DISTANCE EDUCATION AND MODERN E-LEARNING TECHNIQUES

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ABSTRACT

With the emergence of technology, the concept of learning by non- formal or Distance Mode can be the best choice for the students who can't go for the formal or regular mode of Education, due to one or other reasons. In previous era of hard bound books, it was quite difficult to dispatch books to every candidate learning through distance mode. And delivering lectures of same quality to every candidate learning through Distance mode is not possible because of the distributive nature of the Distance learning (Distributed Study centers). But by using advents of technology in Distance learning, such issues can be tackled and we can provide better education by best means to the distant learners, Distance Education by means of Audio Visual contents as instructional materials can be one of the options. Audiovisual contents may include lectures in the form of Audio recordings or video clips and even interactive web based modules. We can provide every student same lecture at a time with distributed study centers by using video conferencing. We can also take advantage of multimedia by putting text together with images and creating interactive animations that can help learners to grasp the contents and concepts in much easier manner. With the help of web we can put all our audio, video or animated contents on one single platform and our distant learners can access our e-learning contents from any part of the world. Our distance learner can have on demand e-notes or e- books. We can also provide a complete package of their course by just a DVD, which can have all the concerned material in the form of video lectures, audio lectures, manuals, animated movies of course material and even e-books.

KEYWORDS*: Distance Education, e-learning, Information and Technology, Multimedia.*

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Introduction

"*Universities won't survive. The future is outside the traditional campus, outside the traditional classroom. Distance learning is coming on fast.*"–Peter Drucker, 1997.

Digital world is becoming daily life support, but also it's the basic factor in the globalization of the world. New technologies are being introduced continuously. Thanks to achievements of highly powerful and intelligent tools and with the rapidly emerging technologies, e-learning is dynamically evolving in the field of Distance learning mode. Such advancements in technologies have expanded the chances of taking e-learning to greater heights and have increased ease of teaching- learning process. E-learning (or eLearning) is the use of electronic educational technology in learning and teaching. In this piece of work, I am going to discuss the new and emerging technologies that can prove to be very helpful to distant learner and Distance Education mode of Education.

Big Data

Big data is being generated by everything around us at all times. Every digital process and social media exchange produces it. Systems, sensors and mobile devices transmit it. Big data is arriving from multiple sources at an alarming velocity, volume and variety. To extract meaningful value from big data, you need optimal processing power, analytics capabilities and skills.[i] Taking in consideration the e-learning, Big Data is produced by our Learning Software and Content Management System and other sources like social networking sites and blogs etc. via which distant leaner interacts with our learning programs. Big Data Analytics can help the educational organizations to forecast, predict scenarios that can help in decision making policies for the e-learning, and take preventive actions like if a candidate is not able to understand a particular concept, we can improve the quality of material based on the data

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collected. We can use the concept of Big Data for revolutionize the way e-learning or e- content is designed, developed and delivered revolutionize the way e-learning is designed, developed and delivered. Today's world is technology driven; our kids learn to talk later but can play android apps of any sort. The world is going through the time where technology is forcing us to spend most of our time in highly digital devices by providing every sort of facility to people, from newspaper to shopping we rely on the digital world, virtual shops and our tabs. We go through large number of the websites daily, most of them record our moves and use our history with their website for decision making for marketing and launch of new products. We can use the concept of Big Data in our education system for providing the precise information to the distant learners. Education is increasingly occurring online or in educational software, resulting in an explosion of data that can be used to improve educational effectiveness and support basic research on learning. In the e-learning domain too, there are many interesting experiments being carried out around the world, in order to understand the enormous potential of Big Data. For example, with the help of Big Data, you can watch your learners (virtually, of course!) and track:

- The areas of the program they find hard and spend more time on.
- The pages they revisit often.
- The areas in which they get stuck.
- The sections they recommend to their peers.
- The learning styles they prefer.
- The time of the day they learn better[ii]

Application Programming Interfaces (API)

API stands for application programming interface. An API can provide a hook for colleagues, partners, or third-party developers to access data and services to build applications such as iPhone apps quickly. The Twitter and Facebook APIs are famous examples. There are APIs that are open to any developer, APIs that are open only to partners and APIs that are used internally to help run the business better and facilitate collaboration between teams. An API, then, is essentially a contract. Once such a contract is in place, developers are enticed to use the API because they know they can rely on it. The contract increases confidence, which increases use. The contract also makes the connection between provider and consumer much more efficient since the interfaces are documented, consistent, and predictable.[iii] Application Programming Interfaces or APIs is most emerging and promising technological possibilities that hold a great promise for teaching and learning. APIs offer incredible possibilities for teaching professionals to extend the power of present day teaching-learning systems and tools. They could also help us share data about distant learners (their progress levels), learning resources, ideas, and much more. This technology, we believe, is going to play a crucial role in the teaching-learning scenario of the future. We can use available APIs for providing the quality study material on a best platform available. Some of the most popular APIs related to education and learning available on the Internet are After the Deadline API, Khan Academy API, Blackboard Collaborate API, Knewton API, etc.

Tin Can API

What is the Tin Can API?

The Tin Can API (sometimes known as the Experience API or xAPI) is a brand new specification for learning technology that makes it possible to collect data about the wide range of experiences a person has (online and offline). This API captures data in a consistent format about a person or group's activities from many technologies. Very different systems are able to securely communicate by capturing and sharing this stream of activities using Tin Can's simple vocabulary.[iv] It offers more features that can add to the excitement of the learning professionals by gathering the data across the globe in a consistent format. In this knowledge era where most of learners are opting for learning via informal mode, this new trend is going to make us change the way we consider e-learning. It is expected to bring in more amazing changes in the way learning is conceived, designed, delivered, and tracked, thereby helping us take performance improvement to the next level. If it is combined with the power of Big Data, Tin Can API could help us transform the learning process to more personalized and adaptive experiences. Tin Can API has already started creating an impact on the tools in the e-learning industry with more and more companies adopting this new standard.

Bigbluebutton

BigBlueButton is an open source web conferencing system for on-line learning developed primarily for distance education. The vision behind this technology is that every student with a web browser should have access to a high-quality on-line learning experience. BigBlueButton supports various formats audio and video sharing, presentations with extended whiteboard capabilities - such as a pointer, zooming and

drawing, desktop sharing, integrated VoIP (*Voice over IP*) using Free SWITCH, and support for presentation of PDF documents and Microsoft Office documents. Moreover, users may enter the conference in one of two roles: viewer or moderator. It can be an edge for the distance learners, as they can attend the classes at their places and can be the part of class going on. Features that a teacher will love are: Multiple users can share their webcams, thereby giving on-line tutoring, small group collaboration and distance education a personal touch. As moderator, you control the audio of all users and you can make anyone presenter (including yourself). The built-in whiteboard tools allow you to zoom, highlight, draw and write on your presentation to make your point clear to remote students. Features for learners: As a viewer, you can change your layout to emphasize the presentation, chat or video-whatever makes the most sense for enhanced learning. You can chat with everyone in the class or have a private chat with the teacher. Don't worry if you've missed a class. BigBlue Button records the session for later playback.[v]

Responsive Design and E- Learning

In recent years people have switched from conventional mode of using computers for internet to handheld devices. Everywhere you look you are likely to see someone on a Tablet, Smartphone or Netbook. Each of these has a different screen size and resolution. Responsive design is when onscreen content automatically changes layout depending on the screen size it's being displayed on. The changing landscape of the mobile devices means that learners' expectations are also changing. They want to take their learning from their Smartphone's just as easily as they would on a desktop computer.[vi]

Whenever you access a website on a phone that is intended for PC, you are left with two choices one you can see the whole page with tiny text and another zoom in and try to make sense of the website by crawling around it as if you're an ant on a massive game board. Just to make matters more complicated, most mobile devices don't come with just one orientation. Users expect their content to resize with their whims of holding the device in portrait or landscape. Needless to say designing a course for each and every type of device would be rather labor intensive. This scenario makes it very challenging for learning designers to ensure that the learning solutions they design work on all these devices with different screen sizes, shapes, resolutions, or Operating Systems (OSs). Responsive e-Learning Design (RED) is the solution to address this challenge. It is the technology that helps us design and deliver learning solutions that work across a broad range of devices smoothly. It follows and adapts the standards laid out by Responsive Web Design (RWD). Taking advantages from this technology we can build a single application for multiple platforms and devices that possibly every distance learner carries. By using this technology our aim of providing learning environment to every distance learner can be made possible as we intend to provide cross platform e-learning modules that can be easily accessed by any type of device whether it be a computer, net book, tablet or a Smartphone.

Conclusion

With the introduction of latest technology in Education system, we aim to bring more students to the updated world of technology. They can access any kind of study material at their places on their Smartphone, they can attend the online classes provided by the instructors and they can virtually take part in the discussions going on the real class. They can save the ongoing lecture and later can revise the same. The student can grasp the concept by watching how things work in reality by watching to the animated version of the concept. The concept of e-learning is growing fast in the formal mode of the education as they provide e-learning as a supplementary to the formal education. But if we can use it in our Distance or Informal mode of the education, it can prove to be the best way to remain connected to your students during and after the course and the student can attend the classes from any corner of the world and if he is not able to attend the particular class online the other mentioned technologies are there for him to maintain the standard of the education as of a formal student. Finally, the use of technology should be cost-effective, i.e. trainer/instructor and designer of on-line content should always strive to objectively evaluate how the expensive technology that they want to apply (and to impose the students) more effective ways in which education of the well-organized and illustrated books of similar education content.

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[ii]   http://learnnovators.com/big-data-a-game-changer-for-e-learning/
[iii]   APIs: A Strategy Guide Daniel Jacobson, Greg Brail, and Dan Woods ISBN: 978-1-449-30892-6
[iv]   http://tincanapi.com/overview/
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