The future study can be conducted using actual data of the system used in the educational system.

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