International Journal of Innovation and Economic Development
ISSN 1849-7020 (Print)
ISSN 1849-7551 (Online)

URL: https://doi.org/10.18775/ijied.1849-7551-7020.2015.86.2001
DOI: 10.18775/ijied.1849-7551-7020.2015.86.2001

Volume 8
Issue 6
February, 2023
Pages 7-11

Saving the World Through Technology: The Aspect of E-Learning in Education

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Abstract: Introduction and Purpose of the Study - Our present world is characterized by the empowering revolution of technology. The dominance of IT in the 21st century is eminent. Humans are exposed to external threats like the Covid-19 pandemic, which has caused an unprecedented shift to technology. While our developed systems are disturbed in the wake of this crisis, emphasis is placed on reliance on technological power rather than human capacity. This research aims to uncover how major sectors like education are relying on technology to function. E-learning is fighting the odds in a time of distrust and uncertainty. The research strategies used are: 1) a quantitative analysis of affected students (internationally), and 2) a qualitative analysis of papers on the role of technology in education and crisis management. Data has been collected from first-hand survey responses from students and supporting secondary sources. The findings support our given stance on technology's savior role in current times, as a crisis management approach. Evidence proves that the majority of higher educational institutions adopt e-learning methods. There are implications for the quality and means of this approach, which need to be addressed in future stages of advancement.

Keywords: Technology, Education, E-learning, Crisis Management, Covid-19 Pandemic

1. Introduction

As water is to life, technology has become a vital sign for the 21st-century human race. The information technology revolution has changed people's control over life, the way they work, communicate, and progress. Tech is ingrained into our socio-economic and administrative roots now. Organizations have transitioned to technological systems for their routine operations and seek more investments in IT rather than physical assets. Now, in a time of extraordinary risks like the ongoing COVID pandemic, everyone looks to technology as a crisis management tool. Technology is an irreversible trend of our present century. Academia is expected to be highly up-to-date with current trends and practices. Education is the code of life, and with changing times, it needs constant renewal to keep us on the fast track. With the onset of the 21st century, academia faced challenges to integrate digital skills into traditional pedagogies. However, the emergence of COVID-19 has left the academic sector with no option but to adopt e-learning resources. This novel pandemic has changed our education process for an indefinite future. Across the globe, 93 percent of institutions remained shut. Information communication technology is the only route to sustain educational endeavors. Despite the implementation hurdles and newborn platforms, e-learning has taken the market by storm. Our research question here is: how does technology rescue the education market and provide crisis management through the Covid-19 period towards continuation?

2. Literature Review

Prevalence of IT in the 21st Century

Throughout the past, advancements have revolutionized the way we live and present ourselves. Over time, we have transitioned from the mechanical age to the information technology age. The all-encompassing arch of IT dominates every sphere of 21st-century human life. The interaction between technological evolution and economic and societal development has always been an essential aspect of human history. Today, human functionality is unconditionally technology-centric. From smartphones that keep us connected to the jobs we perform, everything is IT-driven. The Organization for Economic Co-operation and Development rightly anticipated an exciting period of technology in the 21st century in the late '90s. Not long after, within the first decade of the 2000s, there was a profound change in political, economic, and social structures that created a new paradigm in the world order. Kumar (2008) has noted technology as an enabler for changing expectations into realities. The prevalence of IT in terms of how technology enables us is undeniable.

1. Greater knowledge
2. Communication
3. Economic stability
4. Industrial-efficiency
5. Globalization
6. Lifestyle changes etc.

Most importantly, IT has enabled greater knowledge, leading to a rise in literacy rates and providing more means for education. With the availability of vast reading material, the literacy rate has increased from 10% to 80% over the past 50 years. Accessible reading also led to the Reformation in Europe. The most notable breakthrough in education is the shrinking size of computers, from room-sized desktops to palm-tops (Pal, 2008). However, the rate of investment in the IT sector by a country or society determines its technological advancement.

Technology in the Time of Crisis

A crisis is an unforeseen risk, such as the emergence of a pandemic, which can result in situations beyond our natural ability to control. Foresight and timely planning can make us ready to embrace challenges if not completely ward them off. Nevertheless, risks can be mitigated by efficient and effective formulation of contingencies. Ironically, the 21st century is a wake-up call to possibilities and unprecedented crises. Today's humans live in a fragmented and multi-actor context, where crisis management demands mechanisms for rapid information sharing (Galaz, 2009). History is a witness to the uncontrolled death toll resulting from brutal pandemics like the outbreak of plagues, cholera, influenza, HIV/AIDS, and now the novel COVID-19. With the advancements in technology, global crisis management has become more coordinated and monitored with internet-based surveillance systems. Currently, the novel coronavirus is the biggest crisis around the globe, reported in 213 countries. What does technology bring us? 21st-century technology has brought wireless communication to the forefront. For each country exposed to COVID-19, technology is a vital sign, already having a tangible impact on community collectivism, political behaviour, and economic sustenance internationally. Nearly all IT-enabled sectors are adapting to minimize physical proximity and create wireless connectivity. The educational sector is hard-hit worldwide, where distant education has cut all physical ties. Nonetheless, it was not gridlocked despite the disaster. Thanks to the timely incorporation of virtual models of education, academia stood its ground in the continuation of teaching-learning activities.

Academia’s Transition to E-Learning

Modern-day education is less dependent on paper and more reliant on technology. Digital libraries have taken away the influx of readers to physical libraries. Storage capacity depends

on cloud space rather than stacking shelves. Learning and teaching practices have become technology-centric. Digital literacy is one of the core competencies of the 21st century, and developed education systems base on it, while developing economies gear towards it (Voogt, Erstad, Dede, and Mishra, 2013). In particular, following the rampant spread of the COVID pandemic, information technology has influenced educational practices. Consequently, we have seen an academic shift, i.e., e-learning. The following figures endorse the transition to e-learning as a rescue strategy of academia in response to crisis management:

- Over 1.2 billion children are out of school in 186 countries (WEF).
- Nationwide closure has globally impacted 70% of the student population, affecting approximately 2 billion learners (UNESCO).
- Zoom is widely noted to be used by 96% of U.S. universities (US News and World Report).
- The EU is coming up with the Digital Education Action Plan in mid-2020 to support online learning (European Union).

Whether residing in their home countries or being stranded in foreign lands, e-learning is the one and only identified way out.

3. Research Methodology

This research is a mixed methods study that incorporates a combination of qualitative and quantitative research elements to address the research problem. The qualitative method allows us to observe a natural phenomenon and produce observations. However, the quantitative approach provides us with statistical data to substantiate our research observations. When qualitative and quantitative methods are used together, they provide more comprehensive findings than the use of a single method alone. Initially, we developed a theoretical understanding of the situation at hand, using secondary records and readily available evidence through prevalent circumstances. Then, first-hand data was collected to support our theoretical statements. Our study focused on both first-hand data from the target population and secondary sources, including academic literature, reports, scientific articles covering global aspects of the pandemic, and the role of technology and trends in the education sector. The methodology also includes a rational reasoning approach that analyzes relevant subject and statistical data, such as COVID-19 reports and publicly available records for the uptrend of technology in education.

4. Data Analysis and Interpretation

This section of the paper aims to synthesize the data into findings that facilitate reading and understanding. The goal is to use this understanding to make decisions or predictions. LeCompte and Schensul (1999) describe the necessary data analysis used by researchers to reduce data to a story and derive insights. The process of data analysis identifies patterns and trends, and therefore validates or rejects our research assumptions.

For example, this study focuses on the use of e-learning resources, i.e., technological means, and in our case, we collected data from a target group within Baku, Azerbaijan. Baku is a multicultural hub that attracts students from over 50 countries worldwide. To collect data, we used a survey form as a tool for gauging responses. A survey of an international dormitory with a sample size of 150 students from 35 distinct nationalities revealed their academic learning activity via e-learning platforms during the COVID-19 lockdown (year 2020-21). The results were highly skewed, as all respondents reported the use of technological devices and applications for knowledge seeking. Clearly, the pandemic has disrupted our traditional classroom learning. Due to significant demand, notable online learning platforms such as Zoom, Coursera, edX, Moodle, etc., are providing open access to their services/courses. Furthermore, education experts maintain that there has already been an increasing trend in

the adoption of education technology. The global e-learning market is projected to reach $350 billion by 2025.

5. Conclusion and Recommendations

Globally, individuals are living in a time of crisis, especially with the impulsive outbreak of a pandemic. We know that if we cannot totally abate it, we can at least manage it. Research and development indicate that 21st-century technology has made us equipped for automation and communication, cutting out on the need for physical presence in many ways. However, with the unfortunate impact of COVID-19, we are all forced to rely on IT. The first quarter of the year 2020 saw an unexpected shutdown of businesses, borders, essential services, and physical spaces. The routine activities that were once normal have now become strange. Technological forces have transformed our communities. Nearly every sector of our socio-economic life is affected, and e-Systems are becoming the new normal.

Educational institutes are among the badly shaken organizations. There is an academic shift from traditional classrooms to virtual study rooms. The higher education sector is using this crisis as an opportunity to integrate more digital tools and best leverage them. In this time of distress, everyone is wondering whether e-learning will remain in focus post-pandemic. For now, technology's saviour role in academic survival is quite evident. This shift is bound to affect the worldwide education market, and investments in education technology remain lucrative, given the surge in its usage. Further studies and investigations in the virtual classroom, student-teacher interaction, digital tools, and education techniques would better help us in adaptability measures, business solutions, and tech-market development.

Acknowledgements

As an author, I am personally grateful to all the international students who took part in the survey and provided their valuable feedback on the digital learning systems and online platforms facilitated by their institutes. I would also like to thank my academic supervisors for their support in making this write-up a success at the International Scientific Conference - ESD, Baku. Special thanks to the editor of the journal for their valuable assistance and support in improving the quality of the paper to its present state.

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