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Development of E-Learning and Online Classes during the time of Pandemic in India

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ABSTRACT

The real impact of online education and e-learning became apparent as schools entered the global epidemic in March 2020, they needed to adapt to the 'new normal' of education, moving away from traditional classroom education to e-learning. According to UNESCO data, in 2020, more than 1.6 billion students were learning from home through video lessons. In August 2020, a UNICEF report stated that 94 percent of all countries have implemented some form of distance education policy to ensure uninterrupted education. Overcoming some of the initial hurdles, most schools around the world quickly embraced this new way of teaching. Although e-learning is short-lived, it was the epidemic that really pushed it into the spotlight and made the school administration realize that it was not just because of the 'new normal' but that e-learning would be in demand in the future. There are many socio-economic factors that are also driving the demand for e-learning, one of the most important of which is equal access to education for all. Today e-learning has become commonplace for youth techniques with many advanced trends such as the inclusion of instructor-less training. According to research, a large number of students are using online classes for both curriculum and extra curricular activities, which certainly suggests a shift from traditional classrooms. E-learning is not only technologically advanced, but it also offers many benefits such as resource optimization, flexibility of teaching, learning at one's own pace, among many others. It equips students to see their learning applied in the real world and to see how their choices results or performance growth. As schools become more adept at imparting hands-on learning through e-learning, as they adapt themselves to technology, young students around the world have no difficulty adapting and choosing this style of teaching and learning. The global adoption of technology in education is changing the way we teach and learn, these trends promise to become the standard of education with continuous innovation and improvement. As the epidemic ravaged our entire lives, the students faced a major setback in their academic journey. Online education in India has come a long way in its journey of obstacles and rejection. India is now one of the nations developing at an exponential rate in terms of technological advancement. Shift in the digital space has given birth to the same online education. With the ever-increasing demand of professionals and learners, numerous online courses are being registered by the Indian audience. By 2021, the number of registered users for various online education certifications is estimated to reach 9.6 million. Now e-learning tools have become more advanced and easy to understand for everyone. The e-learning tools such as Artificial intelligence, Video-based learning, Mobile learning, Hybrid learning, Game-based Learning, Micro learning, Cloud-Based Learning are discussed briefly in this chapter. One of the hottest trends in the study is Artificial Intelligence. This trend empowers modern education and development platforms. Online education opens up many possibilities for students and teachers. However, it can also widen the disparities in the socio-economic fabric of India. All of our policies and interventions related to online education should strive to be inclusive. Good vision, sincere efforts and time will show India the way forward. The need for higher skills and intelligent education is growing, online education is the only powerful medium available to meet this demand.

Key words: ***Artificial Intelligence, Education, E-Learning, Online Class, Pandemic, Teaching***

INTRODUCTION

Online digital education is the progressive face of the education system in India. According to UNESCO, since the outbreak of covid-19, 1.37 billion students in 185 countries around the world have been affected by the closure of schools and universities. About 60.2 million school teachers and university lecturers are no longer housed in the classroom. With over 320 million students, India has one of the highest rates of school attendance and education programs in the world. The nationwide closure has created an emergency for all schools, colleges, universities and training institutes forcing them to switch to e-learning to ensure the completion of the academic year and further

study (Urvashi Sahni- 2020). By 2020, e-learning became popular again and is now a major way to teach and connect students and institutions in a safe but simple way.

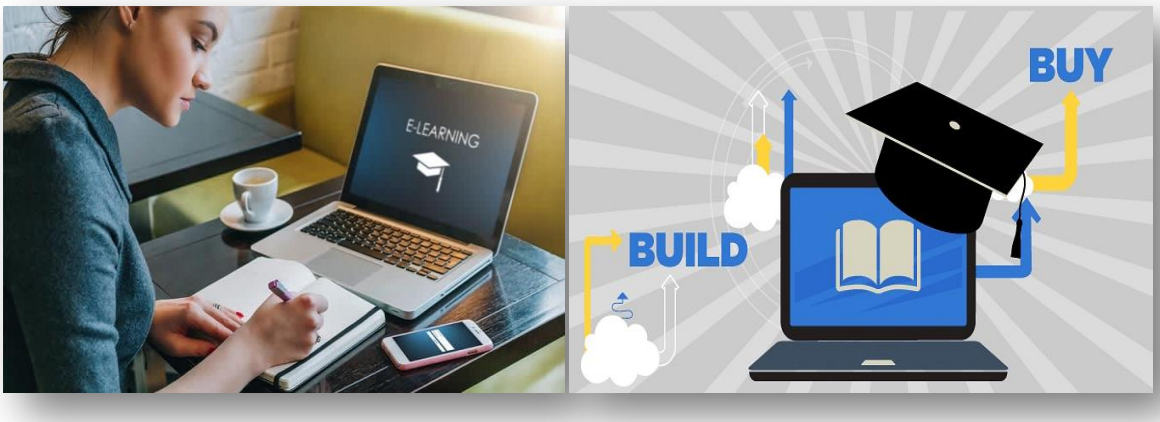
The pace of digital transformation in the education sector has grown at an unprecedented rate over the past two years. All levels of education, from the lowest to the highest levels as well as professional and workplace training, have shifted to the internet and cloud-based delivery platforms. In addition, the changing demands of industry and workers have led to significant changes in the relationship between adult students and continuing education providers, such as colleges and universities. The value of the education technology sector (EdTech) is projected to grow to USD 680 million by 2027. Much of this will be due to mobile technology, cloud services and virtual reality creating new accessible, focused learning opportunities. With a positive outlook, we can celebrate the fact that the level of education available in 2022 is limited by where one lives in the world and the time one has to attend classes. On the other hand, we should always be aware that inequalities in access to technology create another set of challenges when it comes to the equality of educational opportunities.

E-learning, as a concept, was first introduced in the late nineties, and has since become an accepted method of learning in many educational institutions around the world. In India, however, its acceptance was slow, until it acted as a catalyst for change in the epidemic that is taught, although it has not yet become a ubiquitous feature of our education system. With over 700 million internet users, India and the growing use of the internet in semi-urban and rural areas is a strong market for online learning. It is not surprising that the size of the online education market in India is expected to grow by USD 2.28 billion during 2021-2025 (Anish Srikrishna- 2022). However, we should be careful not to be influenced by these figures as they also reflect the lives of real people - children, adolescents and young learners who are searching for education as a means of employment. Therefore, it is important to acknowledge that much needs to be done to improve online learning and ensure that learners are actually learning. To achieve the best possible results, there are some emerging trends in the online learning space that deserve our attention.

Over the last decade or so, the value of data has plummeted, and in the last 18 months, its penetration has improved dramatically. In fact, by the end of 2020, rural India was contributing more than 55 percent to data usage. This is another major factor that will promote online / virtual learning. Yes, we need to overcome the digital divide in India, and policy makers as well as tech makers are working tirelessly to address the cost of tech. However, it is still a long way off that every child in rural India also travels with a personal device that enables him / her to learn independently. With the whole country under lockdown, e-learning is the best and only option left.

Image source: www.instituteshub.com

University faculties are setting up accounts on online video conferencing platforms such as Zoom, Skype, Google Classroom, Google Meet etc to connect with students. This new media has the potential to access the demand for



content at any time or on any digital platform but this becomes challenging for both the administration and the students. Digital media today is a combination of classical and traditional ways of learning like books, notebooks and digital software like e-books and PDFs.

The world today is fast moving on the path of use, with a growing number of technical applications being used to communicate and advance knowledge. E-learning is an umbrella term used to describe the variety of electronic methods that enable access to learning, and the process itself. These include: virtual classrooms, web-based learning, computer-based learning, digital collaboration, video and audio recordings, interactive TV and much more. Thus, e-learning is conducive to flexible learning methods and distance learning. With the pandemic upturning all our lives, students had to face a drastic setback in their educational journey. There was an abrupt shift to online classes and virtual learning that was completely new to most people. After almost a year and a half, e-

learning has become the preferred way for most places to impart knowledge to their students. The real question lies in how this e-learning is going to move forward in our country.

What is E-learning

E-learning refers to a learning system that we can access through the Internet using an electronic device. We also call it online learning. It is training by computer or other digital device, allowing technology to be learned anytime or any where. E-learning has helped the whole world to move forward with the epidemic and still learn with ease. It will be the future of education.

Image source: www.whizsky.com

Types of e-learning

E-learning can be characterized by the way it is distributed to the student, from the instructor. An informal

distribution form of e-learning is one in which students are trusted to view available curriculum material, and are not tracked or tested for completion. In the formal distribution of e-learning, instructors usually track and record learner progress and results. Most educational institutions that provide certificates for students have specific systems and standards for measuring scores for students.

Learning Management Systems or LMS is used to track scores and ensure that student standards are maintained for each course. They are platforms that enable users to create good online courses and students will also be able to use these courses. These platforms are of different types and have different capabilities. Some are free while others are offered at a fee. Here are some of the most popular types of e-learning options available to learners.

1. Lesson based Learning

One of the most difficult things to do to cope with the transition from classroom to online learning is to lose structure. Meaning, when the web opens up a whole new world with more ways than our students has time to explore (believe it or not), there is definitely a trade off to guide your the student's time and make sure they are learning efficiently. So, if they are able to find opportunities presented with texture, give them a shot. ***'Brain Pop'*** is a good example of a lesson-based learning option, and extends to other course-based options and those that offer live instruction and self-improvement.

2. Learning one by one

One of the major benefits of e-learning is that it allows users to jump in and learn when it is most convenient for them. One drawback, however, is that most experiences do not provide two-way communication between the instructor and the student, which is taught in the form of recorded video or written word. In the end, the learning experience is not personal, and many student's questions may go unanswered, eventually leading to a decline in engagement. So, to counter, one-on-one big tutoring benefits include being able to interact with a live instructor. It's basically a virtual tutoring session, for example, like ID Tech's private coding lessons, where your the student can sign up for 60-minute learning sessions with custom lessons tailored to their needs.

3.Group Learning

To play the role of Devil's Advocate, one potential negative of e-learning - especially compared to teaching in the classroom - is the social aspect. If children are alone in front of the computer for hours, how will they learn important social skills? This is a reasonable point, and to address that it is all about balance, parents need to figure out which lever they should pull to keep their children developing as well as possible. But with that said, there are

online learning experiences that provide that crucial balance. Virtual Summer Camps are designed to bring the atmosphere of summer camps online, which means there is a lot to learn, as well as fun and socialization.

4.Curriculum based Learning

One of the major benefits of course-based e-learning is the built-in progress, which naturally adds structure to student's learning experience as they complete the introductory course 'A' and then move on to the more advanced course 'B' etc. So, for example, home schools learning coding can now logically move beyond block-based coding lessons where they are learning about the different blocks available to them to grind those blocks together to program their stories and animations.

5.Video-based learning

Remember, every kid can learn, but each just might learn a bit differently and hence the beauty of alternative learning experiences, right? Those kids who simply don't absorb book content or don't test well now have the chance to learn through something like video, and might find that video concepts 'speak to them' (no pun intended) at volumes no other teaching source has ever spoken before.

6.Article based Learning

That said, may be your child, in fact, thrives on the written word with their brain acts high performance scanner, simply loading the written material and committing it into memory. If so, sites like 'Time for Kids' can be valuable, where access to information may seem less like a learning activity and more like a relaxing activity. Articles also present information differently, and your child may be more attracted to the idea presented as a story supported by quotes and examples.

7.Self-dynamic learning

Obviously, between the various experiences presented above and below, some are going to overlap, with many opportunities offering a set of experiences such as self-pacing, courses, videos and more. Especially considering the self-pacing options, the advantage here is the 'loose structure' if they want, meaning children can spend as much time as they want while learning, without giving up time or sticking to a schedule.

8.Application based Learning

Let's face it, kids love their devices. And while screen time must be precisely controlled for balance, the potential compromise presents an opportunity to learn in the form of a mobile application. There's definitely no shortage of learning apps, good and bad. Which work and which not?. Not to mention that anything that appears on a mobile device will require the utmost attention and dedication given the number of interruptions that may pop up.

9.Sports and activity based Learning

One way to really grab and hold a child's attention is to link online learning to something they are already interested in. Thus, they may find that PBS and Nick Jr. Connecting to portals provided by such networks is a successful endeavor. Their presentation of learning opportunities through familiar animated characters. Again, learning now is a hobby, which can lead to an increase in purchases.

10.One lesson every day

Depending on our child's level of autonomy, they may need a few roots to move them forward, which completes this 'one lesson per day' format. Not to mention, with so many opportunities to 'learn all things' in front of us, it can be overwhelming. So instead, if the child is able to focus on learning a major part of the day instead of getting involved in the curriculum, which has no end, it can really pay off. Check out Scholastic's 'Learn at Home' to get a better idea.

How the future of e-learning looks like in India?

Before jumping into the topic, it is important to first understand the revolution in the Indian scenario.

- This came into account after the fourth industrial revolution, where India started to push forth the need for digital media.
- In recent years, several web-based learning platforms have sprung up to make studying easier, simpler, and more convenient. We already have over 560 million internet users in the country, and this number is rapidly increasing.
- It means that the online world is becoming more accessible to a large portion of our society, and we must take advantage of this development.
- With a CAGR of 52 per cent, the e-learning market, which was worth USD 247 million in 2016, is predicted to reach USD 1.96 billion by the end of 2025. The Covid-19 pandemic's intervention has poured gasoline to the fire.

- Due to the closure of schools, universities, and other educational institutions to prevent outbreaks, online learning has become the dominant teaching platform.

Why E-learning is Feasible For the Future of India?

1.Does not adhere to geographical boundaries

With e-learning, educational diffusion is no longer constrained by geography. All you'll need is an internet-connected laptop, smartphone, or tablet. Working professionals who don't have the time to enroll in courses that need them to sit in classrooms can now learn online thanks to the flexibility of online education.

2. It is a cheaper medium (For both supplier and consumer)

Financial difficulties are a constant impediment to schooling. Many students who desire to learn and study are unable to do so due to the exorbitant costs of attending premier universities. E-learning is not only more efficient than classroom learning, but it is also more cost-effective. You can take online courses from some of the world's most prominent colleges at very low costs. Studies show that businesses save up to 50 percent of their costs by replacing traditional instructor-based training with e-learning. Notification time has also been reduced by 60 percent due to e-learning. E-learning has changed the face of training.

3.Convenient for teachers

E-learning is beneficial not only to students but also to teachers. Since ancient times, education has remained unchanging and labor-intensive, notably for instructors. Teachers spend a lot of time on routine duties that would be better handled by Artificial Intelligence (AI) software, such as collecting attendance, transporting answer sheets, and manually rating each student's performance.

4. Can study at our own pace

The nature of a classroom environment necessitates that everyone learns at the same time. It is impossible to teach each student individually. While some kids can keep up, others fall behind, resulting in poor academic achievement. With e-learning, on the other hand, every student may learn at his or her speed because all of the study materials are always available in one spot.

The Evolution of E-learning

The last decade has seen a radical change in e-learning. In the early days, the courses offered for e-learning were usually custom made by groups of programmers, assisted by software development tools. Advances in technology have created the World Wide Web, making the creation of e-learning courses an easy task that anyone without programming knowledge can accomplish. Changes in technology have led to newer hardware, such as portable computers, which have made it much easier for learners to access course materials online. Today, many people are using tablets and smart phones for online classes and web seminars or webinars.

E-Learning – 'Learning for Living'

The current education system is designed for a different world where young people are expected to be trained for lifelong work. Learning opportunities were limited to those that could not be brought to a place where students could not physically reach them, and our years of formal education would be ahead - crowded in our first 20 years. The employment situation today is very different from that of our grandparents or even parents. The rapid pace of technological advancement means that skills can expire quickly, and developing new skills continuously is an important strategy for job and business success.

Thanks to this wave of change, education providers and students are moving toward a more sustainable education - perhaps taking the lead in the enrolment process in many other areas of life. Another driver is the emergence of online learning aggregators such as Coursera or Udemy, which, along with traditional degrees and courses for many years, have provided thousands of "small courses." This is intended to divide learning into portions that can be completed in weeks or months. New learning styles such as these are designed to meet the changing needs of businesses and employers in the 21st century and will be a popular way for students looking for flexible ways to incorporate education into their lives.

ONLINE EDUCATION - THE FUTURE OF GLOBAL EDUCATION

The Fourth Industrial Revolution brings many changes, one of which is the increasing use of technology in education. Over the past decade, the education industry has grown rapidly, especially after overcoming the challenges posed by the covid epidemic in the world. As a result of the unprecedented pandemic, educational institutions were forced to adopt e-learning. Online education is likely to be the future of the education sector in India. Students can now reduce the cost of their education, as opposed to traditional education. In terms of cost and skill requirements, traditional learning is very expensive. Also, there are teachers who are willing to provide their

services through e-Learning platforms. Education has now become a thriving market for beginners for this reason. Players in the field of education have

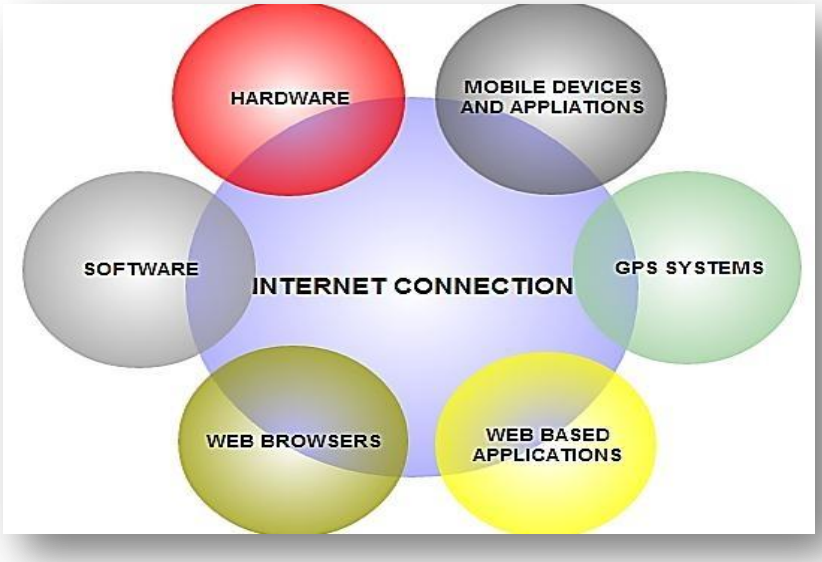
The used a variety of methods to change the way education and training are delivered to students. coronavirus has forced many schools and colleges to switch to remote learning. However, like many other changes, this was to accelerate the long-term trend. The market for online learning and e-learning resources is predicted to grow by 15 percent annually between 2020 and 2025, reaching a total of USD 50 billion. E-learning gives alumni the opportunity to learn lessons and skills that can be taught locally, and for those in higher education, the benefits include allowing them to easily qualify to study in conjunction with other responsibilities such as work or family responsibilities.

E-learning is the most popular form of on-the-job training, and a study conducted by IBM in its remote learning programs found that its students were able to absorb five times as much content, at a cost of one-third of the company, which led them to study in detail saving USD 200 million. Along with formal education and training, many of us are now taking the opportunity to engage in learning and entertainment driven by interests outside of our professional life. Apps like Duolingo offer accessible language education, while others such as Flowkey and Simply Piano are aimed at those who want to learn to play instruments.

Many people are already using e-learning platforms like WhiteHat Jr, Udemy, Course Craft, Academy of Mine, Byju's and more. Even reputable universities such as Harvard, Stanford, Yale, and others have recognized market forces and the growing demand for online courses. Over the past few years, revenue for these online forums and universities has increased dramatically. They show that the e-learning industry is booming. The Chan Zuckerberg Initiative has invested an estimated USD 50 million in Byju. Eruditus Executive Education received USD 8.2 million from Bertelsmann India. Khan Academy, which offers free online education to anyone in India, has partnered with Tata group.

The e-learning industry has experienced tremendous growth. However, it is still a developing sector that will continue to grow significantly in the years to come. The future of e-learning seems promising because, at the end of the day, it offers everything accessibility, comfort, and automated learning. More importantly, one has complete freedom to choose any subject anywhere. In another five years, the global e-learning market is expected to reach more than USD 100 billion. Technology seems to be the key to opening the locked doors of change, and e-learning is a fast-growing market.

Elements of E-learning
Image source: researchgate.net



When creating an online course, there are a number of criteria that must be met. Ensuring a list of criteria ensures that students take full advantage of the course they have signed up for. Following are some common elements of e-learning.

- The role played by the teacher / instructor is important. He is required to give the necessary feedback to the students. He / she is also sometimes responsible for the progress or score of the students.

- A streamlined learning management system is required. It should be easily navigable by both the student and the instructor.
- Learning content is a key feature in e-learning. In general, curriculum content is formatted in a way that is simple and easily accessible to students.
- Communication is important for learning. To be able to access online coursework from the instructor, students must use one or more of the many types of communication or delivery methods.

Today there are numerous devices that allow teachers and learners to share knowledge. The trainer interacts interactively with viewers or listeners using multimedia, voice communications, video presentations (live or pre-recorded), product demonstrations, and text chats, mostly on the internet.

Scope of Online Education in India

A report by KPMG ranks India as the second largest e-learning market in the world, followed by the US (Ambrish Sinha- 2022). Another report by the India Brand Equity Foundation refutes any speculation about the way education in the country, especially online education, is expected to grow. With 580 million Indians in the age group of 5-24 years, the young India offers ample opportunity for development in the education sector, the report said. The report estimates that the value of education in India is estimated at USD 91.70 billion in FY18 and is expected to reach USD 225 billion by FY25. In this vast universe, India Edtech market is expected to grow from USD 750 million in 2020 to USD 4 billion by 2025. This really shows the scope and growth landscape for online education in India.

Innovative Educational Practice- Challenges Online

Challenges Online is an excellent example of an innovative educational practice. In an increasingly connected world, our students need to be able to think and act globally. It involves being responsive, open and responsive to challenges. Grand Challenges and its subsequent evolution in Challenges Online is an excellent example of how we facilitate learning opportunities in new ways and beyond subject areas or geographical boundaries.Grand Challenges is essentially a project week that enables like-minded students to work in interdisciplinary groups on real life issues guided by academics and invited speakers. By immersing themselves in something completely different and expanding their knowledge, students naturally develop transferable skills, including teamwork, presentation and project planning.

By leapfrogging confidence and using trial technology, Challenges Online received immediate and positive feedback from students who would otherwise have missed out on opportunities for internships and other employment-related programs. Instead of simply shifting the current model online, the team carefully considered how digital partnerships can achieve the same objectives by identifying new opportunities and removing barriers to online work. Most important was the opportunity to diversify by involving participants from universities around the world, which also enhanced global perspective, peer learning and cultural exchange.

Challenges Online is an excellent example of an innovative educational practice that can be adapted to a variety of other contexts to enhance the learning experience for staff and students. The Challenges Online program was also voted among the top 10 career services by Student Crowd for 2021. Challenges Online has inspired many other online learning events throughout the university. For example, events previously held as 'writing retreats' have been restructured into less expensive and more inclusive formats, and many modules have advanced pedagogy that engages students more actively in their learning.

The hurdles in the future of e-learning in India?

- The lack of technological integration in rural areas is the main barrier for India's e-learning business.
- Given that rural areas account for 65.53 per cent of our population, this is a severe problem that must be addressed.
- Fortunately, the government has started several projects aimed at accelerating the technical development of Indian villages, and these initiatives have the potential to bridge the gap between urban and rural schooling.
- E-learning has shown significant promise in terms of altering the country's education business.
- We may soon see better content, better tools, and better teaching methodologies as a result of the rise of new e-learning platforms and the increased competitiveness among them.

Modern Technology is Re-shaping the E-Learning Industry

Image source: elearningindustry.com

The last decade has seen tremendous technological innovations that have disrupted practically every industry including Education. Now, academic professionals, students, and enterprise users are beginning to take advantage of modern technology to improve the way we teach and learn - all with the goal of improving the efficiency of education. These technologies are likely to have the biggest impact on online education in the years to come. The learning platforms have their limitations. The information on these platforms was generally cluttered. They were not reliable and certainly not efficient. Over the years, there has been a growing awareness that most courses are standard and do not take into account the diverse needs of individual learners. Thus, teaching methods need to be personalized to ensure that every student is part of the learning process.

These limitations were addressed with the advent of the on-demand tutoring platform. Like forums, many of these platforms allow users to get help by presenting their problems online, but these questions will be directed to experienced teachers and experts instead of being open to the public. But more than that, experts now have a way to spread their knowledge and reach out to students who need their help the most, thanks to the growing popularity of video tutoring. This has become especially important in recent times, as more students and teachers study and work from home, which has reduced student engagement and student / teacher time. Recent years have seen a number of platforms that work to bring students and teachers together based on their needs, experience and discipline, such as ***Studypool***, ***Tutor.com*** and ***Brainfuse***. Despite the relatively recent innovation, the on-demand tutoring platform has already become a staple in the educational lives of millions of students. Students now have access to a wealth of knowledge that was not available a decade ago, while tutors now have the freedom and flexibility to teach what and when they want. The e-learning industry, Studypool's user base has grown to millions and there are over 50,000 verified tutors on the platform. The company has achieved this growth by rethinking how students and tutors collaborate, giving students access to a repository of study notes, and helping them seek expert advice through microtutoring and on-demand tutoring. Platforms like these enable students to crowd source knowledge faster and more efficiently than ever before, greatly improving the transfer of knowledge between expert and student.

Modern Technologies- Big Challenge for Current Model

Education has been a teacher-student interaction in which knowledge flows from one person to another. This is still the case. But a number of technologies are being introduced that could challenge this model. The most important of these models is Artificial Intelligence, along with related technologies such as neural networks and machine learning. The huge potential for artificial intelligence - not just in the education industry - has seen an explosion in corporate interest, which ranks as the fourth most desirable skill for companies in 2020. With these technologies, developers are beginning to create applications that can collect, sort and organize information automatically, essentially building a knowledge encyclopedia using publicly available information. These tools are also used to find out what topics students are struggling with, to identify students who need additional help, and to create individual content plans at the click of a button. Artificial intelligence is already being used on a host of online learning platforms, including *Quizlet*, *Duolingo* and *Quarium* - each of which uses AI to deliver relevant content to students without the need for any human involvement.

Virtual Reality Accelerate Talent learning and Development

By providing a more engaging, active way for teachers and students to come together, virtual reality is able to provide learning experiences that will not soon be forgotten. According to a study by Statistica, the VR education industry is poised to become a USD 700 million market by 2025 - more than triple in the next five years. In addition, 97 percent of students were found to be interested in the VR curriculum. The reasons behind this are the full effectiveness of VR education. Similar to how a flight simulator is used during flight training for emerging

pilots and how dummies and models are used to train surgeons. VR provides an environment where learners can gain experience of performing complex or potentially hazardous tasks without incurring any real risk or expense, while enabling teachers and students to interact naturally regardless of distance. As a result, teachers now use VR to help students cope with a variety of topics, from public speaking to architectural design and everything in between. Like many growing industries, the field of VR education has already begun to give birth to the first wave of its entrepreneurs, but the potential growth is still far ahead, it is likely that its true potential has not been exploited.

MISTAKES TO AVOID WHILE LEARNING ONLINE

Slackness in selection of right trainers online pre enrolling

Research helps students find the right training that can meet their expectations of acquiring new skills, getting a future internship / job, creating their own project or getting certified. Depending on their interests, the availability of career opportunities, teaching methods and the availability of funds, allow research learners to find the right training. Before enrolling in training, individuals should gather enough information about the training, its content, its ratings, online and offline reviews, and media articles and blogs to successfully complete their learning goals.

Does not give importance to taking notes

Learning through digital devices brings unavoidable interruptions in the form of messages, calls and notifications. Students should consider creating notes while learning through videos, tutorials, documents, PDFs or presentations that help focus and increase retention. As they write, students think more intensely, process more information, discover more doubts and questions, increase their memory and accelerate creativity. When repeating, students may refer to these notes to find important topics instead of revisiting the entire video lesson, which saves time and increases productivity.

Reluctance to clarify doubts

Many students, in the physical classroom, find it embarrassing to ask questions. However, online education also solves this problem. When learning online, students can ask questions on a dedicated student support forum that confirms anonymity and allows students to get expert solutions within any time. Students who come up with more questions are generally more interested in the subject, are actively involved in learning, discover their own shortcomings and work on them positively, challenging themselves to learn better and develop the critical thinking skills needed for a successful future.

Slackness in focus on Assignments and Projects

Online training includes quizzes, challenges, exercises, assignments and projects to bridge the gap between students' theoretical and practical understanding of the subject. Most online training platforms do not have to complete assignments or projects to allow students to learn flexibly. However, students should set a schedule and complete assignments on time as these help in the development of cognitive, analytical, problem solving, planning, planning, time management and various other soft and domain skills. Assignments also force students to observe, brainstorm, apply real-life examples, do in-depth research, and improve their overall understanding of the subject.

Not taking enough breaks

Without a dedicated pause, excessive exposure to a laptop or mobile screen can lead to a lack of interest and attention. Students may also face mental or physical health problems such as eye problems, headaches and body aches. To improve focus and focus, it is important to add a dedicated break to the learning schedule and spend that break productively. Some stretching exercises, walking, cleaning, meditating, talking to family members, listening to music or playing fast board games are some of the positive activities that a person can do to feel refreshed and energized during his study break. Things like watching TV or series, playing video games, having a big meal and relying on junk food and excess caffeine should be avoided as such unhealthy habits keep people away from learning and instead make them more lazy.

Mobile Phone - The Tool of Micro learning

India has one of the highest rates of mobile data usage in the world- *12 GB/Person/Month* (Muntazir Abbas & Mohd Ujaley- 2021). Despite this, it is a blind alley for traditional school and college e-learning modules that are not mobile-friendly. During the lockdown, the Internet was flooded with images of students peering through Noto's photographs, trying to zoom in for better clarity and understanding. Basic, yet scarcity needs highlight the importance of online education as it prepares for a mobile-first approach. In addition, in rural and semi-urban areas across India, the cost of laptops and tablet devices is much higher for a single-income family. Therefore, in the absence of personal instruction, mobile phone is one of the best ways to deliver education. In addition to the mobile-first approach to learning, micro learning is another new learning technology that is being heavily explored by applications. It essentially involves learning new information in small portions at a time. Typically, a micro learning session lasts less than ten minutes and can take as little as two to three minutes to complete. Often set aside as a trivial way of learning, micro learning can be surprisingly effective, as people usually lose 80 percent of the

knowledge they learn in a month. E-learning curriculum developers and educators in many parts of the world are looking to leverage the power of micro learning to complement online learning for primary and secondary learners.

Challenges to Face in Online Classes in India and How to deal with?

While e-learning has emerged as the biggest savior in the wake of the closure of educational institutions, it has come up with its own challenges. All stake holders, including students, teachers and institutions, are forced to meet the challenges that come with these sudden and frequent online learning programs.

The Strength of Internet Connection

One of the major barriers to online learning is the lack of a strong and stable Internet connection, as people who traditionally use it at home have either low bandwidth or have run out of bandwidth. The process of logging in just for the class becomes one by itself. An equally cumbersome process for students and teachers. While upgrading a broadband connection is a solution at first glance, it is certainly not in vain. What is really needed for the purpose is a tool that can do logging in a one time process. An app is needed through which both teachers and students can choose their class / subject and move on.

Assessing Students

Appropriate student assessment is an integral part of the education system. Under normal circumstances, students are made to take exams or sit for exams on the school premises, unfortunately it is no longer possible. In online learning, assessment of students through Multiple Choice Questions (MCQ) mechanism is still possible as a stop-gap but actual learning is measured by subjective assessment - this is the biggest challenge for traditional Edtech solutions that are primarily MCQ based. Another related obstacle is the verification of assessments. Even if students upload their answer sheets online and the respective teacher teaches in five different sections, they will still have to evaluate more than 50 students. And uploading or downloading so many answer books is especially a chore. So there is a need for a tool that provides a comprehensive assessment system that caters to the needs of both teachers and students.

Controlling Cheating Events

There are many students who try to take advantage of the easy path to success. It has become easy for them to cheat while using the online learning system. While we agree that this is primarily about being self-disciplined, educational institutions should focus on minimizing the potential for disrupting the sanctity of student assessments that are used to improve classroom and student learning. To prevent this risk, we have a secure mechanism has been developed on our platform in which the teacher is notified immediately when the student exits the exam screen to access the browser etc. We also shuffle questions so that children do not use the media to gain an unfair advantage.

Ensuring Online Security

The privacy and security of data is always associated with the Internet. In general, teachers run online classes through free platforms such as ZOOM and Google Classroom. But they are not really the safest or most secure tools for the purpose of learning. There is a need to use the new age Edtech platform that ensures a secure online environment.

Excessive screen time

Excessive screen time also becomes a problem for parents whose children attend these classes. With class work, homework, assignments, everything going digital, kids will be engrossed in their smartphone / laptop screen and it is not good for their mental health. This puts stress on their eyes and brain. With a little simplification in epidemiological guidelines and an increase in online classes, the government limited the duration for pre-primary students to 30 minutes and two sessions of 45 minutes for standard 1 to 8.

Genders Inequality

Another drawback is that in our country there is a difference between girls and boys. According to a recent survey conducted in government schools in Bihar, out of 733 children, only 28 percent girls had smart phones as compared to 36 percent boys. And in most cases, these smartphones belonged to male adults. Often less accessible to girls than boys. Half of these families could not afford the internet package and their children had to rely on lessons broadcast on television. But in those cases, the girls were seen spending more time completing household chores than the boys, which often overlapped the telecast time. Another factor was that in most of these cases, the parents refused to talk to their daughter and offered a survey on her behalf. In some cases where they were able to reach the girl, the conversation did not go ahead because they had to speak in front of a male family member which made them realize how difficult it was for them to study with online resources.

According to the Group Special Mobile Association (GSMA) Mobile Gender Gap Report 2020, which represents the interests of mobile operators worldwide, only half of women in India use mobile internet compared to men - 21 per cent compared to 42 per cent among women surveyed by the Center for Catalysis. Demonstrates how teenage

boys have better access to digital infrastructure, whether it's smart phones, internet service, radio and media. Trends in India have been consistent with global observations, when there is a gender imbalance comes for digital access. A study by Young Lives, an international research project on childhood poverty, claims that 'boys in India use computers and the internet more regularly than their peers'. Samples collected by Young Lives in Andhra Pradesh paints a vague picture, showing that in Andhra Pradesh and Telungana, 80 per cent girls have never used the internet, while 62 per cent have never used a computer. About 37 per cent girls from poor families are unsure whether they will be able to return to school after the epidemic, according to a study, also found that only 26 per cent of girls in such families have access to mobile and internet to attend online classes, compared to 37 per cent boys. In high-income countries, women are 8 percent less likely than men to have a mobile phone and 20 percent less likely to use the internet on it.

Socio-economic Inequality

India is a diverse country and these diversity come from different cultures and beliefs, and because of this, India suffers from a huge socio-economic divide - the division into upper, lower and middle class and that is a big drawback. Even one third of the population does not get online education. Lack of internet connectivity in rural areas, lack of power supply and inability or inability to afford related devices are the main concerns. Many teachers complained to lower class students about not getting study materials because they could not attend live sessions due to lack of network. As an alternative to this, many classes are done by sending pre-recorded videos via ***WhatsApp*** or ***YouTube*** so that they can study at their convenience but also have their own difficulties such as lack of understanding of the lesson. As a result, they are still deprived of the knowledge they should be given.

Mental Health of Learners

It is a stressful time for children of young age group (5-10 years) as their focusing period is short and they need physical activities to keep them busy. But it is not limited to the younger generation, students going to college have also complained about this. They value learning in a physical and practical way rather than a virtual one. Subjects such as science and technology require more experimental laboratory sessions, thesis projects, and field trips to complement the theoretical aspects that are extremely limited and almost impossible in online education.

Causing Boredom

One of the potential and most significant challenges associated with online learning is boredom due to the increase in screen exposure as well as the modus operandi of sitting in a restricted place for long periods of time. It is the responsibility of teachers and educational institutions to break this boredom or fatigue. Constant effort is needed to make the session as interactive as possible. With this aspect of online learning in mind, we have developed a method in our Edtech platform through which students can engage in voting and other similar activities. There is also provision for a whiteboard-style tool in which teachers and students can draw or write anything, ultimately making learning more interactive.

Online Education is a Symbol of Discrimination

The online education system is not accessible to countless indigenous students. The reason is that the areas where they live have no electricity, no modern technology, no television, no smartphone. As a result, tribal students are unable to get an education for themselves. Before recommending an online education system, it is important to know the total area covered by the network. Need to examine the extent to which network service is available in those areas. Consider the cost of accessing the internet and the cost of telecommunications equipment.

All of this is unsuitable for tribals, forest dwellers and mountain dwellers. That is why online education is a discrimination. The federal government recommends that students be guided by their parents during an online class. How can online classes be conducted by parents who are unaware of modern technologies and are educating their children for the first generation. Therefore as for as tribal people concerned, there is no alternative to direct education.

According to a study by Vanessa Peter of the Information and Research Center for the Urban Poor, 71 percent of children living by the roadside in Chennai have lost their access to education. This study reveals that education, one of the fundamental rights, has been taken away from the working class. The study was conducted on 100 roadside children in Chennai alone and included 47 children, 1st to 5th class, 46 children, 6th to 10th class and 7 children, 11th to 12th class. 86 percent of them are studying in government and government aided schools and 27 percent in Chennai Corporation schools.

If this is the case in a study conducted only in Tamil Nadu, which is considered a relatively developed state, and in its capital Chennai, it is possible to understand the educational dropout of poor students from other states across India. The transformation of education into a business has accelerated after the privatization-liberalization-globalization policy. Even basic education, which is freely available, is only possible if there is money in times of distress.

Global Online Learning State - Facts and Statistics

Although online learning is not losing its importance, other platforms such as gamification and micro-learning are slowly taking over. Here's a look at some common e-learning statistics.

- Global industry has grown 900 percent globally since its birth.
- Since its inception, the online learning market fact indicates that by 2025 it will reach USD 325 billion over two decades.
- Global markets experiencing 30 percent annual market growth include Thailand, India, China and the Philippines.
- Between the years 2020 and 2025, this market will experience 200 percent growth.
- The Asian market, which is the largest consumer, sees a 20 percent annual increase in its revenue through the online learning industry.
- By 2020, mobile e-learning will grow to 38 billion. From 2017 to 2022, the pace is above the expected 6 billion.
- With the investment in scheduled learning, the self-paced online market will shrink to USD 33.5 billion in 2021. This is despite the US government purchasing self-paced products worth USD 2.59 billion in 2019.
- Augmented and virtual reality improvements in advertising or gamification are paving the way for virtual class. Its revenue in 2020 was estimated at USD 300 million.
- Micro-learning (a small model of e-learning) in 2018 - accounting for 60.70 percent of learning.
- At least 60 percent of internet users are engaged in online learning. This is because they can do it with the comfort of their time and place.
- 80 percent of companies and 50 percent of institutional students use e-learning platforms.
- E-learning takes 40 to 60 percent less time than traditional education for staff and students.
- Most companies are turning to e-learning. About 42 percent of organizations have experienced an increase in revenue, because some expenses such as travel expenses have been significantly reduced.
- In Europe, the average online company has 25 employees and a revenue of 3 million.
- The 48 countries that make up the European Higher Education Area are exploring online education to enhance and transform traditional education.
- E-learning increases learner retention rates from 25 to 60 percent, while one-on-one tutoring has a retention rate of 8 to 10 percent. This is because the person can quickly revisit what they have learned, and they have more control over the process.
- 28 percent of companies conduct their compliance training through online.
- In the end, if corporations adopt online learning, employee engagement will increase by 18 percent.

Online Learning Global Trends and Statistics

The online learning trend is rapidly gaining momentum. Most countries and institutions have relatively mature online learning areas that can be replicated elsewhere. With the right infrastructure and implementation, online education is experiencing exponential growth. Here is a general overview of this trend and its statistics.

- Udemy, one of the most popular online learning platforms, has over 20,000 specialists, with approximately 12 million students taking the course.
- Teachable, another platform has over 7500 specialists, and they offer over 20,000 online courses. They have about 3 million students.
- Other platforms include Ruzuku, Academy of Minds and Skillshare, with their tutors earning up to USD 40,000 per year.
- As of 2017, 30 percent of organizations were using the Blackboard platform in the US and Canada.
- 75 percent of U.S educational institutions rely on this platform.
- The US and European markets account for 70 percent of the global e-learning services market.
- 63 percent of US students use online learning tools every day.
- LinkedIn Learning was formed after acquired Lynda.com in 2013 for 1.5 billion, two years after the 103 million funding, its market value increased significantly.
- Video has become an integral part of online education. With this, Sony has sold USD 500 million units of PlayStation Virtual Reality in 2017.
- 67 percent of American college learners have completed some, if not all, of their course activity on their mobile phones.
- 12 percent who did not complete their studies using this method will get it if given the opportunity.
- The number of students taking a full online degree has increased from 3.8 percent in 2008 to 10.6 percent in 2016.
- On average, an employee spends 24 minutes a week learning so creating a challenge for their career development.
- By 2026, the corporate online learning market is expected to reach USD 50 billion with a steady growth of 15 percent.

- Distance learning statistics show that 17 percent of women are more likely to enroll in online learning.

Massive Open Online learning Courses (MOOCs) Statistics

Since most online learning courses are free, MOOC offers learners and even trainers an affordable way to further their education. In addition, a growing number of open-source online courses (MOOCs) are ensuring that MOOCs provide professional content and quality education. Here are the MOOC online education statistics,

- By 2019, MOOC was valued at USD 5.16 billion.
- The MOOC expects the market to grow at an annual rate of 29 percent between 2020 and 2025.
- However, 73 percent of students still do not know about MOOC.
- By 2025, MOOC is projected to enjoy a market share of USD 21.4 billion.
- EdX, created by MIT and Harvard, is an example of MOOC and has over 20 million users and over 70 million registrations.
- North America contributes 29.4 percent to the global MOOC market.
- Of America's top 25 universities, 22 of them offer online classes.
- From 2020 to 2025, the Asia-Pacific region will emerge as the fastest growing market in MOOC.
- 79 percent of MOOC users have a degree, while 44 percent have a postgraduate degree.
- People aged 5 to 17 contribute 3.1 percent who take an online school-related course.
- Online courses reduce costs with credit hours ranging from USD 12 - 66 per credit hour.
- The completion rate for MOOCs in the UK is less than 13 percent.
- The vast majority of those taking US online courses are physically located in the US, accounting for up to 99 percent of the total.

Online Education Guarantees a Lower Cost than a University Degree

Working professionals who prefer online Doctor of Business Administration (DBA) programs will save money because these programs come at a much lower cost than their offline counterparts. Also, with online programs, learners will not have to quit their jobs, which will eliminate all cases of pay cuts. This will help learners to balance their work and academics and will especially benefit those who cannot afford to leave their jobs for multiple financial obligations. Students can now earn an online doctorate in business through a number of online programs. Professionals who wanted to conduct research during their undergraduate years, but were unable to do so due to their job demands, now have a way of doing so while completing their online DBA degree. This course is also suitable for learners who want to learn about professional evolution or engage in research to demonstrate their aptitude. Lastly, having an online DBA degree also demonstrates a person's desire to learn, supported by a high level of self-motivation and dedication, a quality that employers really value.

Therefore, the rare online DBA program sets the learner apart from the crowd of MBA and Master's degree holders, helping them to get better returns for senior management or C-Suite roles. After completing the program, learners can also take on the role of researchers or independent consultants who go on to make significant contributions to the field of business through papers, theses, patents and more due to their research oriented approach and problem solving. The time has come for professionals to choose DBA programs from leading universities such as the Swiss School of Business and Management, Geneva and Golden Gate University, which are run by Edtech companies, to reap the benefits of flexible education without the challenge of pay cuts.

What does an ideal online class look like? What factors make it really effective?

Image source: elearningindustry.com

We can't really impart how an ideal class looks like, online learning can happen in different ways and formats, as in, synchronous, where students and educators connect through an online portal and the class is conducted at the same time and asynchronous, where a learner can access material and courses from the internet and self learn from it. Online classes offer flexibility to students, where one can log into the class without any difficulty of physical space and time. As the pandemic accelerated, schools and colleges shifted to online learning, and students had to get accustomed to online classes.

Online classes turn out to be an effective one solely depending on a learner and the learner's responsibility towards it. There are various other factors that make an online class an effective one namely,

- Establishing learning environment
- Attending classes punctually
- Interacting and clearing doubts
- Assuming online class as a real one
- Staying motivated
- Determination for achieving goals
- Not procrastinating
- Staying clear of distractions
- Taking useful related courses
- Mindful of a burnout

Online Teaching Platforms in India

There are so many tutorials online or classroom software available, we will discuss a few that are easy to find and understand and can be used on mobile phones.

1. Visual classroom software

- *Google Classroom:* From now on, it is completely free with 100 GB of storage and there are no limits on the number of users. Teachers can create classrooms, assign tasks, and provide feedback to students. Teachers can give permits to students, parents, and fellow teachers. IT can be customized, and many features are available. It can be upgraded to G Suite Enterprise for Paid Education with premium tools

- *Microsoft Groups:* It offers the same teaching tools like Google Classroom and is free.

2. Video streaming and screen sharing software

Below is some software that can be used for video conferencing or meeting but can be used for teaching.

- *Zoom Meeting:* It's 40 minutes free and after 40 minutes, you also need to log in to continue class. It can be upgraded to a paid version for a longer call.
- *Skype:* Hold a video conference with one click. No subscriptions. No download required.
- *Google Meet:* Real-time meetings with Google. Using your browser, share your video, desktop, and presentations.

LATEST E-LEARNING SOLUTIONS DEVELOPMENT TRENDS

With the help of various technologies, learning has come a long way. By using an e-learning approach, an organization can help develop student's reading skills. There are many technologies that can help an organization or large business to improve their reading skills. The development of e-learning software is growing exponentially. If we are looking to develop e-learning strategies to incorporate them into our systems, we should consider the latest trends.

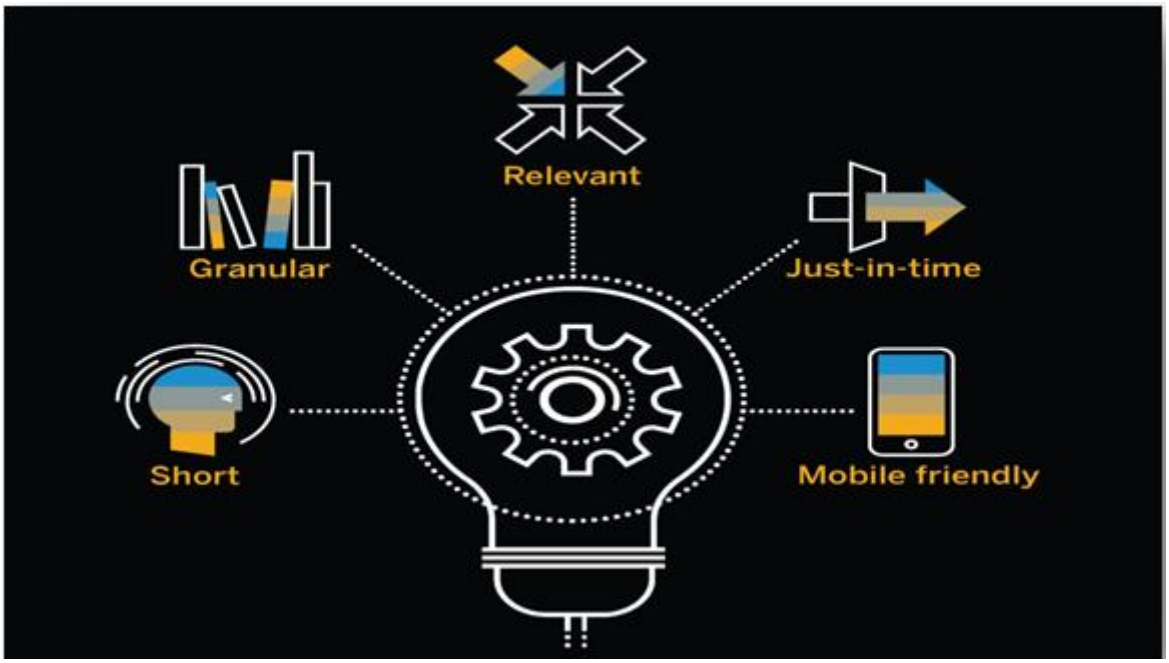


Image source: www.litmos.com

MICRO LEARNING

Micro learning is a very effective teaching method for organizations with short training time, and the modules can deliver high quality information without interruption. According to many trainers, this trend will remain and continue to grow within the industry. Micro learning has been supporting professional development by directing training methods and applying them on social media. When learning time is limited, and the need becomes apparent, this is where the magic of Micro learning begins.

When people read a large amount of information, they keep it for a while. However, if that information is not considered 'relevant' to existing activities, the information often deteriorates over time. The concept of micro learning can be used to address this issue. Dividing content into smaller pieces and remembering different components over time can help improve information retention and productivity. Micro learning can really improve on-the-job training because employees will learn in less time, and without interrupting their daily activities. It may be because micro learning works with the brain to prioritize information that may be closely related to daily work.

Benefits of Micro learning

- The main point after micro learning is that it is fast. Usually, it takes ten minutes. For all the work that employees are expected to do - the less time they spend training, the better. In short, employees are still learning additional skills in their jobs, but without taking the time they can afford it. Micro learning is a way for you to learn parts of your work in small pieces, albeit with reduced investment, and additional benefits that employees can use on a daily basis.

- Even people who are very careful may find it difficult to keep up with lengthy studies. However, when people know that their learning or training will only take a short time, it is much easier for them to sit down. Most people are connected to the ropes to keep up with new information for shorter, than longer, periods of time. Micro learning takes care of this and keeps employees busy.

- Micro learning helps you learn to guide yourself for the rest of your life, as short activities can be easily combined with daily activities. Small learning steps, consisting of pieces of information, can be used to read in or where needed. In this way a little reading enables people to stay up-to-date with the latest information technology. Small informational injections to review what has been read help to reinforce information, as well as memory. Micro learning allows for continuous training, with information stored over time.

- Because micro learning relies on small, bite-sized training sessions, it's easy to make it accessible for any device. Larger training courses can be difficult for employees to keep up with. They may need to pause in the middle of a course. That means they might lose their place, or forget previous information and have to backtrack before resuming the rest of the course. Micro learning works in synergy with mobile learning so that you can learn on the go. Short, bite-sized lessons make it easy to fit into a busy schedule.

- People all learn differently, and micro learning allows people to find a way of learning that works for them. Rather than having to conform to a rigid, structured course of learning, they can find a flexible solution in micro learning. Employees can learn at their own pace. If an employee needs to review a certain piece of information, they don't delay the rest of the learning course. That certain piece of information is the majority or the entirety of the short training course.

- Traditional training and learning courses can be difficult for employees to go through because they often contain information that is not directly related to the role of the employee. Micro learning allows them to build their learning strategies with short, informative pieces, which do not involve external knowledge. Also, it makes it easy to rotate and recommend different pieces of different roles - enabling flexible and personalized learning methods.

Examples of Micro Learning

Microcopy

Short, direct, highly contextual messages or tips, to help users learn.

- Error messages
- Interpreters of the contact form
- E-commerce tips

Micro learning videos

Short, focused videos are designed to meet a specific learning outcome. Micro learning videos can be designed to be an independent nugget that provides a specific takeaway for learning. Part of a long way to learn.

- Descriptive videos
- Short and interactive videos
- Less subjects
- Pictures of the white board
- Animation based on Kinetic text

Micro learning Apps

The some following apps that giving micro lessons

- Google
- YouTube
- Headspace
- Lasting
- Word of the day
- TED

Micro challenges and games

Final learning, which may include prizes, benefits, badges, recognition, or other incentives to participate or earn high marks.

- Lots of questions
- Polls, cards
- Question and answers
- Imitation
- Student recording to answer questions

Infographics

Infographics is a visual representation of information or data.

- Mathematical infographics
- Information infographics
- Time line infographics
- Infographics processor
- Local infographics
- Comparative infographics
- Hierarchical infographics
- List of infographics

Communication Forum

The social media platform can be used as a small blogging activity, and you can read information info from streaming subscribed content. The social media platform can be used as an online community service feed.

- Twitter
- Wall Street Journal
- LinkedIn
- Reddit

2. ARTIFICIAL INTELLIGENCE

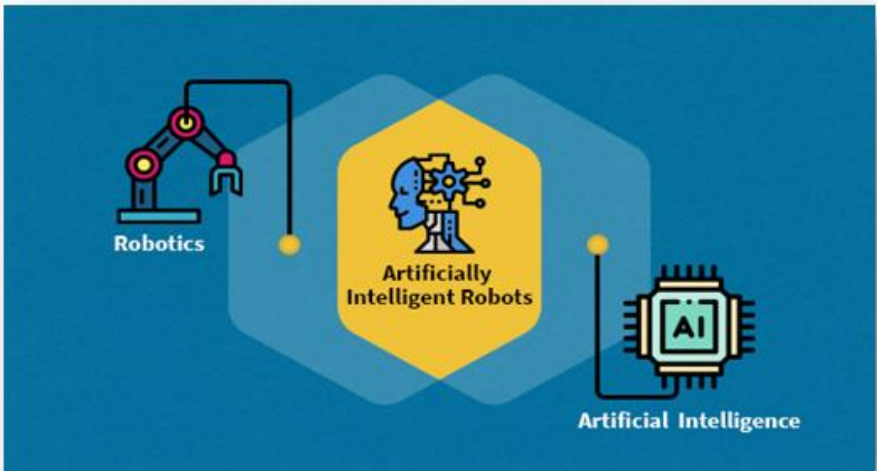


Image source: science.org

Artificial Intelligence (AI) is a practical tool that enables machines to learn from experience, adapt to new changes, and perform tasks as humans. It is the ability to design intelligent machines or to develop software applications that can read and mimic aspects of the human mind with the help of thinking, sensory processing, planning, decision-making and problem-solving strategies.AI has brought positive changes to the education sector, benefiting students and institutions. Many organizations are coming up with e-Learning solutions to offer their students new modules. Because of the practical wisdom, visual assistants can help teachers to guide their students through modules. Various e-learning software companies are developing state-of-the-art software features with in-depth features and learning aids.

AI will give impetus to the development of online education. It could boost the online education market in India, which we expect to reach USD 1.96 billion by 2021. The role of teachers in education programs cannot be changed; However, AI will help and improve the work of teachers. AI is expected to fill gaps in the learning and teaching process and delivery. With the help of AI, students can access personalized curriculum, tests, learning methods and delivery. This has been a challenge for teachers as the management and provision of instruction tailored to the specific needs of the student is almost impossible. According to Business Today, by 2024, 47 percent of learning management tools will be AI enabled. Also, AI in the education industry is expected to reach a CAGR of 40.30 percent between 2019-25 (Parul Saxana- 2022).

With AI-based educational solutions, we will soon be able to learn student's behaviors using facial recognition to understand when and where they are struggling and later to customize and tailor lessons based on their specific needs. The application of practical skills leads to the automation of administrative tasks, and this will enable teachers to use time more efficiently. This will help improve the quality of education and make it accessible to more people in the form of smart content. Digital lessons in the form of digital books and study guides can be created, which are intended to enhance engagement.

AI is ready to redesign and re-establish the education sector. The combination of teacher technology and the best equipment will shape the future of education and the whole concept of learning. AI will enable teachers to better understand their students and leave behind the traditional teaching and learning methods of the old school. One of the great benefits we see in AI-based education is that we expose students to this technology in advance that will evoke the invention, ideas and knowledge of this amazing technology in their curious young minds.

With the rise of Artificial Intelligence in education, there are many different ways it is being used to help students learn. Here are a few technologies with AI that are already affecting and will affect education in every way.

Chatbots

Chatbots is one example of an AI educational app that students can use soon. These are increasingly used in classrooms where children use iPads or laptops to chat with bots designed to help them understand specific topics such as math or reading comprehension. It is possible that chatbot instructors can do more than help students learn

new concepts, it may come even when it is necessary to analyze. Chatbots are the future of all technological roots. Reduce the cycle of tasks assigned to teachers. Chatbots used in classrooms can replace email communication between teachers and parents while parents reunite.

Virtual Reality (VR)

Another innovative realistic education, which is used for everything from teaching history to helping students with mathematical skills. Virtual Reality is a three-dimensional computer environment that people can explore and interact with. VR educators are discovering new ways to incorporate knowledgeable learning into their classrooms, truly shaping what it means to be a student. VR is a great way to help students feel connected to each other. If they are indifferent classes but use the same non-realistic system, they can communicate safely while separated by distance. With Virtual Reality, students can explore things they may never have the opportunity to see or learn about in real life. The same is true for teachers. Teachers can find very interesting ways to teach their students. Anyone who has ever tried VR will know that it feels more focused than sitting in front of a screen or being inside a computer-generated environment. Growing engagement and deep understanding are just two benefits for students and teachers.

Learning Management System (LMS)

In this age of technology, one of the most important things is to keep up-to-date with the latest developments in education. One of these developments is the use of Learning Management Systems. The learning management system provides a centralized, accurate system for managing all online school activities. These tools can be used for a variety of purposes, but they are often used to achieve the following:

- Connect with students and parents
- Track student progress
- Generate reports on student performance

These programs allow all aspects of the lesson to be contained in one place, from lessons and assigned tasks to assessment and planning. This means that teachers can provide feedback on any assignment or assessment at any time. Students have instant access to their grades without having to wait until the end of the semester.

Many articles can be learned using these LMS with AI software. A student can get help by using an intelligent digital educator with AI, who helps him with his problems and gives him the right solution to solve his problem. With Artificial Intelligence, one can even create a learning management system that can understand students' thinking and help them learn better. There are now LMS systems that can assist teachers in creating content, assisting parents in monitoring their children's progress in the program, and testing them with an AI engine. This has helped teachers reduce class time, help parents better understand their child's progress, and reduce teacher load. LMS is a valuable tool for both teachers and students alike.

Robots

Robots with Artificial Intelligence in education have proliferated in the last few years. It is now being used by both teachers and students to assist in education, which may appear to improve student engagement and safety. With the current development of AI, robots in education are inevitable. Robots can be an excellent learning resource for both students and teachers - a way to explore the topic in depth without getting bored. For teachers, this means that robots can provide a way to have more personal time with students who need extra help. It also allows them to experiment with new teaching methods, which are important as they try to reach different types of students. For students, it is an opportunity to learn something new without the pressure of being alone in the classroom or having their peers judge them for making mistakes.

Robots can provide that space where they can feel embarrassed if they do not get something right away. Robots are important for students because they can teach them that engineering is more than just solving problems on paper or drawing on mats. They are able to see the result of their efforts and the end result. Teachers can also use robots as a teaching tool to teach lessons about current events or mathematical concepts such as fractions. As technology advances, it will no doubt play a significant role in people's lives.

Challenges while Adapting AI

The challenge of learning to use technology lies with students and teachers. Often the problem is that teachers are not trained to use new technologies in their classrooms. As a result, they have to find out for themselves or for someone they know. Teachers need help to understand how these tools can be used to provide students with an interesting reading experience.

Benefits of AI in Education

AI can scale papers and articles faster than a human. This will give teachers more time to work with students with critical thinking skills and critical analysis skills. This will also allow teachers to focus on each student who can benefit from their guidance. AI can also enhance human teachers by providing information about students' learning styles and providing direct feedback to students who need more practice on specific topics or skills. AI is tireless, has no mood swings, and has no life without education.

Negative Aspects of AI

A robot may not be as skilled at teaching as it could be. The disadvantage of AI in education is that technology may not always be successful in teaching. AI has no emotions. Students feel cared for by AI when they are taught or have a question, and when they do not get an answer from AI. This is an emerging field, and is being studied at universities around the world where scientists are working to develop AI technologies that improve our lives. Artificial Intelligence can be used to provide students with flexible learning where it adjusts the pace of teaching based on the individual student's performance. On the other hand, some people are concerned about the impact of AI when human interaction is declining.

3. VIDEO-BASED LEARNING

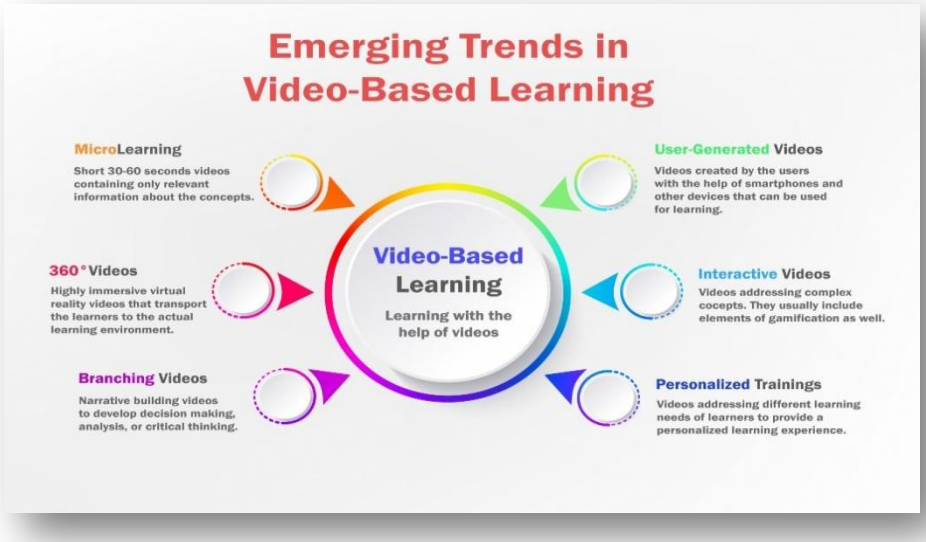


Image source: https://www.evelynlearning.com/video-based-learning/

Verbal video-based learning refers to a video-learning learning experience. With its ability to integrate camera images, animation, graphics, text, and audio, videos create a wide range of learning experience, unlike any other e-learning format. In view of this, it is not surprising that video-based learning quickly becomes an outstanding standard of online training. In 2021, YouTube was reported to be the second most visited website after Google with over 2 billion users (Alexandra Hemmer- 2022).Video-based learning comes in many different formats with different purposes. Here are some real-life examples of video-based learning.

Animated commentators

In addition to visual appeal, animated videos also serve to illustrate complex or invisible topics that would otherwise be difficult to produce. This makes it easier for students to process information as well. For example, the German YouTube channel, Kurzgesagt, has garnered more than a billion views through its animated videos that teach a variety of complex subjects, including philosophy, biology, and physics.

Expert guide led professionally

Expert advice is always important. But when presented by the experts themselves in the form of a descriptive video, it creates an inviting feeling that mimics a lesson or even individual instructions. Once again, YouTube is full of professional-led channels that cover almost any subject that may require users.

Interactive video

Video-based learning does not have to be random. Adding interaction elements can create a deeper sense where students can influence the content based on their decisions. For example, some compliance training programs use situations in which students can participate as a character in a story and make decisions based on their compliance knowledge.

Key Benefits of Video-Based Learning

- ***It improves student retention:*** Videos are made of a variety of materials, from visual and audio effects to practical tasks that require users to click or type responses. As a result, videos can engage readers with multiple sensors, which not only creates a refreshing feeling but also enhances memory retention.

- ***Enables micro learning:*** Videos do not need to stay long. In fact, they are a great complement to the small learning strategy. Your students are probably busy employees with a short attention span online. Sharing information equivalent to biting in the form of short, captivating videos can also go hand in hand with passing levels and creating a more rewarding sense of learning.

- ***Makes content more accessible:*** As more and more students become the first mobile users, it is important that e-learning professionals develop their content on smaller screens and keep up with the portable learning trend. Video is a student format that can be easily accessed without desktop devices, including tablets, smartphones, and smart TVs.

- ***Enables the on-demand learning:*** Employees need learning content that is widely accessible and accessible whenever they find themselves stuck in the workplace. Videos are the ideal formats to deliver work-based support services that address workplace needs. Additionally, with video players, students can jump to the desired location without having to preview the entire clip.

4. GAMIFICATION OF LEARNING

Image source: futurelearn.com

Gamification is one of the most popular and popular learning methods among students, worldwide. Games facilitate local learning or, to put into words simple, learning that happens through in-depth knowledge. Gamification uses game instruments, such as badges, points, levels, or leaderboards and uses these techniques in the way a learning lesson is taught. This, in turn, enhances the reader's motivation. In addition, the design of the game gives students the freedom to fail and to deal with and achieve various challenges and objectives in turn. Educational gamification is also sometimes called the principles of educational game, fun thinking, engaging design, or motivational design etc. Gamification can also be defined as a set of problem-solving tasks and processes using game features. Another big area where player conversion is very widespread, however, is in education. Online educational forums are a great way to do formal learning. Apps and websites are good game strategy providers, as they often integrate smooth things like leaderboards and targeting programs.

Gamification For Learning Techniques
There are a variety of gamification strategies that can be applied to the learning environment. The most popular are:

- ***Points systems:*** Allocating points to complete various tasks can encourage people to work harder. It also provides an accurate representation of their level of effort to show how far they have progressed in each subject or subject.

- ***Badges:*** Badges are a great way to inform and reward people for their efforts. A badge is a prize awarded in the form of a visual object or a printed image on your profile. It is an excellent way to show that you appreciate the hard work and effort put into the work.

- ***Leaderboards:*** Leaderboards are great for creating competition among students, as they will want to see their names on the top and work hard as a result. You can even create different leaderboards based on different teams, divide people into smaller groups to get better competition.

- ***Challenges:*** A challenge is a task that requires a person to accomplish something with his or her time and effort, but it does not have a negative impact if it fails or is done incorrectly. Challenges can include learning strategies such as problem solving when people need to think outside the box in order to build a solution.

Some Successful Examples of Gamification

Duolingo
This language learning app is a perfect example of gamification used for learning. With over 500 million users worldwide, they make good use of game strategies. Duolingo successfully uses multi-game strategies to keep users engaged; with levels, streaks, badges and leaderboards. All of these features create a game-like feel, and keep users eager to continue. It is a great example of using visual acuity to create effective learning. While there are many apps that use some of these strategies, Duolingo is able to use them all to help users feel encouraged. Despite the successful implementation of these simulation methods, the app is very bright with fun colors that add a game-like feel.

Minecraft
Minecraft has become a very powerful teaching tool. Minecraft Education Edition is designed specifically for teachers and students. The forum allows students and teachers to work together in a consistent environment. It is an excellent example of how to use the ways in which children are comfortable as a way of teaching. In the Minecraft curriculum, students can develop their skills and learn a variety of subjects. The game is great for teaching students how to write code, but it can also help in other areas of learning. They even offer game-based learning that provides traditional knowledge and traditional knowledge.

Classcraft
This is a very different learning platform, totally focused on game learning to motivate. Classcraft allows students to create their own customized avatar within the game with different power. Cooperation is important in this forum; students are encouraged to work together to achieve their goals. The game has its own money, and prizes can be given to students for good behavior. Points can be used to unlock new avatars costumes, or even to unlock trained pets. Classcraft makes learning fun, and brings real video game experience to the classroom.

5. BIG DATA IN E-LEARNING

Image source: *www.analyticsteps.com*

Big data in education can help universities and colleges transform their business models, student academic results, and professor achievements. Additionally, data from big data can help educational institutions improve their technology systems. Professionals with knowledge of data science and statistics are key players in transforming the field of education. Universities rely on different technology systems to run various aspects of their organization. Big data provides educational institutions with opportunities to integrate critical programs, applications, and forums. This allows them to create efficiency and reduce costs. Big data changes the way schools analyze information and make decisions in areas such as academic performance, efficiency, organizational reach, and technology efficiency.

Educational Performance
Experts use data to evaluate student performance. The data may indicate potential opportunities to increase engagement. For example, faculty groups can analyze learning scales, complete course enrolment, and student achievement in order to develop a teaching design.

Skill Performance

Faculty can use the information obtained from big data analysis to create better learning environments and to effectively evaluate their subjects and subjects. For example, mathematical tools can provide data about students' incorrect answers to tests and the time they have taken to complete a task. This provides important information that allows the faculty to adjust their education as needed. With a feedback loop, detailed input from students can help ensure a positive student result in future semesters.

Organization Access

Amazon, Netflix, and others have used big data to track the activity of their customers in an effort to sell more products or services. Similarly, a college that uses recruitment tools such as customer relationship management (CRM) software can track the performance of prospective students across the web, through social media, and on mobile devices. When a trusted person visits a college ad or web page, the CRM tool may use 'cookies' (user data stored by the web browser) to redirect ads to that trust on other websites. This can help increase enrolment and earn money in tuition dollars.

Technology Efficiency

Big data in education can also play an important role in improving financial and business campus plans. The result could include improved efficiency and productivity. For example, analyzing compass network logs may reduce response times for service desk requests.

Big Data Transforms Education

Big data changes the way administrators, academics, and students interact. It influences how schools attract and view prospective students and how experts help current students. Additionally, new technologies and innovations create new opportunities for future use of big data in education.

Benefits of Big Data in Education

- With big data analysis, scholars can identify areas where students are struggling or thriving, understand the needs of each student, and develop personal learning strategies. It also allows students to choose their own learning styles. For example, analyzing big data may indicate that traditional, personal study methods lead to problems in student performance. The data may also indicate that the student is doing very well with online learning. In this case, the professor or counselor may work with the student in choosing a program or subject that best suits their unique learning style

- An added benefit of a personal learning approach is that students feel empowered to adapt their academic knowledge to their interests. This not only enhances their academic progress but also creates opportunities for future career success.

- Big data analysis also helps administrators read the numbers of dropouts. By identifying the causes of student dropouts, administrators can develop programs and strategies to improve student retention.

- Big data allows teachers to monitor students' behavior and understand how they are learning. With this knowledge, teachers can improve their learning modules and build personalized learning knowledge. With information from big data, teachers can measure their learning and their learning style.

6. BLENDED LEARNING

Image source: learnworlds.com

Integrated learning is a teaching method that combines both traditional teaching methods with online teaching methods, through a series of online educational resources and collaborative activities (Kyriaki Raouna- 2021).

The advent of digital technology in the 21st century and the widespread use of smart phones, laptops, and tablets in all aspects of daily life, has gradually brought this type of learning into the core structure of Higher Education. The purpose of its use is to make learning easier and more effective to bring integrated reading knowledge that provides real value to students and tailors to their needs. This gives students the ability to pause, go back, or skip forward online content but also the opportunity to choose a time, a way and a place where they can learn a new concept, complete lessons or explore.

7. MOBILE LEARNING

Image source: raccoongang.com

Mobile reading, also known as M-learning, has a new way of accessing reading content using mobile devices. With the help of the Internet and a modern mobile device, anyone can read anytime and anywhere they want. There are many educational apps available online, and they are gaining popularity among school and college students. When talk about mobile Learning, we are talking about the countless benefits associated with this learning platform. For example, the best and brightest of all the benefits is the flexibility of accessing learning resources anywhere and anytime. This growing demand and the popularity of eLearning for mobile phones is bound to dramatically change the eLearning industry.

Today we have 1.18 billion mobile connections, 700 million internet users, and 600 million smart phones, growing by 25 million quarterly. ***'We have a solid foundation for communication today'*** said *Ram Sewak Sharma, Chief Executive of the National Health Authority of India.*

Online Learning Apps in India

The following apps are popular in India. Which are Udemy, Coursera, edX, Khan Academy, Skillshare, LinkedIn Learning, Udacity, BYJU'S, Vedantu, Simplilearn, Doubtnut, Unacademy.

1.Khan Academy

Image source: lifesitenews.com

Khan Academy is a free learning program that aims to build a solid understanding of the concept. It includes an entire video library and commentary with teachers giving lectures on the visual board. There are questions, unit tests, and in-app homework to improve your skills. Mathematical and scientific content is aligned with the CBSE syllabus. In addition to Classes 1 to 12, Khan Academy also assists education for university students, including preparation for CAT, MCAT, GMAT, IIT-JEE, SAT, LSAT, and other tests. Since the forum is non-profit, it is completely free - no ads or subscriptions.

Key Highlights

- Huge video library
- School + Competitive Preparation
- Practice tests, exercises
- Completely free

2. Byju's Learning App

Image source: techprevue.com

Byju's is another popular online learning app that not only focuses on school-going students but also provides popular competitive exams. It includes all government level boards, ICSE, and the CBSE syllabus for classes 6-10, followed by IIT JEE and NEET Preparation for classes 11-12.Other competition arrangements include UPSC, Bank PO, IAS, and more. Note that lessons are not free - although they do have a free trial and curriculum from Class 4-12 students. You also get personal guidance from counselors, real-time reports, and more.

Key Highlights

- School + Competition Preparation
- One-on-one guidance, problem solving
- Practice times, exercises
- Scholarship Program

3. Vedantu Live Learning App

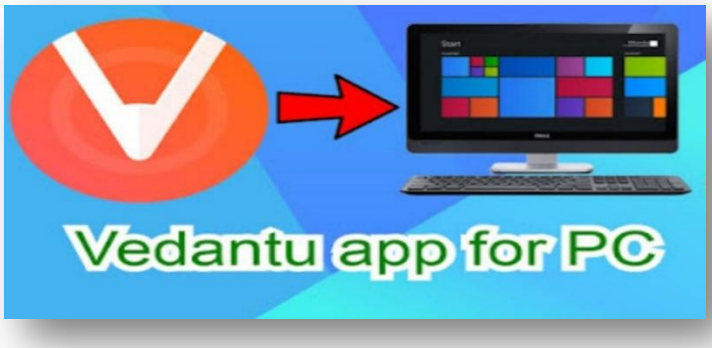


Image source: apkforwindow.download

Vedantu currently offers free access to all of its live online classes. Premium content for Classes 1-12, CBSE, ICSE, Boards, KVPY, NTSE, IIT JEE & NEET, can also be accessed free of charge in the app. In addition to live classes, Vedantu also offers recorded lectures, study materials, tests, assignments, and class-based doubts. You get complete study packages for each class and attend all the Indian comic tests to check your performance. In addition

to the standard lesson, you can also choose co-curricular programs such as Turbo Maths, Rocket Pro, Photography, Coding, Grammar, and more.

Key Highlights

- Free Live Classes, Advanced Content
- School + Competition
- Learning materials, resolving doubts in the classroom.
- Co-curricular studies

4. Udemy Video Courses

Image source:www.edukatico.org

Udemy is an online learning platform with video tutorials from professional instructors in various fields. Learning here is not like a school syllabus. You can choose from over 2,000 different topics, including coding and data science to marketing, Photoshop, yoga, and more. There are free and paid courses for business, development and programming, IT & software, office production, personal development, design, lifestyle, photography, health & fitness, music, and more. So if you are developing skills, Udemy is a great way to go.

Key Features

- Free and paid courses on over 2,000 topics
- Editing and code
- Skills Development, Business, etc.

5. Unacademy Learning App

Image source: inc42.com

Unacademy is very much inclined to prepare for competitive exams. Includes classes, live lessons, and videos from experienced teachers in exams such as UPSC, CSE, SSC Exams, IIT JEE, NEET, Bank Exams, CAT, CDS, AFCAT, CAPF, NDA, Air Force, Navy, State PSCs, and more a lot. Not only that, but you can also get your doubts

cleared and check your preparation with a live Unacademy test series, Questions, and a dedicated practice section. You can continue by downloading talk notes and revisiting key topics for recorded sessions.

Key Features

- Main Focus on Competitive Tests
- Live Exams, Questions, Exercise Phase
- Recorded Sessions
- Both Free and Paid Options.

6.Praadis Learning App

Image source: praadisedu.com

Praadis is one of the most unique sites on the Internet and is among the Top 10 best learning apps in India. Includes interactive 3D videos, Class Videos, Unique Storytelling Idea, Booster are some of the features that make it top of the list. Praadis has a separate app for young and old and one main app for parents to track their children. Apart from this they also offer to prepare for competitive exams or entry exams such as AILET, LSAT, CLAT, JEE, NEET, GMAT, GRE, etc. making it the best learning app in India. By providing mock testing in PIE applications you can win amazing prizes. In addition, Praadis offers coding classes from beginner level to prepare students for the future from today.

Praadis Education organizes Parent-Teacher meetings regularly to improve student performance. Praadis Education has already acquired more than one lakh subscribers and 5 lakh plus downloads. Praadis Education is growing rapidly as a digital training platform and will reach the top of the EdTech Sector. Praadis Education live lessons help to dispel students' doubts about professional teachers in real time. Praadis Education teachers are clear doubts for each individual student. The institute believes that a good understanding of topics and subjects is the foundation for future founders. The Praadis Education App is already a complete learning program and has transformed education by making ideas easier by using different learning styles.

Key features

- It is a comprehensive study program with the latest instructions available.
- Contains 4D AR creative educational games for elementary and middle school children.
- Older people can also find common ground or reasoning questions to test their knowledge effectively.
- She has achieved success in a variety of learning styles which proves to be a blessing for students around the world.
- Provides 3D instructional videos and animated stories full of fun that make the learning and holding process for kids smoother.
- Provides customized content that suits the unique needs of each student.
- A special general information page has been compiled to keep readers informed of world facts.
- Students can contact the teacher at any time through the Praadis Chat section and get help with all the doubts and difficulties they face.

Tips for Starting an Additional Student Voice in the Classroom.

Student surveys

Give students the opportunity to freely express what they want most or less in class - it may be anonymous. A survey is a quick and easy way to gather information about how students feel about a particular class discussion, project, or task. Provide extra space at the end of the survey to gain more insight into the details of the decision they made in the survey. Choosing an anonymous survey route can help students feel free to express their true feelings about the topic and gives you the opportunity to criticize without hesitation.

Open a class discussion

Depending on the variability of the class, this may be due to more or less formation. There are several ways this can be done split into groups or open a whole class to discuss ideas. Group breaks can help students get to know each other better and feel more comfortable talking to each other. By separating them into impossible groups, students have the opportunity to hear from students who will not normally share ideas. Each group can make a unanimous decision or share how the discussion went about choosing a leader. Opening an entire class to discuss a topic can create more relationships between students and spark a healthy debate. While most outgoing students may be the ones who speak the most, you make this set up beautiful and informative.

Start the class with practice

Giving students a starting grade can help them focus on the day or the subject. Each day may involve a different thing or the same question every day. Work can be an art form that evokes new ideas like squiggle birds with Game Storming showing how the brain will fill the void without much content. This may lead to a discussion of how we think of others without first getting to know them. Morning conversations can be as simple as this and evoke a sense of change in perspective.

Check-in

In every class or year, it may be helpful to examine each student individually. Although a survey helps students to understand what they think about a particular topic, it can be helpful to examine them in person. If there is too much for each person to take, choose a simple way to make sure everyone understands what is being said before moving on to the next topic.

Virtual opportunities

Any of these options can happen in person or virtually. In the current classroom environment, people are learning from across time zones but still want to feel a sense of community. The best way to reach students and create a better learning environment is by offering avenues for them to express their voices in a comfortable space. The virtual classroom landscape is wider than teachers have ever imagined so collaboration and energized discussions don't have to stop just because the school doors have closed.

Self study

Image source: peoplematters.in

Self-study is the practice of managing your education by finding what you need to learn, setting learning goals, choosing the most appropriate learning strategies, and evaluating your learning outcomes. Today, there are millions of resources available to help us learn almost anything under the sun. From blogs to podcasts, to YouTube videos, to online courses, to webinars, to the world of offline learning opportunities such as job search, job training, teaching, etc. - there are so many tutorials available that it may seem a little confusing at first. deciding where to start. That's why self-study is a skill in itself. With so much content available, it is easy to become overwhelmed if you do not have a plan, discipline, and commitment.

One of the most important benefits of independent reading is that over time, it develops a strong ability for students to read according to their learning styles, while traditional education often places great emphasis on 'what is to be learned'. This reading style allows students to control:

- Assessing their learning needs.
- Building their learning goals.
- Identifying learning resources.
- Identifying material for learning.
- Learning strategies.
- Assessing learning outcomes.

In this learning process, students do not have to wait for progress; once they have completed their final course, they can proceed automatically without the need for a tutor. Organizations are looking for the tool and are asking e-learning software companies to outsource the tool.

Will Future Education be Online Only?

Image source: www.alterstate.org

Before the epidemic, online education was seen as the only alternative for students seeking higher education. But since the epidemic began, Covid-19 has forced teachers and students to turn to virtual learning. During the epidemic phase, we saw that what was taught in physical form was converted to online mode and as the epidemic was receding, we could see education slowly shifting to offline. We noticed that due to the increase in infections, offline classes were re-online and students were also given the option to attend online or in person, known as the Hyflex model. We will also see a hybrid model of education in the coming days, which will include online learning but examinations and other activities will be conducted in physical sessions. In addition, platforms such as Zoom and Google Meet allow teachers and students to easily learn and communicate regardless of time and place.

As mentioned earlier, where online education was mostly for higher studies, we can see the next generation of online learners that online education will be more focused on students between the ages of 5 and 16. As we move forward, we also see people who are self-taught. They get information from Google and YouTube where they are not only able to learn but also able to implement it in the real world. Autodedictism is less of a trend and more like a big economy. As technology advances, such as AR specs, blockchain technology, and the introduction of Web 3.0 over the next few years, we will see unconventional methods of teaching and learning that are beyond video and text on screen. Covid-19 is no longer a temporary system for online education, we still see how online education is preferred by 90 percent of the world's population and how much it is still affecting our daily lives.

CONCLUSION

The epidemic that has plagued the delivery of online classes and technology has played an important role in that. The current situation seems to be the best form of education, at the moment, online, so it is important to advance online education. Epidemics have opened people's eyes to the possibilities of distance learning as a means of delivering materials and upskilling. With coronavirus now redefining education, every student has become an online learner, and universities that already have a strong online curriculum benefit the most.

Digital methods of teaching and learning are becoming the new norm. But this is to come with many challenges. At least 50 percent of the Indian population is confined to rural areas and is deprived of basic necessities like electricity, water, shelter. If we want to educate that part of society then we first need to meet their basic needs. The government needs to take steps to provide them with proper shelter and 24-hour electricity, otherwise the new digital education technology will not have a positive impact on our society, only the upper class will benefit and the rest of the population will not benefit still living in darkness and illiteracy. In the near future, online education is going to be a part of everyone's life and we need to be prepared for change. It is no longer just an option but a necessity. New technologies in online teaching and learning break the time and place of learning. Today, both students and teachers have many opportunities to create a highly personalized learning environment with more focused lessons, more effective collaboration, and a better understanding of learning materials. Educational automation saves time and effort in common tasks such as taking notes, conducting tests, building websites, etc. and gives teachers more opportunities to focus on making learning interesting, effective, and engaging for every learner.

Covid-19 has created a long-lasting impact on the world and its outlook to almost everything. We used to consider e-learning to be a supplementary tool for school or college education which has now shifted to as a primary source of learning. If approached in the right manner, e-learning can re-define the education system of the country. Online education opens up many possibilities for students and teachers. However, it can also widen the disparities in the socio-economic fabric of India. All of our policies and interventions related to online education should strive to be inclusive. Good vision, sincere efforts and time will show India the way forward. The need for higher skills and agile education is growing, and online education is the only powerful medium available to meet this demand.

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