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Intelligent Resource Effect on Current Education System

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Abstract

The system's advancements all transpired in step with time, giving kids the finest opportunity to learn at home. There were some obstacles in the way, but they were all overcome with great zeal to provide instruction at that crucial moment. All of these initiatives are beneficial in ensuring that every child has access to quality education. An innovative educational model can enhance the effect of education on individual life for economic benefits and better life quality with the help of digital technology. A multi stakeholders' partnership will definitely help to achieve this goal globally. The COVID-19 pandemic has presented a significant opportunity to modernize the entire system, with a greater emphasis on digital technology to maintain learning continuity, cross geographic divides, and disseminate the best practices now accessible. Rather than focusing on teaching children, the entire education system has to be knowledge-centric. Therefore, our next goal is to increase the knowledge of the generations to come rather than their level of education. Many instruments for skill development have been made available by the intelligent education system to help each person to reach their full potential. Every child's confidence will undoubtedly increase as a result of this. There are many opportunities in the world today, and with the help of our technologically advanced system, we can make all the data publicly available so that people may make better decisions for their own futures. Acquiring information is education's ultimate goal. Getting knowledge depends on several aspects, such as focus, resources, good mentorship, dedication and perseverance. All these factors directly or indirectly contribute to success of a person.

Keywords

Digital Technology, Partnership, Education System, Skill Development

INTRODUCTION

The control of the adaptive intelligent education system is segmented. These divisions collaborate to maintain the goal and educational flow while operating under a single, centralized system. Every category focuses on producing, updating, and maintaining content specific to that industry. If any modifications are needed from lower levels, it is communicated with the next segments. Basic computer education if started since childhood will make it easy for them to understand these technological advancements faster. These sectors—pre-primary, primary, high school, and university—are already segregated. There is a lower student-teacher ratio to enable more individualized instruction. To raise the standard of instruction in our classroom, it must be low. Since today's kids are smarter than ever before, our educational system needs to adapt as well.

For "Learning by doing," the educational baseline must be modified. It will undoubtedly aid in comprehending difficult ideas.

STRONG ROOT

Every topic in pre-primary is made to be relevant to the real world. Teaching language, customs, manners, numbers, cleanliness, gardening, interior design, or games are all included. The foundation of a child's schooling is the instillation of healthy habits and kind behavior.

Kids participate in both outdoor and indoor activities in a balanced way. All classrooms are now smart classes due to this. After showing them everything in class, send them outside and give them the task of finding out the same information elsewhere.

For example, most of the kids love to draw and paint in their childhood. They should be given the task to draw or paint in their classes as per their imagination and then write about it in at least one language. This will increase both their creativity and writing skills.

SPECIAL NEEDS STUDENTS

Thanks to the ever-more-advanced, intelligent, potent, and fantastic tools—like voice recognition, audio video curricula, multilingual learners, language translators, and more—students with special needs have gotten exceptional assistance from all over the world. They have an abundance of learning opportunities thanks, to this global platform.

Computers and other useful equipment are smarter than ever. They are intelligent like humans as they have similar cognitive capacities, learning capacities, adaptability, and decision-making abilities.

Children with needs are now able to access education thanks to technology. Assistive technology, which includes tools for text-to-speech and speech-to-text, can help students with disabilities engage more effectively with the content.

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INCLUSIVE TECHNOLOGY /ADAPTIVE APPROACH

By utilizing the teacher's knowledge of the strengths and weaknesses of each student, contemporary technologies can assist teachers in personalizing and customizing materials for their pupils based on system feedback. These intelligent tools can help teachers develop customized learning curricula based on their growth chart, even if it's a time-consuming process. It is possible to put more activities on the weak spot to enhance comprehension and expertise on the related subject. With additional films or quizzes, every student will receive individualized attention and exercises to improve his knowledge. It is able to generate personalized content based on the generated pattern. Data analytics tools can assist in identifying students who need more support, and adaptive learning software can modify the level of content based on a student's success. Teachers can better grasp subjects by using technology to support communication and teamwork.

"Computers which perform cognitive tasks, usually associated with human minds, particularly learning and problem-solving" is the broad definition of artificial intelligence (AI) [1]. They clarify that the term AI does not refer to a particular technology. It's a catch-all word for a variety of tools and techniques, including algorithms, machine learning, data mining, neural networks, and natural language processing. It will promote balanced growth and comprehensive development. Personalized learning experiences that are tailored to each student's speed, abilities, and weaknesses will be made possible by technology. AI-driven tests and adaptive learning systems will aid in identifying each student's unique learning needs as well as in improving comprehension and subject-matter proficiency. High accuracy predictions of a student's likelihood of failing an assignment or dropping out of a course have been made using algorithms [2]. At a large-scale distance-learning university, where it is not possible to engage the majority of students in face-to-face sessions, [3] applied several machine learning algorithms to analyze student behavioral data from the virtual learning environment at the Open University UK in order to predict student engagement. The authors want to create an intelligent predictive system that would let teachers recognize low-engaged kids on their own and intervene accordingly.

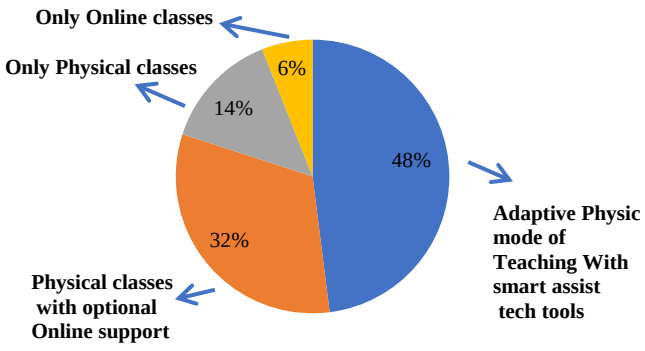

Fig. 1. Survey for different education modes

Digital content that is dynamic and textbook-based make up this system. With the use of interactive movies, simulations, and virtual labs, learning will become more participatory, immersive, and engaging, making it easier for students to understand difficult ideas. Having visual aids will assist you comprehend difficult subjects. One survey was conducted for 140 people to observe the peoples' view and in Fig. 2 it has been clearly shown that a systematic and adaptive approach will definitely have a big impact.

Through global platforms students can now work in groups and cooperate with people from many cultural backgrounds to enhance their global understanding and conversational abilities. Students will benefit from this global partnership in terms of increased self-assurance, empathy, respect for others, leadership, and teamwork. Here are some essential elements for creating a smart toolkit.

a) Performs Administrative tasks faster like student evaluation and providing feedback to students.
b) System based customization of content as per students' progress.
c) Worksheets generated on progress for student evaluation at different levels.
d) Transparent feedback report to student and teacher for deciding weak and strong points so as to be able to rework on that.
e) Projects be made to be a collaborative effort in the form of teams.
f) Create personalized content for students.
g) Plethora of opportunities to select courses as per interest.
h) Start training students from basic to advance in sequential manner.
i) Predict career path as per the progress throughout these years as per professional capabilities.
j) Huge database collection for making this system adaptive.
k) Real time analysis.
l) Virtual supervised counsellors.

Online adaptive quizzes were created by Ross [4] to help students by offering learning materials customized to meet each student's unique needs. This increased student motivation and engagement. According to [5], by enhancing the sense of presence, virtual avatars enable several physically distant users to cooperate in an immersive virtual environment. In [6], Bahadir implemented AI face analytics to improve the coaching function of teachers in technology-mediated learning environments.

It is crucial to examine these AI systems with a thorough understanding of how educators and students view the technology's influence [7]. These tools can be categorized by the process owners that our systems need to use them. Process owners are categorized according to their responsibilities.

Management Level

a) Most Advanced software
b) Smart classes in schools

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c) Audio /video enabled schools
d) Tools for taking attendance automatically
e) Learning systems in cloud environments

Teacher Level

a) Interest, ability, and needs analysis-based systems
b) Learning outcome detection system (for all levels of students)
c) Adaptive programs to improve student efficiency
d) Analytical based curriculum
e) Curriculum editing system

Mentor Level

a) Understanding individual student strength for career selection
b) Psychological support toolset
c) Supervised AI based Mentoring system (at all levels)

Student Level

a) Case study-based projects
b) Presentations
c) Worksheet submission
d) Assignment submission
e) Analyze their own performance

DIGITAL PLATFORM TRAINING

All personnel involved in the educational system, including instructors, support workers, and students, must complete official training on digital platforms. To make the most of it, everyone has to grasp it at the same level.

Digital literacy equips mentors and students to effectively explore and comprehend digital platforms. This is in line with the requirement that students be given the tools necessary to use technology for both learning and execution. Teachers and students can communicate and work together more easily thanks to technology. AI systems that assist teachers and students by continuously delivering feedback on how pupils are learning and how close they are to their learning objectives were demonstrated by Luckin [8].

Training the Teachers

To train teachers, we require idealized, centralized teacher training institutions that are overseen by a governing body, much like those in the fields of engineering and medicine. It is the duty of Central Institutions to appoint the most qualified educators.

It's possible for certain people to excel in mathematics, science, languages, or arts.

The teachers must then be chosen based on their qualifications and aptitude for the specific subject and for the appropriate class level, such as pre-primary, primary, and so on. A teacher is an asset since, even though they may not be the best for primary or high school, there is a possibility that they may be excellent for pre-primary education. For all members of the staff, including those who are not teaching, computer literacy must be at the highest level in order to embrace technologically oriented learning environments. If the goal is to make the best use of the restricted, supervised, and authenticated information and content that are available for teaching on online platforms. After that, training instructors across the nation becomes simple. The main causes of instructors' reluctance to use technology are either a lack of expertise or training or the unrestricted availability of unauthenticated data online.

Training Students

Education with technology has never been more entertaining or engaging. It has improved communication and teamwork among students, supported individualized learning, and raised student engagement. Technology has made it possible for all kids to get instruction in an innovative fashion that goes against the norm in our traditional classrooms. New York has the same access to online learning resources and platforms as a small Sikkim village. It's all a result of recent technology advancements. This makes it possible for students who live in faraway places to study and comprehend remotely, just like they would in person with the best mentors. Learning is now more dynamic and interesting thanks to technology. Games and simulations, for instance, can immerse students in actual situations. Students have benefited from this adaptive technology by improving their understanding and achieving higher results. By letting students choose what they wish to study at their own speed and focusing on real-world issues, technology improves reading comprehension. According to [9], presence in online learning settings refers to a factor that influences how students and instructors perceive each other's existence during the learning process. Instructors and students anticipate that artificial intelligence (AI) will have a beneficial effect by making them feel more connected, but it will also have a negative effect by raising the possibility of monitoring issues. A transparent approach eliminates all uncertainty regarding the systems and how they function. Students can get mentorships from trained and supervised online mentors for their personal and professional queries without getting judgmental. Educational games can make lessons into challenges as per current generation interests, motivating students to actively participate and learn. Gaming elements will boost retention and critical thinking skills. On the basis of the online survey, it was found that the Online mode and physical mode both must go hand on hand since starting of education and must be progressive in nature.

Training Support Staff

Test results and student performance reports can be computed and interpreted more quickly thanks to information technology. These materials are readily available digitally. Curriculum, content development, web-based platforms, robotics, video conferencing, and software-related concerns must be handled by the technical support team. Everyone must receive training from them. It lessens the effort for mentors and incorporates external feedback into the system. They are essential to the smooth operation of this whole new

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platform. With an enhanced learning platform, mentors are more efficient and effective. The entire evaluation process is being automated, and student assessments are being corrected. The chatbots can handle a variety of functions, including conversing with students, answering their questions, and dispelling common misconceptions. Using deep learning technology, their online virtual mentor can monitor the subjects that students have learned, determine when they should be revising, and remind them to revisit previous sessions at different intervals. Most of the time, it assists pupils to have the concepts ready.

FUTURE SCOPE

AI Amalgamation in Smart Class

Every week, students should participate in a "anything you ask" open forum led by an AI-developed, supervised, and regulated interactive class. Since it is impossible for a human to know every answer everywhere, AI steps in to assist. The following day in class, students are expected to share their interpretation of the same question. This way they will improve their presenting abilities and be able to clarify their ideas in an open forum.

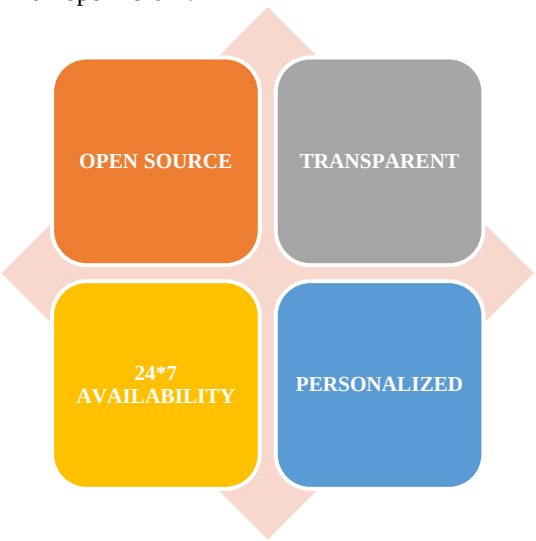

Fig 2. Benefits of using adaptive approach

Skill/Output Oriented

For the next five years, technology will match educational opportunities with job market necessities. The Employability Index, which has been subject to the government and private sector oversight for a five-year plan, is now available online as an open-source resource. This will assist students in making career decisions based on market potential. In [10] the author points out that "the accurate prediction of students' academic performance is of importance for making admission decisions as well as providing better educational services".

Workshops, webinars, and online courses will offer chances for skill development outside of traditional subjects to comprehend contemporary international trends.

Through technology, students will be able to collaborate globally and interact with classmates from all around the world. Diverse viewpoints and cultural understanding will be fostered by cooperative projects and virtual exchange programs.

Technology will make it possible to continuously analyze not only knowledge but also soft skills like creativity and critical thinking. Project-based learning and e-portfolios will offer a comprehensive picture of a student's abilities.

CONCLUSION

With inclusion of artificial intelligence in education, major transformations can be seen in the education systems and its processes. Not every AI model is complete, so it's important to know how well the AI model fits into reality. AI is not singular technology, it consists of a range of technologies and methods, such as machine learning, natural language processing, data mining, neural networks or an algorithm. Its combined usage made an intelligent and adaptive education system with human touch. Artificial intelligence should only assist teaching personnel and serve as a helpful tool for teachers, not take the lead in any aspect of educational activity. The usage of artificial intelligence and similar technologies should be done consciously.

Disclaimers

The opinions expressed in this paper do not represent those of any agencies or organisations. The opinions expressed in this paper are entirely the authors'.

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