

The Digital Revolution and Its Impact on Education

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Abstract

Digital India is a campaign launched by the Government of India to ensure that Government services are made available to citizens electronically by improving online infrastructure and by increasing Internet connectivity or by making the country digitally empowered in the field of technology. All schools and colleges are contending with the impact of the digital revolution on both the delivery of education and on the learning styles of our students. Online courses are now in greater demand than the corresponding face-to-face courses. Online education has become the latest trend and has broken the age-old bastion of the brick and mortar institutions. The online platform is available 24×7, so the students can participate whenever convenient, since they are not tied down to a fixed schedule. Moreover, the online education is easily accessible across the various devices that we are all so familiar with and to top it all, they are eco-friendly too. We get to possibly save a lot of trees from being cut by changing our habits from books made of paper to subscribe to the digital realm. The present paper is an attempt to analyze the impact of digital revolution in the field of Education.

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Introduction

The rapid growth of Information and Communication Technologies and innovation in digital systems represent a revolution that has fundamentally changed the way people think, behave, communicate, work and earn their livelihood. This so-called digital revolution has forged new ways to create knowledge, educate people and disseminate information. It has restructured the way the world conducts economic and business practices, runs governments and engages politically. It has provided for the speedy delivery of humanitarian aid and healthcare, and a new vision for environmental protection. It has even created new avenues for entertainment and leisure. As access to information and knowledge is a prerequisite to achieving the Millennium Development Goals – or MDGs – it has the capacity to improve living standards for millions of people around the world. Moreover, better communication between people helps resolve conflicts and attain world peace.

The Digital Revolution refers to the advancement of technology from analog electronic and mechanical devices to the digital technology available today. The era started to during the 1980s and is ongoing. The Digital Revolution also marks the beginning of the Information Era.

The Digital Revolution is sometimes also called the Third Industrial Revolution.

Digital Revolution as explained by Techopedia

The development and advancement of digital technologies started with one fundamental idea: The Internet. Here is a brief timeline of how the Digital Revolution progressed:

- 1947-1979 -The transistor, which was introduced in 1947, paved the way for the development of advanced digital computers. The government, military and other organizations made use of computer systems during the 1950s and 1960s. This research eventually led to the creation of the World Wide Web.
- 1980s - The computer became a familiar machine and by the end of the decade, being able to use one became a necessity for many jobs. The first cell phone was also introduced during this decade.
- 1990s - By 1992, the World Wide Web had been introduced, and by 1996 the Internet became a normal part of most business operations. By the late 1990s, the Internet became a part of everyday life for almost half of the American population.
- 2000s - By this decade, the Digital Revolution had begun to spread all over the developing world; mobile phones were commonly seen, the number of Internet users continued to grow, and the television started to transition from using analog to digital signals.
- 2010 and beyond - By this decade, Internet makes up more than 25 percent of the world's population. Mobile communication has also become very important, as nearly 70 percent of the world's population owns a mobile phone. The connection between Internet websites and mobile gadgets has become a standard in communication. It is predicted that by 2015, the innovation of tablet computers will far surpass personal computers with the use of the Internet and the promise of cloud computing services. This will allow users to consume media and use business applications on their mobile devices, applications that would otherwise be too much for such devices to handle.

Digital Revolution and Education

Many years back, Star Trek (the original) told us that ‘space is the final frontier’. Today living in the 21st century, we exist in a world devoid of any frontiers. Most of us are but a digital identity in a Digital world. Almost everything around us is either digital or getting to it at a fast pace. This is the age of having virtual conversations, virtual meetings, virtual shopping, and virtual relationships – a virtual life indeed.

Being a virtual being, can the education sector be far behind? Online education has become the latest trend and has broken the age-old bastion of the brick and mortar institutions. The online mode has become ubiquitous. The digitalization of education keeps the students in-sync with the contemporary world. Student can get the feeling of being in a virtual class anywhere anytime, without being burdened by the sheer weight of books. Online learning also provides many additional benefits beyond convenience and financial savings. An independent approach to online learning teaches the student to be a more effective time manager and to develop the technological skills needed in their future careers. Knowledge of the functions of the Internet, typing and software programs are necessary to be considered digitally literate, and online learning helps strengthen these skills. Online education also makes learning more engaging and effective.

Online education is growing at 19% per year, online enrollment now represents 25% of all higher education enrollments. Now, we are faced with four main options for delivering education:

1. The Traditional Lecture: Mainly a monologue where information is delivered orally from one teacher to many students at a set time each week.

2. Distance/Online Learning: Individual students are given the course materials and assignments to work through on their own and at their own pace. Usually a solitary learning experience, with little student/teacher interaction and no student/student interaction. High dropout rate.

3. Flipped Classroom: Instead of lectures in the class and assignments at home, the class is “flipped” so that students watch/listen to the lecture at home in their own time, and come to class to work through problems, assignments, application of lessons together with the teacher and other students.

4. Blended Learning: This tries to combine the best of the previous three methods. Most (though not all) lectures are delivered online. Classroom time is given to working on assignments, testing learning, applying knowledge, discussion, and also to special lectures. In addition, technology is used to facilitate collaborative (student-to-student) learning via forums, etc.

Here’s a paper with a synopsis of some of the most significant online articles that have been written on the evolving educational scene over the past year or so. The research is increasingly showing that the Blended Learning model is the way of the future for many (though not all) subjects. The advantages, in summary, are:

Advantages

1. It costs the school less (30-50% less) and should therefore either reduce student costs or increase educational value.
2. Reduced tuition increases accessibility of education to poorer individuals and communities.

3. It saves time because the video lessons are prepared once and used (with some updating) thereafter. It also saves the student time because he/she does not need to be travelling to/from so many lectures.
4. Class time used for practical application of knowledge.
5. Emphasis not just on what you know, but can you use what you know. Not just the transmission/reception of information or ideas, but how to use them.
6. More time for one-to-one mentoring, modeling, relationship building.
7. Moves away from seat-time (credit hours) to competency.
8. Tends to produce more creative and accurate assessment methods than traditional major paper plus end-of-semester exam.
9. Plays to strengths of digital generation and provides means for constant student interaction and student-to-student teaching/learning.
10. Reduces the need for new buildings.
11. Increases personalization of education, customizing courses to individual learning styles, speeds, and needs.

Questions

- What do you think of these trends?
- Should seminars just stick with the traditional methods?
- What's your experience of these different methods?
- What are the best ways to make blended courses work?
- Are there any subjects that should always be taught by traditional lecture?

- Should schools offer different methods to suit different kinds of learners?
- What should be a professor's role? Do we need professors dedicated to online teaching?

Comparing Positive And Negative Effects Of The Digital Revolution In Education

In her article "Focusing the Digital Brain," Marilee Sprenger takes a fairly critical view of the way that technology has influenced students' thinking. She talks about the idea of multitasking and asserts that although this idea is popular, it is flawed and even impossible.

Although kids today are physically able to pay attention to many devices at once (the article mentions the common practice of simultaneously working on a laptop, listening to an iPod, and texting on a cell phone), Sprenger argues that this creates a state of "partial attention" and that the quality of attention paid to any one of the tasks during the process of "multitasking" is far inferior to the quality of attention paid if the student is focused on one thing.

Sprenger also discusses how the "hyper-connectedness" of today's students can actually lead to increased stress and diminished social skills. She proposes several ideas for slowing down and focusing brains that have been trained toward this state of "partial attention."

She suggests that teachers should have students' journals in order to help them reflect on their own thoughts and experiences and to process their learning. She also suggests pairing them off in class to have face-to-face discussions of the material so that they can practice some of the elements of interaction that are lost through digital communication, such as active listening, eye contact, and body language.

Many of Sprenger's points are valid and can definitely help to inform and influence educators. However, one of Sprenger's arguments against the digital world is that it does not foster quality interaction.

Social networking contradicts that viewpoint. If the power of social networking can be harnessed in the classroom, this type of technology can make valuable contributions to the learning process. While physical interaction is definitely necessary, social networking can complement and enhance the physical community of the classroom. It can also document the learning and the community building as they are taking place, giving concrete evidence of which strategies are working and which ones are not. Social networking is a fantastic tool that teachers can use to capture the minds of today's digital learners.

Conclusion

Like most technological advancements, the digital revolution has changed our lives in both positive and negative ways. As educators, it is definitely part our job to try to mitigate the damages from the negative aspects. However, we must not ignore the positive aspects and must try to use them to ours and our students' advantage.

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