Abstract

What role are disruptive technologies currently playing in higher education in times of the Coronavirus Pandemic? (A Focus on UK universities)

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The objective of this study is to contribute a fresh perspective as to the role that disruptive technologies are currently playing in higher education in times of the Coronavirus Pandemic

The 2019-20 Coronavirus pandemic (also COVID-19) has had long-stretching outcomes beyond the spread of the disease, efforts to quarantine and find a vaccine. As this situation has spread around the world, a plethora of sectors such as finance, hospitality and the aviation industries have been significantly affected. Naturally concerns have begun to shift to the education sector generally and the higher education sector specifically (HEI)

Dealing with the coronavirus is quite perplexing for high education providers because they perform such an extensive variety of task. Universities are learning institutes in which undergraduate and postgraduate students gain knowledge and develop critical thinking skills; it is also where academic staff lecture and carry out ground-breaking research. These points mentioned earlier in the paragraph give us the evidence to say that universities have a wide variety of shareholders because of the various role that they play in society.

Traditional education is facing increasing difficulty in both financing and innovation, now compounded with the effect of the coronavirus. Higher- education institutions are now

forced to adapt or be left to an unpleasant fate. This 'adaptation and transition' are being developed with the help of disruptive technologies.

This research is looking to uncover what role disruptive technologies are currently playing in the in times of the Coronavirus Pandemic, focusing on UK universities. The research adopts a qualitative research methodology-purposive sampling methodology is utilised thus in-depth interviews were conducted with seven experts to gather data and insight on the role disruptive technologies are playing during the COVID-19 pandemic.

A plethora of research opportunities are presented from this study, two are particularly interesting. Future research could look to investigate what role disruptive technologies could play in the delivery of certain subjects and if that would have an impact on student grades. Alternatively, research could investigate how can higher education institutions facilitate student led learning environment using technology.

This study contributes to disruptive innovation theory applied to education by developing and utilising a new analytical framework to analyse if such technologies will have a significant impact on teaching/learning and operational activities in higher education institutions. This framework helps limit 'naïve enthusiasm' expressed by individuals when a new disruptive technology emerges, particularly in higher education (Meyer, 2010).

Disruptive technologies are enabling possibilities that were under-appreciated, particularly before the COVID-19 pandemic. The mass adoption of Online learning enabled by Zoom, Microsoft Teams and Collaborate has transformed how HEI offer their services. Online learning enabled by disruptive technologies allows individuals who do not have access to conventional forms of education for whatever reason to access learning content easily. These individuals may be full time employed people, parents and disabled individuals. As highlighted in the findings, these people can hybridise various roles all in one due to these disruptive technologies.

Additionally, the implementation of disruptive technologies has, in a short time frame began to mend information silos that existed between HEI departments (Lerman and Sean, 2020). As evidenced by the research findings, HEI departments have begun to communicate effectively and frequently by introducing an integrated feedback system for all academic staff teaching, which includes "pre-session, live-session and post-session feedback." As a result, the research disagrees with Lerman and Sean (2020) perspective.

The study finds that disruptive technologies are not a driver of change in terms of the content that is being delivered by higher education institutions. However, these technologies are significant enablers in the delivery and accessibility that are crucial to higher education institution objectives, particularly in times of the current pandemic. Thus, the study aligns with Christensen, Horn and Johnson (2008) argument of disruptive Innovation the classroom.

The research finds that disruptive technologies are playing a crucial role for higher education particularly in the technical sense- the ability to leverage platforms which enables HEI to continue to deliver its services to its consumers, collaboration/interaction- the ability to foster a new way to collaborate and allow for more interactions to happen within a single online classroom that may not have been possible in a physical classroom and finally changing HEI approach towards teaching/learning.

The recent utilisation of these technologies is also aiding the transition to the 'Guide on the side model' as lecturers focus more on providing practical insight as opposed to disseminating knowledge. Disruptive technologies such as Collaborate that allow the online classroom to be split into smaller rooms foster more interaction with various members of the cohort, thus enabling a more student-centric learning environment. Also, in the case of dissertation supervision, the utilisation of disruptive technologies has enabled students to help one another due to having conferencing sessions with all supervisees under a single supervisor.

The research also looked to forecast on the roles AI, VR and AR will play in the future of HEI (Appendix M-O), and these possibilities could be trailed at the Open University as their current capabilities enable easier integration for these technologies when compared to other HEI. The research found that only Artificial intelligence could enable fundamental utilisation, and this should be the disruptive technology which HEI should focus on utilising. This leads to an interesting question: with even further advancement in technology and global pandemic, how can higher education improve its services to remain competitive, and what would be the new business model for HEI? The study forecasts that the open university model, combined with increased technology utilisation, will become the prevailing model.