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POST-COVID 19 TRAINING: USERS PERCEPTION ON THE EFFECTIVENESS OF VIRTUAL LEARNING ENVIRONMENTS FOR SKILL ACQUISITION

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Abstract

The Coronavirus Disease (COVID-19) is an infectious disease which originated from Wuhan, China in December of 2019 which quickly spread across the world rapidly through the movement of people and goods at an exponential and alarming rate infecting and killing millions. In Nigeria and across the world steps were taken to suppress and control the spread of the Covid-19 including closing of schools, universities, training institutions, event centres, markets and other places of public gatherings. While closing education institutions were important in mitigating the spread of COVID-19, prolonged closures negatively impact learners of all categories and disproportionately affected all forms of learning and trainings. This situation therefore called for creating opportunities for learner to learn and acquire skills virtually. The adoptions of Virtual Learning Environments (VLE) and platforms as became the order of the day. Virtual learning environments are web based platforms for digital solution aimed at creating interactive and an active learning environments. VLEs help create, store and disseminate course content, lessons and foster communication between learners and teachers. They play an essential role by providing users with learning flexibility and unprecedented opportunities to co-create information. VLE platforms such as Microsoft Teams, Zoom, Webinars, Google Classroom, Moodle etc. allows students to study at their own pace and automatically tracking their progress as they collaborate and learn. The use of online and virtual learning platforms is here to stay but this reality is threatened by the perception of end users which always determine the effective of such platform for skill acquisition. This can be linked to the fear of unknown future, lack of technical abilities to use this platforms, comfort in the traditional in person or face to face mode of learning, lack of adequate infrastructure such as internet facilities, smartphones and devices. The main purpose of this study is to investigate the Post-Covid 19 Training: Users Perception on the Effectiveness of Virtual Learning Environments for Skill Acquisition.

Key words: VLE, User perception, skill acquisition

1. Introduction

The Coronavirus Disease (COVID-19) is an infectious disease which originated from Wuhan, China in December 2019. Initially, the perception of medical personnel and the World Health Organisation was that the newly discovered disease would be localized and contained in China. The Federal Ministry of Health confirmed a coronavirus disease (COVID-19) case in Ogun State, Nigeria. The case, which was confirmed on the 27th of February 2020. This discovery led to steps taken to suppress and control the spread of the

Coronavirus in Nigeria, including closing of schools, universities, training institutions, event centres, markets and other places of public gatherings. While closing education institutions are important in mitigating the spread of COVID-19, prolonged closures negatively impact learners of all categories and disproportionately affected all forms of learning and trainings. This situation therefore called for creating opportunities for learning from home for millions of people whose education had been affected.

Ever since the outbreak of COVID-19, Nigerian education has not remained the same. Different stakeholders in the Nigerian education sector have invested their idea in ensuring compliance with the paradigm shift brought about by the new normal. However, the mode of ICT infrastructures and other amenities in almost all the states in Nigeria that can support virtual academic activities is in hibernation, and this is the only appropriate method for replacing the lost traditional method of teaching and learning processes (Olubunmo, Bello & Noah, 2022). Similarly, most educational institutions in Nigeria especially the private institutions at higher level adopted the paradigm shift by starting online teaching/learning which by and large becomes too difficult for them to sustain. Some of the difficulties are attributed to frustration in accessing and using the variety of online learning platforms by students; this negatively affected the quality of online learning. Trainings, workshops and academic conferences followed this shift as they also moved online due to the restrictions of movement and gatherings. The adoptions of Virtual Learning Environments (VLE) and platforms as become the order of the day.

The VLE has emerged as a successful, viable learning management platform for teaching and learning in the 21st century. Ferriman (2019) defined VLE as a flexible, effective, and inspiring way to deliver learning content that best suits the needs of students. VLEs have also introduced an 'anytime and anywhere' alternative to learning and delivery of content (Saykili, 2019; Shahabadi & Uplane, 2014), provided that the students have the Internet accessibility (Saykili, 2019). Also, VLEs play an essential role by providing users with learning flexibility and unprecedented opportunities to co-create information. Such a platform allows students to study at their own pace (Gunawan, Kalensun & Fajar, 2018), automatically tracking their progress as they collaborate (Barco, 2018). It offers many advantages for people who are willing to further their studies and acquire additional professional skills but are constrained by time, location and infrastructural needs.

In Nigeria, specific problems regarding e-Learning and the use of VLE generally include the following: lack of technology integration into practice, lack or involvement of highly trained personnel to handle aspects of e-Learning, lack of adequate management and financial input, and curriculum mapping i.e. breaking curriculum and courses into manageable chunks to suit specific e-learning requirements (Rhema & Miliszewska, 2010), (Abubakar, 2014). This is in addition to lack of infrastructure, and organisational involvement. It is not uncommon for Nigerians to use VLE in their studies but these factors appear to present serious challenges. For example, where there is no steady supply of electricity, computer connected network and internet, and lack of collaboration amongst the organisations, the use of the learning platforms can only be a wishful thinking for users. These inadequacies appear to negate appropriate use of VLE platform for mediating and supporting teaching and learning in tertiary institutions particularly in Nigeria. While the field of education has seen the use of digital virtual worlds for several years (Livingstone, Kemp & Edgar, 2008), increased advances in capabilities of educational technology has resulted in massive use of multi-users virtual worlds: this has fed interests in educational application and the use of Virtual Learning Environments (VLEs). Besides, VLE has enabled educational world to sell their

products online thus, public and private sector education view students as consumers (Gomes & Murphy, 2003). Although, virtual learning has the potentials to offer good and distance education comparable to physical classroom situation in the developed environment, some parts of the developing world appear to struggle in harnessing and accessing these potentials to meet the needs of e-learning subscribers in this turbo-charged digital race. Essentially, several frameworks and models have been adopted by stakeholders towards implementing eLearning through the use of computers, technologies and internet. Abdad, Morris, and De Nahlikalso (2009) defined E-learning as any learning that is electronically enabled. Thus, e-learning simply is the use of multimedia, information and communication technologies to extend diverse processes of education to support and enhance teaching and learning in higher institutions across the globe (OECD, 2005). Recent studies suggest that VLE is perceived positively by students and that it has a positive effect on their educational experience (Al-Kathiri, 2014; Bicen, 2014; Al-Said, 2015; Al-Ruheili and Al-Saidi, 2015; Dayag, 2018). VLE fosters interaction and collaboration among students (Kear, 2007; Dayag, 2018) as it offers a number of communication tools that facilitate effective communication and collaboration among the primary stakeholders students and educators alike of the academe (Weller, 2007; Warner, 2013; Al-Kathiri, 2014). In several settings, VLE is perceived to have a positive impact on students' communication, collaboration and participation in the classroom (Mimirinis & Bhattacharya, 2007; Balasubramanian, Jaykumar & Fukey, 2014; Al-Ruheili & Al-Saidi, 2015, Al-Kathiri, 2014, Al-Said, 2015). In the context of EFL, recent studies suggest that VLE is perceived by students as a helpful tool that offers a safe learning environment that allows them to deepen their knowledge and enhance their communication skills beyond the confines of their classrooms (Al-Kathiri, 2014; Bicen, 2014; Al-Said, 2015; Al-Ruheili and Al-Saidi, 2015). VLE is also deemed useful to students in terms of providing timely opportunities for learning and providing supplementary instructional materials that enrich students' learning experiences (Bataineh & Mayyas, 2017; Dayag, 2018).

Gender differences have been reported in the sense of men being more prone to use computers and new media (Dorman, 1998; Kayany and Yelsma, 2000; Adamus et al., 2009) as well as in the way women and men evaluate technology and make use of it (Venkatesh and Morris, 2000; Adamus et al., 2009). Women consider computers as social media and they are more involved than men in communicative activities. Regarding gender differences in e-learning, there has been little empirical evidence so far for the existence and the effects of these, and the few studies that exist are often contradictory. While one position argues that there are gender specific behavior patterns that may lead to a discrimination of women using e-learning (e.g. McSporran and Young, 2001; Astleitner and Steinberg, 2005), others argue that e-learning, through its flexible and interactive learning approach favors particularly women (e.g. Bruestle et al., 2009). Notwithstanding, neither gender roles nor technology can be seen as stable categories (Bruestle et al., 2009). There is evidence supporting that men and women express varying degrees of anxiety, acceptance, and interest in new technologies across time (McCoy and Heafner, 2004) and the gender gap is narrowing over time (Shaw and Gant, 2002). Among the factors that contribute to reduce the gender gap it has been pointed out access and training

Training is a learning process of knowledge acquisition, sharpening of attitudes and skills that result from the teaching of practical skills and knowledge which relate to specific useful competencies and rules (Olele & Uche, 2011). There is no doubt that training primarily focuses on helping teachers acquire the knowledge and skills they need to develop as effective performers. Development focuses on building the knowledge

and skills and takes the form of learning activities that prepare people to take on new responsibilities and challenges (Jones & George, 2003; Armstrong, 2009). However, before creating training or development programs in a work environment, there should be a thorough needs assessment to determine who needs training or development and what type of skills or knowledge they need to acquire (Lee & Owens, 2004) Although both classroom instructions and on-the-job training can be used for development processes as well as training, development often includes additional activities such as varied work experiences and formal education. Varied work experiences such as secondment and short sabbaticals are most powerful sources of career development as they tend to broaden teachers' horizons and help them think more about globalization, with which they will develop understanding of human values, global issues/problems, cultures, and ways of teaching in different countries (Pollard, Anderson, Maddock, Swaffield, Warin & Warwick, 2008). Professional development can be facilitated by attending workshops, seminars or academic conferences which pertains to the individual subject orientation of teachers or a generic knowledge been passed across to him/her. The post covid-19 pandemic realities as brought in a new frontier to skill acquisition of teachers and academic staffs. Online and virtual learning platforms are at the fore front of this paradigm shift in skill acquisition which has been facilitated by economic realities of participants, organisers or sponsors, slow nature of returning to normal after long restrictions of movement, popularity and ease of use of virtual learning platforms and the security situation of the country. The use of online and virtual learning platforms is here to stay but this reality is threatened by the perception of end users which will determine the effective of such platform for skill acquisition. This can be linked to the fear of unknown future, lack of technical abilities to use this platforms, comfort in the traditional in person or face to face mode of learning, lack of adequate infrastructure such as internet facilities, smartphones and devices.

2.1 Purpose of the Study

1. Identify the gender perception on the effectiveness of VLE for skill acquisition.
2. Justify the degree of users' perception on effectiveness of Virtual Learning Environment for skill acquisition.
3. Assess the possible challenges faced using Virtual learning environment for skill acquisition.

2.2 Research Questions

The following research questions were raised from the study below:

1. To what extent is users' perception on effectiveness of Virtual Learning Environment for skill acquisition?
2. What is the gender perception on the effectiveness of VLE for skill acquisition?
3. What are the challenges faced using Virtual learning environment for skill acquisition?

2.3 Research Hypothesis

H01: There is no significant difference in the effectiveness of VLE for skill acquisition by gender.

3. Methodology

The study advanced for the use of descriptive research design. This research design type is suitable because it helps to gather, organize, analyze and present data for the purpose of describing the occurrence of an event within the group of people. The population for this study was comprised of all academic staff in Lagos State University of Education, LAUSED, Lagos State. A simple random sampling technique was adopted to select 100 respondents from the population. Academics selected across the seven colleges in the university. The researchers adopted the use of a self-structured Questionnaire on 4-Likert scale format to elicit responses from the respondents. A sample of three copies was given to three lecturers in the department of educational technology from the institution to determine the validity of the instrument. Moreso, after removal and modification of items in the instrument, construct and content validity was met. To determine the reliability of the instrument, the use of Cronbach Alpha, a form of reliability type, an index value of 0.864 was obtained meaning that the items in the instrument is very reliable and suitable for the study. Descriptive statistic tools such as mean and standard deviation was used to answer the research questions while T-Test was used to analyse the data sourced and tested at 0.05 level of significance.

4 Results

Research question 1: To what extent is users' perception on effectiveness of Virtual Learning Environment for skill acquisition? This shows what the perception of users are in regards to the effectiveness of virtual learning environment for skills acquisition.

Table 1:

ITEMS	Agree (%)	Disagree (%)
Participating in virtual training are as Effectiveness as in person training	72	28
Virtual learning Environments are effective skill acquisition platforms	89	11
Individualised nature of VLE platforms makes acquisition of skills difficult	52	48
The way at which contents are set up encourages me to learn independently	78	22
Online training are as effective as in person training	64	36%
The opportunity to learn using VLE at any place, time and pace to suit myself encourages independent learning	85	15

Table 1 above show the perception of users on the effectiveness of VLE for skills acquisition. 89% of the respondents agreed that VLE are effective skills acquisition platforms while 11% disagreed, 78% agreed that way at which contents are set up encourages them to learn independently while 22% disagreed, 85% of respondents agreed that the opportunity to learn using VLE at any place, time and pace to suit myself encourages independent learning while 15% disagreed, 72% of respondents agreed that participating in virtual training are as Effectiveness as in person training while 28% disagreed. 64% of respondents agreed that Online training are as effective as in person training while 36% disagreed. 48% of respondents disagreed that the individualised nature of VLE platforms makes acquisition of skills difficult while 52% agreed.

Research question 2: What is the gender perception on the effectiveness of VLE for skill acquisition?**Table 2:**

ITEMS	gender	Agree (%)	Disagree (%)
Participating in virtual training are as Effectiveness as in person training	Male	60	40
	Female	62	38
Virtual learning Environments are effective skill acquisition platforms	Male	92	8
	Female	84	16
Individualised nature of VLE platforms makes acquisition of skills difficult	Male	57	43
	Female	43	57
The way at which contents are set up encourages me to learn independently	Male	78	22
	Female	78	22
Online training are as effective as in person training	Male	60	40
	Female	70	30
The opportunity to learn using VLE at any place, time and pace to suit myself encourages independent learning	Male	76	14
	Female	74	16

Table 2 above shows the gender perception the the effectiveness of VLE for skill acquisition. 92 % of male and 84% of female respondents agreed that Virtual learning Environments are effective skill acquisition platforms while 8% of male and 16% of females disagreed. 60% of male and 62% of female agreed that participating in virtual training are as Effectiveness as in person training while 40%of male and 38% of female disagreed. 43% of male and 57% of female disagreed that the individualised nature of VLE platforms makes acquisition of skills difficult while 57% of male and 43% of female agreed. 60% of male and 70% agreed that online training are as effective as in person training while 40% of male and 30% of females disagreed.

Research question 3: What are the challenges faced using Virtual learning environment for skill acquisition?**Table 3:**

Items	Agree (%)	Disagree (%)
Lack of access to devices or other equipment for course limits my acquisition of skills	60	40
Lack of access to support services hinders participation in Virtual learning Environments	57	43
Network issues of either users and organizers limits skill acquisition.	84	16
Competing priorities due to work, family, and school limits participation in Virtual Learning Environment	68	32

Use of online facilities for troubleshooting, maintenance and update of applications of smart devices used in Virtual Learning Environment leads to error	47	53
Delays due to cancelled classes, network issues, user population, organisers delays affects participation	74	26
User Difficulties with technology usage for coursework affect skill acquisition	67	33
Inadequate funding for organizer necessitated the shift to online trainings amid covid-19 pandemic	53	47
Poor ICT literacy level of academic staff hinders transition to skill acquisition on virtual learning environment	76	24
Lack of motivating elements on Virtual learning Environment makes class sessions boring and inhibit participants ability to acquire skills	54	46
User population hinders the instructors from answering all question raised on Virtual learning environment	56	44
Access to unreliable internet/service hinders my participation in Virtual learning Environments	66	34

Table 3 above show the what the challenges faced using Virtual learning environment for skill acquisition are. 60% agreed that lack of access to devices or other equipment for courses limits my acquisition of skills while 40% disagreed. 66% of respondents agreed that Access to unreliable internet/service hinders my participation in Virtual learning Environments while 34% disagreed. 56% of respondents agreed that user population hinders the instructors from answering all question raised on Virtual learning environment while 44% disagreed. 76% of respondents agreed that poor ICT literacy level of academic staff hinders transition to skill acquisition on virtual learning environment while 24% disagreed.

Hypothesis 1: There is no significant difference in the effectiveness of VLE platforms for skill acquisition by gender.

Table 4: Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
EFFECTIV E OF VLE AS SKILL ACQUISIT ION PLATF ORM	2.319	.131	1.138	98	.258	.173	.152	-.129	.474
Equal variances assumed									
Equal variances not assumed			1.020	53.794	.312	.173	.169	-.167	.513

Table 4 above reveals that there was no significant difference in the effectiveness of VLE platforms for skill acquisition by gender. This is reflected in the above result male respondents had a means score 3.25 and standard deviation of 0.595 while the female respondents had a mean score of 3.08 and a standard deviation of 0.924, the P=0.258, df=98, level of significance= 0.05. Since the P value > 0.05 the null hypothesis is hereby not rejected.

5. Discussion of the Findings

The demography of the study was carried out to reveal how the respondents attempted the questionnaire. A total of 100 respondents were involved in this study with 63% male and 37% females. It also revealed that more than 44% of the respondents had participated in more than 7 VLE trainings while 56% have participated between 1-6 VLE trainings. It was revealed that smartphones (59%) were the most common device used to access VLE platform followed by laptops at 38% and then tablets at 3%.

This study sort to find out the perception of users on the effectiveness of VLE for skills acquisition. 89% of the respondents agreed that VLE are effective skills acquisition platforms while 11% disagreed , 78% agreed that way at which contents are set up encourages them to learn independently while 22% disagreed, 85% of respondents agreed that the opportunity to learn using VLE at any place, time and pace to suit myself encourages independent learning while 15% disagreed, 72% of respondents agreed that participating in virtual training are as Effectiveness as in person training while 28% disagreed. 64% of respondents agreed that Online training are as effective as in person training while 36% disagreed. 48% of respondents disagreed that the individualised nature of VLE platforms makes acquisition of skills difficult while 52% agreed. It also revealed the revealed the gender perception the effectiveness of VLE for skill acquisition. 92 % of male and 84% of female respondents agreed that Virtual Learning Environments are effective skill acquisition platforms while 8% of male and 16% of females disagreed. 60% of male and 62% of female agreed that

participating in virtual training are as Effectiveness as in person training while 40% of male and 38% of female disagreed. 43% of male and 57% of female disagreed that the individualised nature of VLE platforms makes acquisition of skills difficult while 57% of male and 43% of female agreed. 60% of male and 70% agreed that online training is as effective as in person training while 40% of male and 30% of females disagreed. This is in line with the finding of Molotsi (2020) which showed that the participant participated and accessed the VLE anytime and anywhere. It was noted that of the seven participants, five indicated that they accessed and participated in the morning, one in the evening, one anytime. Others also participated in VLE their office when connectivity is better or when their workload was light. These findings showed that the participants had different views of the preferred place and time to access or participate in VLE. It also argued in its study that the VLE enable the participants to access and participate 24/7. The use of VLE provided the participants with the opportunity to access and respond to threaded chats in their own time and a place convenient to them. This concurs with the views of Shahabadi and Uplane (2014) and Saykili (2019) who stated that students are provided with alternative 'anytime and anywhere' participation in e-learning. Saykili further attested that these innovations could enable students to learn outside the boundaries of a traditional classroom through informal and enriched learning experience using online communities on new platforms. Reyes (1997) noted that the introduction of a VLE can be a beneficial force for organizational change. Nwabude (2010) noted that Based on the findings of its study, the researcher concludes that virtual learning environment (VLE) can impact positively on the special education needs students' conceptual understandings in mathematics. Technology (VLE) has proved effective in motivating students learning and providing ammunition for students to see themselves in control of their learning. This study contradicts Mieg (2001), that reported that male gender possesses more positive attitude towards learning through ICT than their female counterparts as male take up challenges in learning how to use ICT than female. Molotsi (2020) asked participants: Did the use of VLE sharpened your digital skill? Please explain what you have acquired using VLE. The theme of digital skill was created. The findings revealed that most of the participants felt that their digital skills improved. This was evident when they indicated that the acquisition of digital technology was an enabler to deliver content online. Further, Nguyen (2015) found that online teaching resulted in improved test scores, student engagement, improved perception of learning, higher engagement with learning materials, stronger sense of community and reduction in failure. Online education programs provide opportunities to those students who are disadvantaged by geography, time and financial support (Crawford-Ferre&Weist , 2012). This evident when participant F said: VLE definitely sharpened my digital skills in teaching and learning online. Lyndon and Hale (2014) highlighted the importance of using VLE for students' engagement with the potential to enhance higher learning skills through the use of interactive online activities such as discussion forums. The study recommended to empower the university teachers to use other VLE interactive tools to promote participation and engagement among students (Molotsi, 2020) Fraser, Soanes, Jones, Jones and Malishev. (2017) contend that virtual conferences enable participants to obtain much of the benefits of in-person (face-to-face) conferences, with the advantages of reducing the financial and environmental costs involved in travelling to other countries. The authors, who are visibly favourable to this conference format, maintain that "Virtual conferencing opens the door for researchers from poorly funded Bassey and ofre (2013) revealed generally that the deployment of ICTs by academic staff is impacting profoundly on their tasks and skills in university education. The reasons may include an understanding of the benefits of ICTs as demonstrated by the respondents of Akinjide and Oyeboade (2007) who made regular use of ICTs facilities to communicate with their colleagues, to engage in research activities as well as for teaching and learning purposes.

Hypothesis 1 reveals that there was no significant difference in the effectiveness of VLE platforms for skill acquisition by gender. Ugyen, Chenga, Sangay and Rinchen (2021) stated that Positive attitude is exhibited on the use of VLE regardless of gender. Hoogerheide, Loyens & Van gol, (2016) also supported this claim that no gender difference was found in e-learning via video modeling examples and both males and females experienced an enhanced self-perceived competence after this e-learning model. Lee, Pan & Liao, (2011) stated that Gender differences in attitudes toward e-learning were generally insignificant although there were some different arguments. Students, whether males or females, held positive attitudes toward the e-learning platform—e-HO in China. Gender did not exert a significant influence on attitudes toward e-learning according to Chen and Tsai (2007). Little evidence was found regarding gender differences in attitudes toward e-learning systems (Albert and Johnson, 2011).

6. Conclusion

There is no doubt that training primarily focuses on helping participants acquire the knowledge and skills they need to develop as effective performers. Although both classroom instructions and on-the-job training can be used for skills development processes as well as training, development often includes additional activities such as varied work experiences and formal education. The post covid-19 pandemic realities brought in a new frontier to skill acquisition of teachers and academic staffs. Online and virtual learning platforms are at the fore front of this paradigm shift in skill acquisition which has been facilitated by economic realities of participants, organisers or sponsors, slow nature of returning to normal after long restrictions of movement, popularity and ease of use of virtual learning platforms and the security situation of the country. This study as shed more light to the perception of users on the effectiveness of virtual learning environments for skill acquisition. Some of he challenges identified during this study includes;

- Lack of access to devices or other equipment for course
- Lack of access to technical support services
- Network issues of either users or organisers
- Competing priorities due to work, family or school
- Poor ICT literacy among users
- Delays due to organisers, cancelled class or other users etc

Gender plays a significant role in the effectiveness of VLE for skills acquisition, since the Post-Covid 19 pandemic restrictions and realities, virtually all human activities can be undertaken using technology. This study as shown that there is a positive perception on the use of VLE for skill acquisition among academic staffs of the Lagos State University of Education.

7. Recommendations

Among other findings and assertions, the following recommendations among others were put forth from this study

- a. Periodic and interval trainings should be administered to teach end users in firms, organisations and schools from time to time in other to keep them updated on the recent and latest Apps for skills development.

- b. Participants should be exposed to more skills acquisition programmes through Virtual programmes
- c. Staff should be encouraged to execute meetings and programmes using Virtual means.

References

- Abbad, M. M., Morris, D., & de Nahlik, C. (2009). Looking under the Bonnet: Factors Affecting Student Adoption of E-Learning Systems in Jordan. *The International Review of Research in Open and Distance Learning*.
- Abubakar, B. M. (2014), Rethinking E- Learning in Library and Information Science (LIS) Education in Nigeria: Developing a Model for the 21st Century. *Information and Knowledge Management* ISSN 2224-5758 (Paper) ISSN 2224-896X (Online) Vol.4, No.9, 2014.
- Adamus, T.; Kerres, M.; Getto, B.; Engelhardt, N. (2009). Gender and E-Tutoring – A Concept for Gender Sensitive E-Tutor Training Programs. 5th European Symposium on Gender & ICT Digital Cultures: Participation - Empowerment – Diversity, March 5-7, 2009 - University of Bremen. Available at: http://www.informatik.uni-bremen.de/soteg/gict2009/proceedings/GICT2009_Adamus.pdf [Accessed: 31 July 2009]
- Al Ruheili, H., & Al-Saidi A. (2015). Students' perceptions on the effectiveness of using Edmodo in EFL Classes. *Journal of Global Academic Institute*, 1(1), 23-33.
- Albert, L. J., and Johnson, C. S. (2011). Socioeconomic status-and gender based differences in students' perceptions of e-learning systems. *Decision Sci. J. Innov. Educ.* 9, 421–436. doi: 10.1111/j.1540-4609.2011.00320.
- Al-Busaidi, S., & Tuzlukova, V. (2013). Some reflections on Moodle-based learning in the English Foundation Programme of Sultan Qaboos University. *Asian Journal of Social Sciences and Humanities*, 2(3), 166- 173.
- Al-Kathiri, F. (2014). Beyond the classroom walls: Edmodo in Saudi secondary school EFL instruction, attitudes and challenges. *English Language Teaching*, 8(1). Retrieved on July 2, 2015 from <http://dx.doi.org/10.5539/elt.v8n1p189>
- Al-Said, K. (2015). Students' perceptions of Edmodo and mobile learning and their real barriers towards them. *The Turkish Online Journal of Educational Technology*, 14(2), 167-180.
- Armstrong, M. (2009). *Armstrong's handbook of human resources management practice*. London: Kogan page.
- Astleitner, H.; Steinberg, R. (2005). Are there gender differences in web-based learning? An integrated model and related effect sizes. *AACE Journal. International Forum on Information Technology and Education* 13, 47-63
- Balasubramanian, K., Jaykumar V., & Fukey L. N. (2014). A study on “student preference towards the use of Edmodo as a learning platform to create responsible learning environment.” *Procedia - Social and Behavioral Sciences*, 144(2014), 416-422.
- Barco. (2018, October 18). Unlock the full potential of a campus with the virtual classroom, Barco's newest collaborative learning tool. <https://www.barco.com/en/News/Pressreleases/Unlock-the-full-potential-of-a-campus-with-the-Virtual-Classroom-Barcosnewest-collaborative-learnin.aspx>

- Bassey R. S. and Ofre E. T (2013) Training Initiatives for Skills Acquisition In ICT By Academic Staff of the University of Calabar, Calabar, Nigeria. *Global journal of educational research* vol 12, 2013: 61-68
- Bataineh, R. F., & Mayyas, M. B. (2017). The utility of blended learning in EFL reading and grammar: A case for Moodle. *Teaching English with Technology*, 17(3), 35-49
- Bello, S., Abubakar, S, Olubummo, D, Noah, O, and Bello, R. W (2022). COVID-19 and Virtual World: The Implications on Nigeria Education VL - 10.2139/ssrn.3805733 SSRN Electronic Journal
- Bicen, H. (2014). The role of social learning networks in mobile-assisted language learning: Edmodo as a case study. *Journal of Universal Computer Science*, 21(10), 1297-1306.
- Bruestle, P.; Haubner, D.; Schinzel, B.; Holthaus, M.; Remmele, B.; Schirmer, D.; Reips, U.D. (2009). Doing E-Learning/Doing Gender? Examining the Relationship between Students' Gender Concepts and E-learning Technology. 5th European Symposium on Gender & ICT Digital Cultures: Participation - Empowerment – Diversity, March 5 - 7, 2009 - University of Bremen. Available at: http://www.informatik.uni-bremen.de/soteg/gict2009/proceedings/GICT2009_Adamus.pdf [Accessed: 31 July 2009]
- Chen, R. S., and Tsai, C. C. (2007). Gender differences in Taiwan university students' attitudes toward web-based learning. *CyberPsychol. Behav.* 10, 645–654. doi: 10.1089/cpb.2007.9974
- Dayag, J. (2018). Reaching out: Facilitating EFL learning through Edmodo. *International Journal of Advanced Multidisciplinary Scientific Research*, 1(2), 1-7.
- Dorman, S.M. (1998). Technology and the gender gap. *Journal of School Health*, 68, 165-166
- Ferriman, J. (2019, April 1). Characteristics of a virtual classroom. <http://www.learndash.com/characteristics-of-a-virtual-classroom/>
- Fraser, H., Soanes, K., Jones, S. A., Jones, C. S., & Malishev, M. (2017). The value of virtual conferencing for ecology and conservation. *Conservation Biology*, 31(3), 540–546. <https://doi.org/10.1111/cobi.12837>.
- Gomes, L., & Murphy, J. (2003). An exploratory study of marketing international education online. *The International Journal of Educational Management*, Vol. 17(3), pp. 116-125.
- Gunawan, W., Kalensun, E. P., & Fajar, A. N. (2018). E-Learning through social media in the virtual learning environment. In *Proceedings of 2nd Nommensen International Conference on Technology and Engineering 2018* (pp. 19-20). Medan, Indonesia. Doi: 10.1088/1757-899X/420/1/012110
- Hoogerheide, V., Loyens, S. M. M., and Van Gog, T. (2016). Learning from video modeling examples: does gender matter? *Instruct. Sci.* 44, 69–86. doi: 10.1007/s11251-015-9360-
- Jones, G. R. and George, J. M. (2003). *Contemporary management*. (3rd ed.) New York: McGraw-Hill.
- Kayany, J. M.; Yelsma, P. (2000). Displacement effects of online media in the sociotechnical contexts of households. *Journal of Broadcasting & Electronic Media*, 44, 215-229.
- Kear, K. (2007). Communication aspects of virtual learning environments: Perspectives of early adopters. Retrieved on September 20, 2017 from <http://oro.open.ac.uk/8623/1/KearCommunicationAspects2.pdf>

- Lee, C. Y., Pan, P. J. D., and Liao, C. J. (2011). Impacts and preferences study for eHO as a holistic learning environment complementary to e-learning. *Comput. Educ.* 56, 747-759. doi: 10.1016/j.compedu.2010.10.017
- Lee, W. W. and Owens, D. L. (2004). *Multimedia –base instructional design*. C. A.: Pfeiffer Willey Imprint
- Livingstone, D., Kemp, J., & Edgar, E. (2008). From Multi-User Virtual Environment to 3D Virtual Learning Environment ALT-J: Research in Learning Technology, Vol.16 (3), pp. 139-150.
- McCoy, L.P.; Heafner, T.L. (2004). Effect of gender on computer use and attitudes of college seniors. *Journal of Women and Minorities in Science and Engineering*, 10, 55-66.
- McSporran, M.; Young, S. (2001). Does gender matter in online learning? Unitec New Zealand Working paper. Available at: http://hyperdisc.unitec.ac.nz/research/ALTJpaper_9.pdf
- Mimirinis, M., & Bhattacharya, M. (2007). Design of virtual learning environments for deep learning. *Journal of Interactive Learning Research.*, 1(1), 55-64.
- Molotsi, A. R. (2020). The university staff experience of using a virtual learning environment as a platform for e-learning. *Journal of Educational Technology & Online learning*, 3(2), 133-151
- Organization for Economic Co-Operation and Development. (OECD). (2005) “E-learning in Tertiary Education”. Policy Briefs. Retrieved January 8, 2008 from <http://www.oecd.org/dataoecd/27/35/35991871.pdf>.
- Pilot Study on the Impact of VLE on Mathematical Concepts Acquisition within Secondary Education in England Aaron A. R. Nwabude World Academy of Science, Engineering and Technology 45 2010
- Pollard, A. A., J. Maddock, M. Swaffield, S. Warin and P. Warwick, P. (2008). *Reflective Teaching*. (3rd ed.) New York: Continuous International Publishing Group.
- Reyes, M (1997) The impact of organisational culture on the success of information technology projects, in Fung, A C, Visscher, A J, Barta, B-Z, Teather, D C (eds) *Information technology in educational management for the schools of the future*, London, Chapman & Hall
- Rhema & 2010 Rhema, A., & Miliszewska, I. (2010). Towards e-learning in higher education in Libya. *Issues in Informing Science and Information Technology*, 7(1), 423-437.
- Saykili, A. (2019). Higher education in the digital age: The impact of digital connective technologies. *Journal of Educational & Online Learning*, 2(1), 1-15. Doi: 10.31681/jetol.516971
- Shahabadi, M. M., & Uplane, M. (2014). Synchronous and asynchronous e-learning styles and academic performance of e-learners. *Procedia-Social and Behavioural Sciences*, 176, 129-138.
- Ugyen P , Chenga D , Sangay T , Rinchen D (2021). Effectiveness of the Virtual Learning Environment (VLE) for online teaching, learning, and assessment: Perspectives of Academics and Students of the Royal University of Bhutan. *international Journal of English Literature and Social Sciences* Vol-6, Issue-4; Jul-Aug, 2021
- Venkatesh, V.; Morris, M.G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS Quarterly*, 24, 115-139.

- Warner, R. (2013). Personal and professional skills of TESOL practitioners of the future. In P. Davidson, M. Al Hamly, C. Coombe, S. Troudi & C. Gunn (eds,) Proceedings of the 18th TESOL Arabia conference: Achieving Excellence through Life Skills Education (pp. 22-28). Dubai: TESOL Arabia
- Yu Z and Deng, X. (2022). A Meta-Analysis of Gender Differences in e-Learners' Self-Efficacy, Satisfaction, Motivation, Attitude, and Performance Across the World: Frontier. Psychology., 18 May 2022 Sec. Gender, Sex and Sexualities <https://doi.org/10.3389/fpsyg.2022.897327>