

Virtual Platforms: Assessing the Challenges of E-Learning in Ghana

Completed Research

Natasha Narh

University of Ghana Business School
nnarh001@st.ug.edu.gh

Richard Boateng

University of Ghana Business School
richboateng@ug.edu.gh

Eric Afful-Dadzie

University of Ghana Business School
eafful-dadzie@ug.edu.gh

Acheampong Owusu

University of Ghana Business School
aowusu@ug.edu.gh

Abstract

This paper investigates virtual platforms (VPs) and how they are used for e-learning. It assesses the challenges students face when they use VPs for e-learning from the perspectives of student capacity, institutional perspectives, and external factors, such as the environment or context. Students in Ghana who are engaged in e-learning through external universities outside Ghana were targeted as respondents for this study. It is generally established that different types of computer systems have been adopted by students engaged in e-learning. Two types of computer systems were adopted by the respondents in this study: Open edX and Latitude Learning systems. Three sets of challenges are identified: 1) institutional challenges (ineffective orientation of students by service providers, systems failures, and speaking patterns); 2) student-technological challenges (poor computer skills and self-efficacy, inadequate knowledge and skills in the use of online handles, and poor time management by students); and 3) environmental factors (poor Internet connections, lack of advanced ICT technologies to support e-learning).

Keywords

Virtual Platforms, E-learning, Ghana, Learning Innovations

Introduction

Human activities are becoming increasingly easier in the wake of global technological advancement. Likewise, the rapid development of software and computer tools has generated new teaching and learning spaces (Gamage, Tretiakov, and Crump 2011). Virtual reality (VR) technologies have been applied to many sectors, such as medicine, industry, education, video games, and tourism (Martín-Gutiérrez et al. 2017). For instance, Statista (2019) predicts that revenues from the global VR market will reach \$21.5 billion USD in 2020. Research conducted at Indiana University has shown that the use of virtual platforms (VPs) for teaching and learning has created unique challenges for both Indiana University store owners and the Napier University consumers. It also provides student with a centered and problem-oriented learning environment through which students can experience e-commerce in real time. Choi, Dailey-Hebert, and Estes (2016) highlighted the effect of new tools on the learning outcomes of students in contemporary classrooms. Shen and Eder (2009) also acknowledged the relevance of virtual worlds in enhancing several activities, including teaching and learning. They found that the perceived ease of use of virtual technologies affects users' intentions to adopt virtual technologies due to its perceived usefulness. It was also revealed

that computer self-efficacy and playfulness are significant antecedents to perceived ease of use in virtual worlds.

Research has shown that social engagement among learners and facilitating a learning community are relevant factors for successful learning on VPs, such as e-learning (Shen, Hiltz, and Bieber, 2006). These studies demonstrate the potential for VPs to enhance technology-enabled learning through VPs of which e-business teaching and learning is no exception. Moreover, there is a clear gap in research on VPs, and teaching and learning about these platforms is rare in Ghana. Therefore, it is necessary to identify issues related to teaching e-business through VPs as well as research, practices, and policies that are relevant to e-learning in Ghana. Moreover, researchers claim that VPs and online courses are not considered in the educational process (Amado-Salvatierra et al. 2016). As pointed out by Fowler (2015), the use of VR technologies for creating learning environments holds great promise but also many challenges. Therefore, this paper seeks to explore the challenges that emerge when providing e-learning platforms in Ghana.

The remainder of this paper is presented as follows: Sections 1–3 provide a broad overview of VPs and e-learning through an introduction, review of the virtual platform literature, and a theoretical foundation. Sections 4 and 5 explain the methodology of the research and present the findings, respectively. Finally, Section 6 presents conclusions and Section 7 summarizes the findings and suggests implications for future research, practice, and policy.

Review of Related Literature

Defining VPs and E-learning

This section defines the concepts that are relevant to this study, including VPs and e-learning. These definitions are intended to help the reader understand the research, provide a focus for the discussion, and serve as a guide for discussing the findings presented in this paper.

Virtual Platforms

VR technology can range from bedside learning to computerized tools that are accessed exclusively online (Duff, Miller, and Bruce 2016). A number of studies have considered VR environments from educational and business points of view (Fowler 2015; Huang et al. 2013; Schaffer 2017). VR can be described as a software-based system through which a target activity is facilitated using a chip and or board as a medium. Classroom activities can be communicated through the virtual platform software-based systems. Therefore, e-learning facilitates communication, sharing of information, and dissemination of knowledge, as well as interaction and communication between people in different locations. However, VR is dependent on technology. Leupers et al. (2012) define VPs as a technology-supported system that is developed to address the needs of society through information communication technology (ICT). Thus, it is a system-based technology that allows access to information and services while facilitating interactions between people. The authors further posit that VPs remain an extremely interesting and quickly developing topic in terms of both academic research and new business directions. However, researchers must address fundamental technical issues, such as speed, abstraction, parallelization, reuse, and interoperability.

E-learning

VPs allow users to access desired services and information from anywhere in the world. Kishimoto et al. (2009) posit that VPs involves network, data, and application services. A study conducted by Benta and Bologa (2014) revealed the importance of using e-learning platforms in higher education. Their research showed that the benefits of VPs for e-learning include: user choice, access to personalized services that are delivered electronically, increased market reach, and enhanced efficiency. Other researchers have also established that e-learning provides the flexibility and convenience of learning without having to travel

(Zhang et al. 2006). This suggest that e-learning affords people convenient options of study, as well as a cost-effective learning opportunity for people who could not otherwise afford higher education (Zhang et al. 2006). In line with these findings, Algahtani (2011) finds that the potential benefits of e-learning are much greater than traditional learning, as long as e-learning is conducted properly and efficiently. Closely related is a study by Brown et al. (2008), which shows that teachers who instruct on e-learning platforms adopt various teaching methods to address the needs of different types of students. E-learning provides flexibility in terms of time and location, while allowing students to interact with other students and eliminate barriers to participation, such as fear of talking in front of the class (Smedley 2010; and Wagner et al. 2008). Therefore, e-learning has several benefits that should encourage universities and institutions of higher learning to adopt virtual platforms (Arkorful and Abaidoo 2014). It was noted that VPs have provided more options for innovative academic teaching and learning over the past two decades (Leupers et al. 2012).

However, learning centers and institutions that adopt advanced technology for e-learning require students to have efficient and effective ICT skills in order to take advantage of these benefits (Judahil et al. 2007). Several barriers are associated with e-learning using the VPs, such as the cost of developing frameworks to promote efficient e-learning. Bagarukayo and Kalema (2015) found that e-learning usage and adoption varied between universities. Their study specifically revealed a number of factors that hinder the adoption and delivery of e-learning in South Africa, including training and support for ICT, content-creation skills, policy, cost, technological barriers, giving access to diverse populations, large class sizes, infrastructure and technical issues, instructor motivation, and job security. Isabirye and Dlodlo (2014) also found the following challenges: lack of institutional support, non-integration of elearning business strategy, lack of e-learning culture, exclusion of academics from e-learning development programs, instructor attitudes, technological challenges, lack of pedagogical strategies, cost, quality, lack of policies, lack of training, lack of motivation, lack of incentives to participate; under-preparedness, unsupportive work environment, logistical issues, lack of management, and lack of ICT support.

There are also challenges related to legal issues and the privacy of those who use VPs. Moreover, the technologies available in many parts of the world are almost obsolete and unable to support effective and efficient e-learning activities (Mitchell 2003). A study conducted by Shen and Eder (2009) revealed some challenges and constraints related to the use of VPs for e-learning. The study found that poor network speed is a challenge for e-learning. As a results of weak Internet networks, the students faced difficulties with connecting to VPs, while others tried and failed to connect using wireless network facilities. Others faced difficulties creating and accessing their study accounts even when they succeeded in connecting to the Internet. VPs for learning require very high Internet speeds to support access to virtual classrooms. Computer self-efficacy is also required to ensure that teachers and students can use the VPs to teach and engage in e-learning activities. A study by Shen and Eder (2009) also shows that significant numbers of people encounter challenges when using VPs, especially for e-learning and e-business, because they have inadequate skills and lack the skills to engage meaningfully within online communities.

Theoretical and Conceptual Framework

This section presents the theoretical and conceptual framework upon which the analysis is hinged. Several theories could be adopted to explain reality. After conducting a thorough literature review, the researcher identified technological, organizational, and environmental factors (Table 1); therefore, the technical, organizational and environmental (TOE) framework was selected as the best fit for this study. This framework, which was developed by Tornatzky and Fleischer (1990), assumes that the process by which a firm adopts and implements technological innovations is influenced by technological, organizational, and environmental factors.

Construct	Individual factors	References
Technical challenge	Speed Interoperability Lack of framework Hardware Software Security Connectivity problems	Alali & Xanthidis 2014; Bagarukayo and Kalema 2015; Dillon, Wu, and Chang 2010; Ibrahim, Hamlyn-Harris, and Grundy 2016; Leupers et al. 2012)
Organizational challenges	Institutional Administrative implementation Financial Time-management	Alali and Xanthidis 2014; Bagarukayo and Kalema 2015
Environmental challenges	Stakeholder involvement Participation Culture	Islam, Beer, and Slack 2015; Kebaetse, Nkomazana, and Haverkamp, 2014

Table 1. Technological, organizational, and environmental factors.

Technology

The technological context describes the internal and external technologies that are relevant to the firm. Therefore, it includes existing technologies inside the firm, as well as the pool of available technologies in the market (Zhu et al. 2004; Picoto, Bélanger, and Palma-dos-Reis 2014). The technological and infrastructural challenges (Alali and Xanthidis 2014; Bagarukayo and Kalema 2015; Dillon et al. 2010; Ibrahim et al. 2016; Leupers et al. 2012) can be broken down into speed interoperability, lack of framework, hardware, software, and connectivity problems.

Organization

Previous studies have examined the organizational factors that affect the size and scope of a firm (Gibbs and Kraemer 2004; Zhu et al. 2002; Racherla and Hu 2008), managerial structures (Pan and Jang 2008), and amount of extra resources available (Baker 2012; Zhu et al. 2002). However, the literature review revealed additional organizational factors that affect e-learning and VPs, including institutional and administrative challenges (Alali and Xanthidis 2014; Bagarukayo and Kalema 2015), implementation challenges, financial challenges, and time management challenges (Islam et al. 2015; Kebaetse et al. 2014).

Environment

The environmental context includes the size and structure of the industry, the firm's competitors, the macroeconomic context, and the regulatory environment (Tornatzky and Fleisher 1990; Iacovou, Benbasat, and Dexter 1995; Zhu et al. 2002). Previous studies on environmental factors have looked at competitive pressure, the regulatory environment, and consumer readiness (Scott 2007; Zhu et al. 2004; Gibbs and Kraemer, 2004). Additional factors that relate to e-learning and VPs include stakeholder involvement, stakeholder participation (Kebaetse et al. 2014) and cultural influences (Islam et al. 2015).

Based on the above discussion, a Conceptual framework for e-learning and VPs, to be used in this study is outlined in Figure 1.

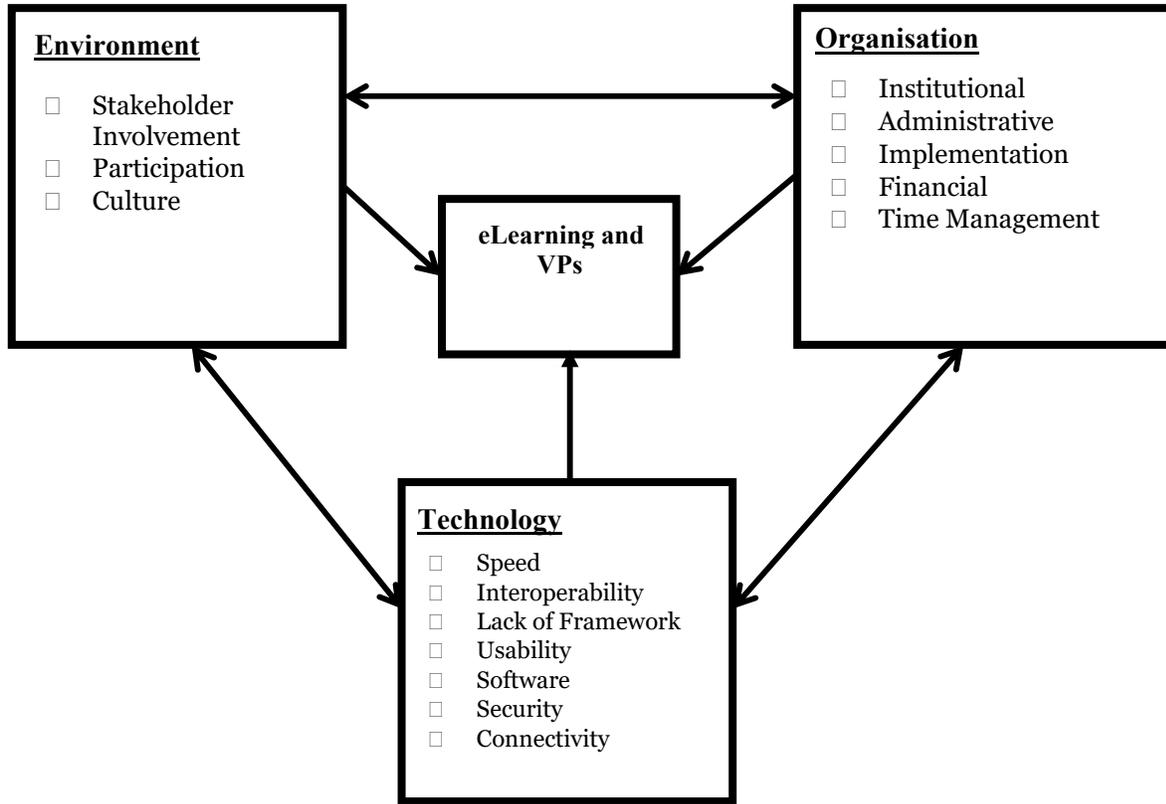


Figure 1 Conceptual Framework for e-learning and VPs

Source: Tornatzky and Fleischer (1990) and factors identified in the literature.

Study Methodology

Critical realism is a stream of research and philosophy that suggests society would exist without our knowledge or experiences of it. This philosophy is increasingly accepted as an alternative option to interpretive and positivist paradigms because it leverages the benefits and weaknesses of these two theories, making it the best alternative theory to study social sciences (Bhaskar 1978).

This study also employed the quantitative method of study. The main methods used in this study were: Internet searches and interviews with people who have engaged in e-learning programs or are still learning through e-learning platforms, including those living abroad and in Ghana. The aim was to identify the challenges and limitations associated with delivering e-learning in Ghana. The sample size was 40 students engaged in online learning through VPs. A semi-structured questionnaire was also used as a qualitative component to this study. Sampling of the questionnaire relied on snowballing to identify and generate information from 40 respondents.

Data-Collection Methods

A quantitative data-collection method was used in this study in order to identify people in Ghana who were engaged in e-learning courses, as well as those who had past experience with e-learning through a VP. Forty respondents from these two categories were identified and interviewed.

Data Analysis and Results

The data were analyzed using IBM SPSS 21 computer software. The analysis relied on descriptive statistics, such as tables, percentages, and frequencies, coupled with qualitative descriptions of the results and findings in this study. The following sections present the results of this study, which cover demographic characteristics, use of VPs for e-learning, challenges associated with the use of VPs for e-learning, and implications for policy and research.

Findings

Forty valid responses were gathered during this study. Out of these respondents, 60% (24) were male and 40% (16) were female. Furthermore, 75% (30) were within the ages of 25–35 years, 10% (4) were between the ages of 36–46 years, and 15% (6) people were between the ages of 47–57 years. With regards to ICT skills, 40% (16) possessed above-average computer skills, 40% (16) had average skills, and 40% (16) had lower-than-average skills. The results for Internet familiarity and use of internet VPs showed that 80% (32) of respondents had difficulties with using the internet efficiently.

The respondents were asked what types of online systems they used to access the VPs for their e-learning courses. Table 1 presents the results.

Types of virtual systems	Frequency	Percentages (%)
Cross Knowledge Learning Suite	0	-
Open edX	26	65%
Adobe Captivate Prime	0	-
Latitude Learning	8	20%
G-Cube LMS	0	-
Can't remember	6	15%
I don't know	0	-
Total	40	100%

Table 1. Usage of VPs.

The results of this study show that 65% of respondents identified Open edX as the system used in their e-learning programs. Another 20% identified Latitude Learning, and 15% said they could not remember the type of system they used. Therefore, different types of computerized technological systems are adopted by e-learning service providers. This study also sought to establish the various activities were undertaken required to access the technological systems in the VPs. It was established that students were required to create an account with their identity code and password.

Activities Involved in the use of VPs in E-learning: The responses vary when the respondents were asked about whether they were familiar with using the internet and how regularly they used the internet. Sixty percent of respondents said they were not very familiar with the online system used for their e-learning course. They received little training on how to use their student accounts and engage with their classmates. The remaining 40% said they were quite familiar with the online system.

Institutional Challenges: Organizational factors, according to literature on the TOE framework, influences e-learning and virtual platforms. This section of the study presents the results related to institutional challenges that affect the use of the VPs for e-business learning and activities. The respondents were asked to identify various challenges they felt were institutionally oriented and that constrained their effective use of the VPs during their e-business activities. In other words, these challenges were attributed to the educational institutions and were beyond the control of the users. Table 2 presents the results.

Types of challenges	Frequency	Percentages
Ineffective orientation	12	30%
Systems failures	36	90%
Speaking pattern of the teacher	22	55%

Table 2. Institutional Challenges.

Table 2 shows that 90% (36) of respondents identified systems failure prevented them from using the VPs for e-business learning. Another 30% (12) said ineffective orientation inhibited their ability to familiarize themselves with the online systems, and 55% (22) said the speaking pattern of the teacher made it difficult to understand the subject matter. Therefore, systems failures, ineffective orientation, and the speaking pattern of the teacher affected the respondents' use of the VPs for teaching and learning e-business.

Student-Related Challenges: Technological factors that influence e-learning and virtual platforms was described to include usability and Interoperability. This set of challenges identified by the respondents were personal in nature. This category of challenges is associated with the capacities of the student using the VPs for e-business teaching and learning. Table 3 presents the results.

Types of challenges	Frequency	Percentages
Poor computer skills	28	70%
Inadequate knowledge of Internet handles	26	65%
Lack of time management skills	31	77.5%

Table 3. Student-related challenges with VPs.

Table 3 shows that 70% (28) of respondents identified poor computer skills as a factor that constrained their efficient use of VPs for e-learning. Another 65% (26) said weak knowledge of internet handles was a factor that hampered their efficient use of the VPs. Finally, 77.5% (31) identified poor time management as a challenge when using VPs for e-business learning. Therefore, poor computer skills, weak knowledge of Internet handles, and lack of time management were factors that constrained students' efficient use of the VPs for e-business learning.

Environmental Challenges: Finally, the respondents were asked to identify other factors that affected their efficient use of the VPs but were not personal in nature or attributable to the educational institution. Table 4 presents the results.

Types of challenges	Frequency	Percentages
Poor Internet speeds in Ghana	40	100%
Lack of advanced ICT technologies to support e-learning	36	90%
Time change difficulties	16	40%

Table 4. External factors. Source: Field data, 2019.

Table 4 shows the external factors identified by the respondents. One hundred percent (40) of the respondents noted poor internet speeds in Ghana as an inhibiting factor, and another 90% (36) identified lack of advanced ICT technologies to support e-learning activities. Meanwhile, 40% (16) indicated time change difficulties as a factor that hindered their efficient use of the VPs for e-business teaching and learning in Ghana.

Discussion

This section discusses the results of this study in order to draw conclusions, inform public policy, and provide directions for future research. This study established that 65% of respondents used the Open edX VP system, 20% used the Latitude Learning system, and 15% could not remember what type of system they used for their e-learning studies. Shen and Eder (2009) have acknowledged the relevance of virtual worlds for enhancing teaching and learning, and Fowler (2015) has also emphasized the importance of virtual communities in teaching and learning. The results of this study suggest that deliberate actions are required to create opportunities to adopt e-learning as a means to boost human resource capacity of universities in Ghana.

The results of this study also established the types of challenges that affect students' efficient use of VPs. The institutions that provide e-learning services were blamed for some of these challenges, including ineffective orientation on the use of the e-learning facilities (30%), systems failures (90%), and pattern of communication by the instructors (55%). According to Bagarukayo and Kalema (2015), institutional challenges also hinder the effectiveness of e-learning. This study showed general inadequacies of the teaching and learning institutions to train students on how to use the VPs. It is likely that the teachers realized that there were different types of online systems used for e-learning, which could explain the assumption that students would understand how to use the systems. Finally, the speaking pattern of the teacher and systems failures should be monitored to avoid adverse effects on the students.

This study also revealed that 70% of the respondents had poor computer skills and self-efficacy, while 65% had inadequate knowledge of internet handles, and another 77.5% lacked time management skills.

These results align with previous studies by Judahil et al. (2007) who found that students must possess certain levels computer and ICT skills to be able to engage in e-learning, and they must have self-discipline to be effective students in an e-learning environment.

Finally, this study presented results on external challenges that are beyond the control of the students and the service provider. All of the respondents (100%) indicated that poor internet speeds in Ghana were responsible for their effective use of e-learning. This aligns with studies by Shen and Eder (2009), which show that poor network connectivity has a negative effect on e-learning. Poor internet speeds are a major challenge in Ghana, which likely explains why some institutions of higher learning have not adopted e-learning strategies. This problem should be addressed at the national level. Furthermore, 90% of the respondents demonstrated that the level of technological development in Ghana is still inadequate to support effective e-learning. This suggests that Ghana has much work to do when it comes to adopting advanced technologies that can facilitate e-learning. Consistent with these findings is the report by the

International Telecommunication Authority (ITU,2016), noting that internet penetration in Ghana is only 28.4%. This highlighted gap in infrastructural inequality is evident in this study with 90% of respondents attesting to the negative effect of system failures on their educational experience. There is reasonable evidence to suggest that efforts are being made to improve and better facilitate e-learning in Ghana. For instance, University of Ghana was operating on a bandwidth of 10mbps in 2010. This was increased to 310mbps in 2013 and further increased to 1000mbps in 2018 by Vodafone (UG, 2018).

Conclusion

This study aimed to address challenges that limit the efficient use of VPs as means of teaching and learning. The study focused on students in Ghana who were engaged in e-learning through universities outside Ghana. It has been established that six types of computer systems exist for e-learning, and two of these were adopted by the respondents in this study: Open edX and Latitude Learning. Three categories of challenges are associated with these systems are: 1) institutional (ineffective orientation for students, systems failures, and teachers' speaking patterns), 2) personal (poor computer skills, inadequate knowledge of Internet handles, and lack of time management skills), and 3) external (poor Internet speeds, lack of advanced technologies to support e-learning, and time differences). Efficient Modern and up-to-date ICT is required for efficient development and transition to learning through VPs.

This study also revealed that the respondents lacked the capacity to use computers efficiently. From the discussions, it can be summed that some strategies need to be in place to ensure the success of e-learning on virtual platforms in Ghana. These should include, but not limited to, the provision of a well-structured and effective orientation program before embarking on the e-learning journey. A prerequisite computer literacy class to equip students or exams to assess computer literacy prior to course commencement. These strategies are not exhaustive and further research is needed to ascertain the strategies needed to sustain or facilitate continuous usage and advancement in the use of virtual platforms for e-learning in Ghana.

References

- Alali, A. S., and Xanthidis, D. 2014. "An exploratory study of eLearning challenges and opportunities in the GCC," *Computer Applications & Research (WSCAR), 2014 World Symposium* pp. 1–6. IEEE.
- Amado-Salvatierra, H. R., Hilera, J. R., Tortosa, S. O., Rizzardini, R. H., and Piedra, N. 2016. "Towards a Semantic Definition of a Framework to Implement Accessible e-Learning Projects," *J. UCS* (22:7), pp. 921–942.
- Bagarukayo, E., and Kalema, B. 2015. "Evaluation of elearning usage in South African universities: A critical review," *International Journal of Education and Development Using ICT*, (11:2), pp. 168–183.
- Bhaskar, R. 1978. *A Realist Theory of Science*, Brighton.
- Choi, D. H., Dailey-Hebert, A., and Estes, J. S. 2016. *Emerging tools and applications of virtual reality in education*. Information Science Reference.
- Campus News, N. 2018. UGCS soon to allocate data bandwidth to students - Radio Univers 105.7FM. Retrieved April 22, 2019, from <https://www.universnewsroom.com/news/ugcs-soon-to-allocate-data-bandwidth-to-students/>
- Dillon, T., Wu, C., and Chang, E. 2010. "Cloud computing: issues and challenges," *Advanced Information Networking and Applications (AINA), 2010 24th IEEE International Conference on*, pp. 27–33. IEEE.
- Duff, E., Miller, L., and Bruce, J. 2016. "Online virtual simulation and diagnostic reasoning: A scoping review," *Clinical Simulation in Nursing*, (12:9), pp. 377–384.

- Fowler, C. 2015. "Virtual reality and learning: Where is the pedagogy?" *British Journal of Educational Technology*, (46:2), pp. 412–422.
- Gamage, V., Tretiakov, A., and Crump, B. 2011. "Teacher perceptions of learning affordances of multi-user virtual environments," *Computers & Education*, (57:4), pp. 2406–2413.
- Huang, Y-C., Backman, S. J., Backman, K. F., and Moore, D. 2013. "Exploring user acceptance of 3D virtual worlds in travel and tourism marketing," *Tourism Management* (36), pp. 490– 501.
- Ibrahim, A. S., Hamlyn-Harris, J., and Grundy, J. 2016. "Emerging security challenges of cloud virtual infrastructure," *ArXiv Preprint ArXiv:1612.09059*.
- International Telecommunications Authority (2016). *Internet Users by Country (2016) - Internet Live Stats*. www.InternetLiveStats.com. Retrieved April 22, 2019, from <http://www.internetlivestats.com/internet-users-by-country/>
- Islam, N., Beer, M., and Slack, F. 2015. "E-learning challenges faced by academics in higher education," *Journal of Education and Training Studies*, (3:5), pp. 102–112.
- Kebaetse, M. B., Nkomazana, O., and Haverkamp, C. 2014. "Integrating eLearning to Support Medical Education at the New University of Botswana School of Medicine," *Electronic Journal of E-Learning*, (12:1), pp. 43–51.
- Leupers, R., Martin, G., Plyaskin, R., Herkersdorf, A., Schirrmeister, F., Kogel, T., and Vaupel, M. 2012. VPs: Breaking new grounds. In *Design, Automation & Test in Europe Conference & Exhibition (DATE), 2012* pp. 685–690. IEEE.
- Martín-Gutiérrez, J., Mora, C. E., Añorbe-Díaz, B., and González-Marrero, A. 2017). Virtual technologies trends in education. *EURASIA Journal of Mathematics Science and Technology Education*, (13:2), pp. 469–486.
- Schaffer, V. 2017. Enhancing learning to diverse cohorts via immersive visualization. *Journal of Hospitality, Leisure, Sport & Tourism Education* (21), pp. 46–54.
- Shen, J., Hiltz, S. R., and Bieber, M. 2006. "Collaborative online examinations: Impacts on interaction, learning, and student satisfaction," *IEEE Transactions on Systems, Man, and Cybernetics-Part A: Systems and Humans*, (36:6), pp. 1045–1053.
- Statista. 2019. Virtual Reality (VR) - Statistics & Facts. Retrieved April 22, 2019, from <https://www.statista.com/topics/2532/virtual-reality-vr/>
- Tornatzky, L. G., Fleischer, M., and Chakrabarti, A. K. 1990. "The processes of technological innovation. Issues in organization and management series," *Lexington Books*. Retrieved from <http://www.Amazon.Com/Processes-Technological-Innovation-Organization/Management/Dp/0669203483>. Accessed June, 10, 2013.