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Title-Recents trends in Educational technology

Recent innovations in Educational Technology ::

The findings and advancements of this modern digital age have a great influence on the way we learn and perceive life.

Today's classrooms are one of the few places where we can witness the actual impact of modern technology. This ranges from virtual education, student privacy, paperless textbooks, adaptive learning, augmented reality, and improved access to learning resources, more creative mindsets to virtual parent teacher communications.

Here are a few among the top most innovative trends in educational technology that are going to make a huge impact in shaping the present student generation.

Paperless Textbooks: The digital devices such as tablets are now slowly replacing the heavy textbooks.

Cost was a highlighted issue; many schools have now recognized that this cost is much affordable over the time.

School authorities can easily upload the study materials every term or year on the same devices and save the extra cost of new textbooks every year.

The ease of accessibility and storage and comfort of carrying only a light weight tablet to school every day makes this a smart choice.

Artificial Intelligence:

The use of artificial intelligence in today's classrooms has really transformed the quality of education.

It can provide a great insight into student learning and improves the overall process with better communication.

Teachers can make use of its possibilities to speed up the grading and other daily chores and utilize the saved time for quality teaching.

It acts as a personalized learning companion to meet a variety of student needs and help teachers to act as learning motivators.

The automation in classroom can help both students and teachers to stay more productive in the daily chores.

VR/AR In Classrooms:

By accommodating the possibilities of visual learning and overcoming language barriers, augmented reality has made learning more effective.

As the price of AR and VR equipment are showing a downfall, more of teachers are now making it a part of their teaching strategy.

Virtual field trips are one of the most effective benefits of VR in classrooms. This helps students to go deeper into various subjects at the comfort of their classroom.

Moreover, this technology has enhanced creativity among students through imaginative play and thinking.

Social Media Influence:

Social media has a great influence in almost all industries now and. It is in fact playing a crucial role in shaping today's classrooms.

This platform is helping teachers and students to globalize the classroom and connect easily with others with similar interests and mindsets.

The right use of this social platform is giving opportunities for students to think about the lessons outside the classroom.

Online Courses And Learning:

The present education industry is more inclined to online courses and learning than just the classroom education.

Students are largely utilizing the possibilities of online courses to study their preferred field of interest and research on their favorite subject areas.

Students are also utilizing similar online courses to have an additional educational support on their tough subjects.

Digital and Media Literacy:

As students are spending a considerable amount of their study time online, it is high time for the teachers to understand the importance of digital and media literacy.

The school authorities are taking initiatives to guide them on how to behave online which includes rightly processing information they encounter online and communicating online by respecting others' views.

In fact, the inclusion of digital and media literacy in the curriculum is aimed at helping students to learn how to responsibly utilize online resources.

Embedding Innovative eResources:

Educators who are looking to incorporate digital content to the classrooms can now make use of the vast array of educational resources available online.

However, selecting the right set of teaching materials from this wide array of information is the key.

Today's technology is giving them options to access refined and well-researched digital materials that are relevant for their purpose.

Gamification and Gamified learning:

Creatively engaging students in learning is one of the smartest means of getting their attention for a longer time.

Understanding the importance of games to engage students, schools have shifted their strategy to gamification and gamified learning in classrooms.

This not only improves their interest for learning but also instils a friendly competitive mindset and invokes their creative thought process to win situations.

Gaming through digital platform also improves their social behaviour and problem solving skills.

Wearable Technology:

This technology is creating a big bang in the school campuses as wearble devices are not only making the kids safe but also improving their quality of life.

As it can track the location, students are safe inside the campus and parents and teachers can easily track them.

The options to make payment through these smart devices avoid theft and bullying while facilitating paperless transactions.

Data Privacy and Cyber Security:

In this modern educational system, one of the major areas of concern is the data privacy and cyber security of students.

So authorities are making serious steps towards preventing cyber bullying and maintaining their desired privacy in the digital platforms.

This is in fact a shared responsibility and only a mass campaigning can make a vital improvement in the areas of concern.

School authorities are now more focused on providing lectures and campaigns in schools led by scholars to educate students about data protection and cyber security.

Flipped Learning:

The modern educational technologies are putting forward the possibilities of inverting traditional teaching methods to enhance learning process.

In this teaching strategy, students are making use of the advanced educational technologies to have a look at lessons beforehand.

They go through tutorials or videos to study the lessons at home and utilize the classroom time to do assignments.

They can work out problems under the supervision of teachers and clarify their doubts if any.

Moreover, having an idea about the subject beforehand makes it easy for students to easily catch up what teachers are talking about.

Analytics and Data Driven Decisions:

More than getting drowned in large collection of data, educators are now more focused on understanding the analytics and coming up with data driven solutions.

With the advancements in technology, they are not just conducting analysis and keeping data aside but making serious steps to ensure that the results are relevant and diagnostic.

Effectively utilizing the wealthy information we have is the key to experience positive results and changes.

Relevance to STEM Materials:

As advancement in technology has made many remarkable changes in today's education system, schools are slowly changing their focus to science, technology, engineering, and math (STEM) subjects once again.

This in fact places a platform for institutions providing higher education to develop a more engaging curriculum for coding, robotics and programming.

Moreover, the possibilities of integrated learning are helping educators to provide the best possible learning experience for students.

With the rise in technology and innovations, it is normal for students to expect seamless technology in school.

There is nothing surprising to see if machine learning overcomes other learning aspects and school systems can turn more scalable.

In the next few years, all or most of the critical data will be stored in the cloud.

Above all these elements, a serious thinking should be dedicated to improve social-emotional skills and student well being.

As outside the classroom learning is becoming more important, the collaboration tools will become more prevalent. Moreover, the big data analysis helps schools to learn the areas where the students excel and identify the areas in which they struggle and thus provide additional support.

Priority Areas of Research in Educational Technology:

The most compelling topics among educators who embrace technology to transform teaching and learning are not about the tech at all, but about the students.

Here's a list of the hottest trends in edtech right now.

1. Computational thinking

Computational thinking (CT) is no longer a concept discussed only in computer science or coding classes. Educators are finding that computation thinking is a cross-disciplinary skill and is just as relevant in language arts and math classes. Educators are becoming skilled at incorporating CT components like decomposition, generalizing, algorithmic thinking, evaluation and abstraction – no matter the subject area. Together, these steps teach students the foundations of how to approach a problem and solve it using reasoning, creativity and expression, as well as providing a new way to demonstrate content knowledge.

2. Professional learning

Professional development (PD) is out. Professional learning (PL) is in. What's the difference? Instead of developing people via PD (collective eye roll for the sit-and-get of the past), PL focuses on providing ongoing, embedded opportunities for growth using active methods. Professional learning is differentiated, personalized and workday friendly for busy educators.

Look for an added focus on professional learning for instructional technology coaches, helping them up their game as they guide staff integrating technology in their classrooms.

3. AR, VR and mixed reality

In the past, discussions about artificial reality (AR), virtual reality (VR) and mixed reality in schools focused on using what others had developed. Now, both educators and students are moving into creation mode with these technologies. Students are harnessing their creativity to develop artifacts of their learning in all curricular areas using these tools.

4. Artificial intelligence

How can we take advantage of artificial intelligence (AI) in learning environments? Digital voice assistants like Alexa and Echo have made their way into classrooms, but educators are just uncovering ways to use them. Look for AI to explode in schools in the near future, predicts ISTE board member Hall Davidson, senior director, global learning initiatives for Discovery Education. He sees the potential of AI to support students in reaching higher levels of learning and thinking as they use the devices to practice asking questions and thinking out loud.

5. Global learning

The concept of global learning isn't new. What's fresh about the topic now is the level of maturity it will reach as more and more educators understand the value of learning in a global context. The excitement around students participating in global collaboration is only going to increase. Why? Because, as educator Mali Bickley puts it, global learning enables students and teachers to harness the power of technology to develop relationships with their global peers while addressing complex and important global issues. Students who have participated in global learning provide the proof – their discussions and collaborative projects have addressed worldwide problems like food scarcity, climate change, refugee crises and child labor.

6. Learner profiles

Both the ISTE Standards for Students and the ISTE Standards for Educators include specific profiles of learners. The Student Standards provide a framework for helping students become Empowered Learners, Digital Citizens, Knowledge Constructors, Innovative Designers, Computational Thinkers, Creative Communicators and Global Collaborators, while the Educator Standards are a road map for becoming Learners, Leaders, Citizens, Collaborators, Designers, Facilitators and Analysts. Both students and educators are embracing their new roles, moving from adoption of learner profiles to successful implementation.

7. Learning sciences

Advances in technology and rigorous scientific experimentation mean scientists know more than ever before about how the brain functions. Increasingly, they're disseminating that information to educators and education leaders in the hope of optimizing teaching and learning. Informed by neuroscience, cognitive psychology, development psychology, sociology and computer science, the learning sciences speak to the heart of education – how to best help humans learn. Look for a focus on updating educators' knowledge of the learning sciences and bringing students to the table to help them understand how they learn.

8. Digital citizenship

Digital citizenship is being redefined. The focus is moving away from warning students about online risks or trying to curtail their activities and toward helping them leverage the power of digital media to work toward creation, social justice and equity. The new digital citizenship, also reflected in the ISTE Standards for Students, is about being in community with others and creating digital citizenship curricula that shows students possibilities over problems, opportunities over risks and community successes over personal gain.

My students can be stellar digital citizens. Join the #digcitcommit conversation.

9. Student-centered learning

Student-centered learning environments have been called “the schools of the future.” Truth be told, at many schools, the future is here. That's because the benefits of student-centered learning and the student agency that comes with it are being proven out.

Chris Lehmann, founding principal of the Science Leadership Academy in Philadelphia, Pennsylvania, says student-driven learning isn't a lofty ideal. It's a moral imperative. And by almost any measure, from test scores to graduation rates, next-generation schools that have put students at the center of their learning are outperforming their neighbors.

“There are enough examples out there now that you have to work hard to say that this stuff doesn't work,” Lehmann says.

Possible Challenges in Integrating Technology in Education

Despite significant resources allocated to integrate technology in the classroom, many teachers have struggled with disruptions that devices can bring, had their work negatively impacted or have not used technologies effectively. And many pre-service teachers perceive introducing new technologies as a future teaching barrier. So, my subject of current interest is to highlight various challenges faced in integrating technology in education that represent a significant constraint. India still faces teething problem for the new technologies in education.

Possible challenges/Barriers to the successful integration of technology into the classroom are;

External Challenges

Internal Challenges

External Challenges include:

Access: Inconsistent Computer Access and Internet connection.

Training: Inadequate Professional Development.

Support: No Optimal Access to Technological Support.

Possible Ways to tackle the above Mentioned First Order barriers to Technology Integration;

Widespread Access to Equipments or One to One Transition

Routine Access to Hardware(Laptops or tablets), Software(Reading and writing software, Internet Browser) and internet Connection

Budget Allocation(Crowd funding Sites)

Provision for continuous technological training

Adequate support for Educational Technology

Access to Extended support from trained professional leading to increase acceptance of classroom technologies.

Access to learning by breaking all barriers of time, pace and distance.

Opening its doors for the desired learning to the learners during 24*7

Even with the removal of first order barriers/challenges, digital technology would immediately and seamlessly appear within all classrooms using appropriate pedagogy. Individual educators are ultimately responsible for using technology, and thus even when given resources, they have choices how to use technology leading to the emergence of 2nd order challenges or barriers also called Internal challenges.

Internal Challenges

These issues are, by their nature are personal and thus vary greatly from teacher to teacher even within the same institution/organization/environment/Framework. Consequently, difficult to address broadly.

Some of them are:

Fear of experiment with new technologies.

Lack of time to practice with new technology.

Lack of time to create lesson plans that incorporate technology.

Think that they have to learn it at once.

Inability to allow students to know more than the teacher.

Fundamental opposition to technology.

General notion that technology will negatively impact students.

Religious opposition to technology.

Teacher attitude and beliefs.

Resistance to change/teacher's resistance to technology.

Easy way out to keep the status quo.

"This too will pass" type of attitude.

Unrealistic expectations for the amount of time it will take to learn a new technology.

Lack of confidence in skills and knowledge.

Lack of knowledge about ways to integrate technologies to enhance curriculum.

Education technologies integration is not a priority.

Students and Teachers do not have access to the necessary technology at home.

Feeling of isolation experienced by the users of technology.

An overall negative attitude towards the implication of technology in classrooms.

Moreover, the negative facets of new technologies used in education sometimes pose serious concerns in the minds of the teachers in relation to the derailment of their students from the actual path of realizing the goals of education. Technology in the classroom results in some kids being advantaged, and some kids being left with disadvantages. Many ethical and serious issues like 'copy and paste syndrome', 'Distortion of reality', 'Loss of privacy and profiling', 'Too much Trust in the information found', 'physical and mental health risk at elementary level,' arise with the use of the latest technologies in education.

Possible solutions/efforts to be taken into consideration by teacher educators to successfully carry out the boat of education to sail smoothly to its optimum;

Developing a right positive attitude towards the processes and products of technology based learning.

Providing the needed facilities for training and equipping the students and teachers along with the supporting staff in operation and utilization of multimedia appliances computer and their network technology.

Creating full awareness about all the possible advantages and gain drawn from their venture in technology application.

Making provision for the internet facilities and classrooms websites.

Making adequate provision for the availability for the technical support service to train and provide ongoing support to both the teachers and students.

Providing individualized instruction suiting to the needs abilities, learning styles and interests of the learners.

Making the teachers and students more interested and motivated towards learning.

Providing opportunities timely evaluation and feedback for the learning outcomes.

Promoting collaboration among teachers and students from different localities and cultures all around the world.

Team skills that is ability to work with others.

Ability to define problems, gather and evaluate information and develop solutions.

Innovate with the tools already in possession.

Easy to use digital resources.

Overcome your fear of unknown.

Start with small, fast projects that enhance learning.

Learn with your students.

Change should be welcomed/ attitudinal change.

Doing away with the fear of criticism, snubbing, ridiculing by others.

Proving a valuable asset in the managing of the institutional administrative and instructional programmes with utmost efficiency in a cost-effective way.

Plagiarism can be checked.

Restricted use along with proper check.

Restricted/trusted sites should be there.