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## **DISRUPTIVE TECHNOLOGY & EDUCATION**

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### **ABSTRACT**

In this technological era, information and communication technology opens many doors for digital natives too learn best in education. Technology is used to interact with students, parents and teachers to work beyond the classroom. Disruptive Technology is the disruption of markets when new entrants find ways of making a product which is simpler than the existing product, performs the same functions and is more affordable. Since it is perceived as a better, user friendly product at the lower price, it disrupts the market for existing product. In the field of education, disruptive technology is essentially the use of information communication technology to deliver education whether it is conventional online education or massive open online courses, cloud computing or any other form or mode of delivery of education content. Thus, this article reflects upon disruptive technology in education.

**Keywords:** Disruptive technology, Massive Open Online Courses, Information and Communication Technology, Innovation, Education

### **INTRODUCTION**

Innovation is a new idea, device or process. Innovation can be viewed as the application of better solutions that meet new requirements, inarticulate needs, or existing needs. This is accomplished through more effective products, process, services, technologies, or ideas that are readily available. The term innovation can be defined as something original and as a consequence, new that “breaks into” the society. While a novel device is often described as an innovation in economics, management, science and other fields of practice and analysis, innovation is generally considered to be a process that brings together various novel ideas in a way that they have an impact on society. Innovation differs from invention in that innovation refers to the use of a better and as a result, novel idea or method, whereas invention refers more



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directly to the creation of the idea or method itself. Innovation differs from improvement in that innovation refers to the notion of doing something different rather than doing the same thing better. Being innovative is about looking beyond what we currently do well, identifying the great ideas of tomorrow and putting them into practice. Innovative is about doing things in new or different ways. It may range from continuous improvement of existing practices through to transformation of how we achieve goals or rethinking what those goals are. Innovation starts locally-born out of need. The trick is sharing that innovation with others so that we all learn and benefit, taking this spark system wide, country wide and the global. To quote Charles Leadbeater “innovation spread differently, it is more a social change process than service to be codified and improved”. Innovations in education are important because education plays a crucial role in creating a sustainable future. The innovation resembles mutation the biological process that keeps evolving so they can better complete for survival the transformation of Information and increasing specialisation of organisation call for high skill profiles and level of knowledge in education.

The term Disruptive innovation was coined by Clayton M. Christensen, a professor from Harvard University; this term became the most influential business idea of the early 21st century. It refers to an innovation that creates a new market and value network and eventually disrupts an existing market leading from products and alliances. A disruptive process can take longer to develop than by the conventional approach and the risk associated with it is a higher than the other more incremental or evolutionary forms of innovation, but once it is deployed in the market, it achieve a much fourth penetration and high degree of impact on the establishment. Disruptive innovation is a process by which a product or service takes root indirectly in simple applications at the bottom of the market and this relentlessly moves up displacing establishing competitions.

A classic example of the internet being unleashed was the restructuring of the book selling industry. Uber is the perfect example of what capitalism wants to be when financialization, globalization and digitalization come together. Huge volumes of financial capital banking rolled Uber through huge losses as it expanded across the globe. The big selling chain lost out to Amazon. Not all technologies are disruptive. An improvement upon on

existing system or a model is disruptive only. Innovation should be sustainable. Creativity is the thinking aspect, whereas innovation is action. The innovation should be evolving by disrupting and disruptors. That is, one has to keep on developing better, strong, improved and cost-effective technology. Disruption is a positive force. Disruptive innovations are not breakthrough technologies that make good products and services more accessible and affordable there by making them available to a much larger population. In this context, it is apt to remember the fact that accessibility and affordability are important demands of present higher education system. (Subbiah, 2018). The disruptive innovation have a direct bearing on education as it has also become a business following is a list of innovation related to education:

- Online education and MOOC
- E-Learning/ online learning
- mobile learning
- tablet computing
- Personalization and customisation
- Learning Analytics
- 3D learning
- Assistive special needs
- Innovation and teaching methods
- Games and gamification
- Computer assisted instruction
- Focus on Science Technology Engineering and mathematics
- Cloud computing
- Virtual classrooms
- Visualisation with production studios
- Voice based virtual assistance
- Adaptive learning
- Websites and social media for communication
- Advanced robotics
- Wearable Technologies

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The online courses provide practical knowledge required for the world of work which the conventional universities are not able to, as they are most theoretical in their approach and so there is a gap between the skills needed and Skills Developed by higher Institutions of learning. People also enrol for them because they want to develop competencies for getting jobs or for upgrading their career prospects in the jobs they are doing. Further, people feel that these courses might prepare them for jobs globally and hence can contribute to their career advancement (Sharma, 2018).

According to Meyer (2010) the role of disruptive Technology in the future of Higher Education: “To begin with, we will hear new programming or instruments named Disruptive Technologies as much of the time as we do now. It is ensured that the future will see more problematic innovations, since we appear to like the thought and discover it in numerous structures. No instrument, all alone, is probably going to deliver disruption. Disruption takes irritating business as usual, concentrating on under study focused getting the hang of, evolving connections, honing our understanding, and outlining guideline to build learning and lower costs”. Really inventive the disruption incited by innovation in higher education will compel us to think in a new ways, giving chances to the progressions required for higher education to survive and flourish (Meyer, 2010).

### **Disruptive technology in higher education:**

The assumption about higher education is that the institutions admitting the best students and do state of the art research are ranked at the top of the chart. This has resulted in teaching and research getting tightly woven. But information overloading has made the policy makers introspect the very basis for this kind of combination of teaching and research. The era of digital learning has transformed the process of learning and is student centric. It facilitates the students to learn at their will, thus making it happen in different context, locale and time, and prepares them to stay focused on career development. This model improves the outcome with no cost escalation. There is lot of flexibility with time and allowing the students to pace through the course and spending time where they require more focus and evaluation is based on the outcome. The benchmarking now shift to outcome in order to judge the students and schools rather than seat time and credentials. The institutions are forced to revisit their policies on making quality education affordable to students rather than enabling them to be affordable (Manian, 2018).



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### **Advantages of disruptive technology:**

Educationists have started voicing their prediction on the end of conventional education system, all due to the advent of myriad of disruptive tools like internet, wikis, blogs, social media, mobile devices, open source tools, open education, anytime/anywhere education, social bookmarking, sharing sites ( for photos, videos, music, files of all sorts) , wireless connections, google, Creative Commons, instant messaging, internet telephony, social networks, free software, digital cameras and recorders, cloud computing, cheap storage, groupware, broadband and virtual worlds. These tools stand testimony to the impact of disruptive technologies on higher education. Thus, it is evident that the rise of disruptive technology has a significant impact on the very model of higher education. These technologies have rendered higher education simple, affordable, accessible and convenient as against the conventional model which is marred by complexity making it expensive and inaccessible. Innovation makes it possible by redefining quality by developing a simple application which matured to acquire more and more market share over time. Two key elements are inbuilt in disruptive innovation. One of the key elements that of a technology enabler which paves way for the innovation to initiate an application is inclusive and improves the performance by replacing the old products and services without any change in costing. Business model innovation is the second element of disruptive innovation. This model, when incorporated into an existing model, aids the existing model to perform and serve their clientele better. It is predicted that the institutions will gradually adapt to the changing environment and digital learning will trigger the institutions to come out with customized learning solutions to serve individuals better. They will be able to come out with learning materials prepared by the best in the business. Proven methodology for these changes is online learning. A study shows that online learning has an edge over conventional learning and together produced the best results. The reasons for this are the control of the student over his learning and spending logical time on tasks at hand. Hence, adopting conventional metrics to measure education will seriously hamper the innovation practices in delivering affordable quality education to people who do not have access to educational. It becomes essential for the policy makers to develop models which provide autonomy to the innovators. They have to embrace disruptive technologies to meet the goals of education. The disruptive technologies in higher education will aid and sustain research as they simplify the process with its prowess of connectivity and knowledge sharing.

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### **Disadvantages of disruptive technology:**

Though the disruptive technology comes with a plethora of domination over the conventional model, when applied to higher education it will not replace the model followed by the higher education institutions as observed by Christensen. It is true as it will lack in providing the students with the much needed hands on training while acquiring a skill set. The emotional quotient will also be lagging as the student is deprived of human interface. The evaluation process in the online learning needs to be made water tight and structured as it lacks in giving a proper sense of feedback to the students.

### **CONCLUSION**

In conclusion it can be said that disruptive technology is here to stay. Since higher education system is also evolving, it is trying to reap the benefits of disruptive technology to make it more robust and socially relevant. These changes will become so rampant in future that it will be difficult to recognize the face of higher education. The universities now end up becoming interdisciplinary; have virtual classrooms and research facilities, virtual libraries and virtual instructors. It does, however, not degrade educational experience but strive to augment it. In the era of innovation, entrepreneurship and disruptive technology, the expectation to deliver has become a challenge for the higher education institutions. The higher education institutions have to necessarily undergo a fundamental transformation relieving itself from the clutches of conventional policies which are becoming obsolete. Innovation and entrepreneurship leading to disruptive technologies have impacted the higher education institutions and have driven them to make suitable changes to accommodate the paradigm shift occurring in higher education. Online learning has the potential to enable universities to cater to and serve the varied need of learners. If adopted judiciously, the technology has widespread scope for societal and economic potential. One has to tread very carefully while harnessing technology to higher education as it is the key for keeping human values intact. Further, a judicious blend of conventional model plugged in with the disruptive technology has disruptive technology has to be administered and has to be discipline specific.



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