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Education 4.0 and its impact on Business Education

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ABSTRACT

Education 4.0 has become necessary now for that this study reviewed published studies and research on digital teaching and learning since 2020, primarily focusing on how theories, practices and assessments apply to the digital learning environment. The purpose of this paper is to provide practical suggestions for those who are planning to develop digital courses so that they can make informed decisions in the implementation process. Based on the findings, the authors argued that effective digital instruction is dependent upon 1) well-designed course content, motivated interaction between the instructor and learners, well-prepared and fully-supported instructors; 2) creation of a sense of digital learning students; and 3) rapid advancement of technology. In doing this, it is hoped that this will stimulate an on-going discussion of effective strategies that can enhance universities and faculty success in transitioning to teach digital. Under current debates on the cost and quality of higher education, this study could help for the improvement of higher education and student enrollment and retention.

Introduction

Education can become transformative when teachers and students synthesize information across subjects and experiences, critically weigh significantly different perspectives, and incorporate various inquiries. Educators are able to construct such possibilities by fostering critical learning spaces, in which students are encouraged to increase their capacities of analysis, imagination, critical synthesis, creative expression, self-awareness, and intentionality. A byproduct of fostering such new approaches has been the creation of digital courses developed in the worldwide at exponential speed. It is becoming increasingly common at many higher education institutions, offering fully digital and/or hybrid/blended courses combining digital instruction with face-to-face teaching.

At present, fewer studies on digital education have focused on examining previous research and studies, and we have conducted a comprehensive review study trying to

provide a platform of discussions for educators and policy makers on how to develop and delivereffective digital programs. There have been many vigorous debates and thorough studies on the differences between digital and face-to-face classroom teaching, which however is not a focus of this study. Instead, this study"s focus is on examining the positive aspects and strategies of the digital learning and teaching process and how it has been implemented successfully. The goal here is to provide best practices for those who are planning to develop digital courses to make informed decisions in the implementation process. In doing this, it is hoped that this will stimulate an on-going discussion of effective practices that can enhance universities and faculty success in transitioning to teach digital .

With the development of digital education over time, its definition has been evolved. Regarding the aspects of the conversion from face-to-face classrooms to digital , McIsaac and Gunawardena (1996) defined distance education as "no more than a hodgepodge of ideas and practices taken from traditional classroom settings and imposed on learners who just happen to be separated physically from an instructor" (p.5). Regarding the aspects of technology and organization, Moore and Kearsley (2012) defined that "distance education is teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization" (p.2). Regarding the aspects of being distant, Finch and Jacobs (2012) defined it as "all forms of teaching and learning where the student and instructor are separated geographically and temporally" (p.546). It is noted that there is the purported need for conceptualizing distance education in rapidly changing technology and exponentially growing digital education, but its various aspects make it difficult to agree on just one definition and on what constitutes distance education in practice.

Literature Review :

In the research literature, digital education is variously termed as "distance education" "elearning," "digital learning," "blended learning," "computer-based learning," "web-based learning," "virtual learning," "tele-education," "cyber learning," "Internet-based learning," "distributed learning," etc. Considered are all of these terms to be sufficiently synonymous and used them interchangeably.

The best practices of digital education, Finch and Jacobs (2012) stated these advantages: reducing the time and costs for travel; increasing opportunities to access and collaborate with expert professionals in a global range; providing students with flexibility to access courses at their convenience; and allowing adjustments to subjects and content need. The fast development of the Internet and the World Wide Web (WWW) has produced numerous benefits to education. Digital education provides potential opportunities to open up new markets for higher education institutions. Many adult learners may enjoy the flexibility when they have tobalance work, study, and family responsibilities. The wide range of various technology advancement used by universities" digital programs may enhance the interaction between students and instructors, and among students at large (Bell & Fedeman, 2013). The mains, nature of the anonymity in the digital environment may allow more students, who otherwise do not want to attend face-to-face classes because of their shy personality, to participate in digital education where they do not physically see each other. Finally, the upgraded technology and software may allow instructors, students, and university

administrators to collect data, feedback, and evaluation regarding their digital experiences (Bell & Fedeman, 2013).

Influence of technology and evolution of digital course

In digital education, learning is asynchronous or synchronous or a combination of both. Asynchronous learning is teaching and learning that do not happen at the same time (Moore & Kearsley, 2011), while synchronous learning refers to teaching and learning that happen at the same time, both of which are conducted through technologies such as Internet. When digital education began in the late 20th century, most digital programs and classes were synchronousand used chat rooms, instant messaging, and texting. Both chat rooms and instant messaging, being synchronous, allow users to decide who participates in the conversation. n general, students in the United States enroll in universities where digital course formats have been added to already- existing classroom-based courses. At those institutions two modes of digital classes are usually offered – fully digital courses (not taught in bricksand-mortars classrooms), and blended/hybrid courses (a combination of face-to-face and webbased and technology-oriented format). Students in these two modes of digital programs are granted credits, degrees, and certificates when they complete required courses and internships. To increase the accessibility to higher education by larger segments of the public, the model of Massively Open Digital Course (MOOC) wasintroduced in 2008, which includes university based and corporate-based digital offerings. The university-based offering was initiated by Ivy league higher education institutions, including edX in 2012 by Harvard University and the Massachusetts Institute of Technology (MIT), eduMOOC in 2011 by University of Illinois Springfield, Coursera in 2012 by the joint efforts of five universities (Princeton, Stanford, California/Berkeley, Michigan-Ann Arbor, and Pennsylvania), etc. Most of these are open to the public free of charge, which shows the universities" efforts to encourage the public to participate in digital education. Corporate-based digital offerings, free or for-profit, were initiated mostly by organizations, corporations, and individuals. Following his resignation from Stanford University, Sebastian Thrum opened up a for-profit digital initiative called Udacity in 2011. According to its website, it "offers a range of certification options thatare recognized by major technology companies who are actively recruiting from the Udacity student body" (Udacity, 2015). Peer 2 Peer University (P2PU) is an digital -education offering operated by volunteers who teach all courses. As per website < https://www.p2pu.org/en/ >, it is open and free to the public, which "not only helped learners feel confident about taking an digital course, but our retention rates were also higher than in mostdigital learning courses". Initiated by the Saylor Foundation in 2008, Saylor.org is a collection ofcollege-level courses, free and open to the public. According to its website, Saylor.org Academy is founded not just on open educational resources and open source learning technologies, but also on open access to credentials, and ongoing open learning opportunities.

The impacts of the COVID crisis on education 4.0

Despite all the calls for improvements in higher education and lowering the cost, focushas been elsewhere. Washington, of late, has been more preoccupied with "political theater" involving manufactured crises such as the hassle over raising the country"s debt ceiling, the conflict over budgetary sequestrations, the confrontation that led to the government shutdown, and the vigorous battle over the Affordable Care Act. The largest complaint has been the budget cut on higher education. Due to

COVID seemed good to digital education. Found in their survey that about three quarters of the institutions reported enrollment increase in their digital courses and programs following the financial crisis. In the two years following the crisis, they reported, the demand for digital courses exceeded that for face-to-face formats. The reason for such an increase, 1) the lack of good jobs during the COVID caused more people to seek education; 2) due to the competition in workplaces, employed people sought education in order to improve and advance themselves. In 2020, about 6.7 million (32 percent) students took at least one digital course at a higher education institution.

Effective in Digital Teaching i.e.cognitive teaching

In such a process, question remains on how to transfer the inquiry to the resolution. Identified the cognitive tasks as "responding to questions; editing questions and responses; thinking, reasoning, and analyzing information; and helping students to engage in rehearing and retrieving information in the process of delivering digital courses. Based on his digital teaching experience and action research, explained at great length how to integrate facts, concepts, theories, and knowledge into learning and discussions in the development of cognitive presence, with strong emphasis on the importance of the source, clarity, accuracy, and comprehensiveness of knowledge in demonstrating cognitive presence. Nine years later, after introducing the three presences – social presence, cognitive presence, teaching presence – as primary elements for successful digital education, Garrison, Anderson, and Archer (2009) further examined the nature and quality of cognitive presence by analyzing asynchronous text-based computer conference transcripts. Employing the theory of critical thinking, they argued that its outcome can be best judged by practical inquiry that included a triggering event, exploration, integration, and resolution. The triggering event is the first inquiry at which point a problem or an issue is identified for further investigation. The second inquiry is exploration where learners examine, by means of reflection, discourse, issues or problems. The next step is integration, in which learners continue to examine what they have learned from exploration and develop ideas and construct meanings. The final step is resolution where a definite result is determined and the new knowledge is applied. the results of the study have instilled confidence in researchers that higher- order learning in digital -education environment can be accomplished through facilitating cognitive presence .

Pedagogical practice for effective digital teaching

Interviewing 15 digital instructors, all of whom had received South Dakota Board of Regents addressed the importance of setting course goals, learning objectives, and expectations. These awardees shared eight pedagogical practices that they considered to be highly effective in practice: (1) fostering relationships; (2) engagement; (3) timeliness; (4) communications; (5) organization; (6) technology; (7) flexibility;and (8) high expectations. In their view, fostering good relationships and communication between instructors and students was crucial and can be achieved by instructor's empathy for students, passion for teaching, and willingness to help students succeed. Recognizing the very nature of communication in the digital environment, these digital instructors suggested thatdigital instructors be attentive, responsive, and timely in responding to emails and text messages. To do

so, their practical strategies included "giving timely feedback on completed assignments, responding to written questions, communicating requirements, and informing students when theywill be away. These digital instructors also identified the need to engage their students, which can be accomplished by utilizing emails and digital discussion boards, responding promptly to discussion questions, encouraging students to share their backgrounds and work experiences, and conducting meaningful small group projects. To achievethese objectives, they suggested digital instructors be good organizers. In a well-organized coursethey described, students should be given all course materials at the beginning of the class, be provided with direct links to the necessary websites and resources, and be clearly informed about how to navigate the university website to successfully complete the course. They highlighted several strategies that students appreciated most in their digital learning. Another element favored highly by students was strategic instructions. As a common phenomenon, a large number of digital students are non-traditional with full-time jobs and families, who have decided to seek continuing education for personal advancement in their fields.

Interactivity, collaboration, and digital learning students

Many researchers have defined what a learning students looks like in an digital environt and have stressed its importance from different perspectives. Yuan and Kim (2014) stated that a learning students was the creation of a sense of belonging by a group of learners, where learners trusted one another, constructed knowledge, shared useful information, established connections by getting to know one another, set up common objectives for learning, and believed that 169 their needs would be fulfilled. Digital learners benefit greatly from digital learning communities in the following habits: (1) because of their connectivity with one another, they are able to share knowledge and fulfill common goals, which can reduce students" dropout rates; (2) the relationship and interaction between the instructor and learners and among peer learners can increase student performances and their satisfaction and (3) learners can receive supports and help from their peers, and at the same time they can add their knowledge base through their interactive actions provided .

Following guidelines for the development of an digital learning students:
1. The effort to build a learning student should start at the beginning of acourse and continue throughout the term.
2. Both students and instructors should be involved in building the learning students.
3. Asynchronous and synchronous technologies should be both used to create a shared space in which students and instructor interact.
4. Various strategies should be employed to stimulate discussions.
5. Students should be assigned tasks that require collaboration.

Implications from the Study

Throughout the entire review study, we found that one of the primary challenges in digital education is to develop a sense of students in the digital environment. We thus arguethat both learners and instructors have to make a joint effort to get deeply involved in constructing interaction and collaboration between the

instructor and students and among students to create effective digital learning students. Recognizing that student-centered learning is the key in digital education, we were disappointed to note that although many studies emphasized the importance of creating such a learning students, they lacked effective and detailed means, approaches, and technologies that could be used to achieve that objective. This study reviewed the rapid advancement of technology and how it has greatly impacted on digital education. It is almost certain that technology will continue to excel, and it is also almost certain that digital teaching and learning will be greatly influenced by and changed along with it. Substantial evidence exists in our reviews that technology such as the invention of World Wide Web (WWW) and emails are instrumental for the rapid development of digital education. On the other hand, we argue that the standardization and inflexibility of digital products could become barriers to individualize teaching and learning. Although the reviewed studies did provide a variety of approaches on how instructors have adapted and changed their course curricula, designs, and instruction to the digital environment, the individualized teaching and instructions have failed. Our review found that few studies were trying to explore how to progress toward digital instructions that would be more adaptable to individual learners" needs.

Well-designed and effectively delivered digital courses can survive to fulfill the possibility of blending the borders of the classrooms and to connect formal learning to broader space and vast social issues through an energetic digital learning students. In the end, education is about encouraging different ideas, various viewpoints, and a cacophony of voices. A focus should be more on exploring how digital offering could meet individual learners" needs and provide differentiated digital instructions through the course design. Also, more is needed to know about student digital experiences and what motivates students to participate in digital education. In the end, Education 4.0is about students – their learning, their academic outcomes, and much more. More knowledge about the digital process and the people involved will enable digital instructors and institutions to better design their courses, serve students" needs, and position themselves in a competitive global market. Therefore, future studies should be designed to obtain students" perspectives, especially those who are new to computer based learning. In addition, the study may also focus on this regard by levels of students in Education 4.0such as undergraduate and graduate level and by subjects and disciplines. Education 4.0is an alternative for students" learning, which is intended to focus on critical thinking and creation. However, digital courses are commonly dictated by the technology and are designed more for the convenience of the digital system and the technology. Intellectual rigor and the development of informed and individual perspectives, further investigation should explore how to use technology and software to engage students in multiple and ongoing dialogues in a variety of digital formats. Further research is needed to investigate how group designs can impact social interaction and the sense of learning students considering group members" different personalities, learning styles and levels of skill. Previous studies mainly examined postings sent by participants. With the advancement of technology, researchers need to study the roles that a variety of technological tools play in promoting more effective social interaction and growth of a learning students, for example, audio and/or video conferencing via Google Hangout and Skype, social network media, and virtual reality environments.

Conclusion

Digital education is here and is highly likely to stay and grow. The review of its history clearly shows digital education has developed rapidly, fueled by Internet connectivity, advanced technology, and a massive market. It has evolved from century correspondence programs to vibrant and well-designed institutional digital offerings. We can well anticipate that digital education will continue to increase its presence and influence highereducation through a vigorous process of reshaping, refining, and restructuring. It is unlikely, however, to replace traditional higher education but merely to be an alternative. But, owing to itsflexibility, accessibility and affordability, digital education is gaining in popularity, especially forpeople who are otherwise unable to obtain education because of physical distance, schedule conflicts, and unaffordable costs. The digital environment over time, its evolvement, and the technologic impacts on digital education. In digital teaching focused our attention on the relationships between cognitive and teaching presences to determine the best and most desirable practices and strategies for digital pedagogy. Within the realm of digital learning, our attention on the creation of a digital learning students by means of promoting social presence, interactions, and collaboration between the instructor and students.

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