Universities Lecturers' Use of Web Tools for Blended Instruction in Abia state

Otabuko, Confidence Maduka
Akubugwo, Ijeoma Ginika
Department of Curriculum and Teacher Education
Faculty of Education, Abia State University, Uturu, Nigeria

Abstract

Web tools are internet-based platforms that navigate the web for easy accessibility, information dissemination, interaction and collaboration which is well known to be very necessary for the teaching and learning process. However, a sizeable number of lecturers who are digital immigrants might not have been trained with ICT's and in the time of proliferation of web tools. Thus, the need for this study which assessed lecturers' use of web tools for blended instruction in universities in Abia State. The research adopted a descriptive research design. The sample for this study was purposively drawn from three universities in Abia State which were Abia State University, Uturu, Michael Okpara University of Agriculture Umudike and Gregory University Uturu. The respondents were 257 lecturers which consisted of 194 males and 63 females respectively. Among the sampled lecturers were 27 in the professorial cadre, 52 senior lecturers and 178 others (Lecturer 1-Graduate Assistant). Mean score was used to answer the research questions while t-test and ANOVA were used to test hypotheses. The findings of the study revealed that university lecturers in Abia State were not using web tools for blended instruction (1.30 < 1.50 benchmark); there was no significant difference between male and female lecturers use of web tools for blended instruction; there was no significant difference on the use of web tools for blended instruction based on lecturers' status. Thus, it was recommended that school proprietors provide an avenue for training and retraining of staff on the use of web tools for blended instruction.

Keywords: Instruction, Blended Instruction, Use, Collaboration, Interaction

Introduction

The presence of technology and technological advancement in everyday life is constantly changing, increasing what the learners expect from lecturers and what the lecturer expects from the learners. This advancement is currently an indispensable part of nearly all organizations including education, teaching and learning process (Ghavifekr, Thanusha, Logeswary, & Annreetha, 2016). Other authors like (Grimus, 2000; Yelland 2001 and Bansford, Brown & Cocking 2000) cited in Simin *et al*., (2016) asserted that computers which were introduced in education in the early 1980s will become parts and parcel of education. And today, there is no sector of business, education, organization and other sectors that function effectively without technology. Especially, education is being improved by up-to-date technology such as web tools that assist to blend teaching and learning (Ghavifekr, et al., 2014).

According to (Richard, 2006), technology in education is used to support or assist students to think and learn. (Paul Albert, 2016) concludes that technology can be found within our surroundings which include laptops, computers, video games, televisions, cell phones and other devices like radios, smart cars that computerized and considered technologically encoded. ICT has enormously advance teaching and learning thereby making the teacher and the learner participate fully in the classroom. Research has shown that teaching and learning cannot be effectively accomplished without ICT integration. ICT could be used by teachers in the form of web tools in a blended format to enhance or assist learners understand topics and make teaching livelier and more interesting. In line with the supportive nature of blended learning, Jennifer (2017) reported that web tools normally provide learners with special needs the advantage of interacting with the teacher physically and ask questions to be clarified. Again, learners are guided in addition to the possessions of practical or virtual resources.

What the 21st-century learners expect is a learning scenario with a digital approach that is moving learning from the conventional method to a blended learning approach or better still fully online. Education is a socially oriented activity and quality education has traditionally been associated with teachers having high degrees of personal contact with the learners (Mathur, 2013).
Use is a concept that entails integration, utility and utilization of internet resources and web tools for blended instruction. Web tools are being used by several lecturers but the actual use and purpose of use cannot be determined to be educational. For this study, web tools are a very concrete part of information and communication technology. Information and communication technology as a term covers typologies of software, hardware, web tools, applications, Wi-Fi, broadband, modem, CD-ROM, flash drives and so on.

During teaching and learning, many students have special needs and difficulties in learning which has become a challenge to the educational society. There is a call to provide a situation to meet the desires of these students who may not understand what the lecturer taught at once. Some students need concrete or picture of particular teaching in slow motion before they will understand that particular topic. As a result, this current research centres on the assessment of lecturers' use of web tools for blended instruction in Universities in Abia State. It has been proved that integration of technologies in education has alleviated uncountable challenges in teaching and learning including using web tools to impart more knowledge to learners. The emergence of the internet technology like web 1.0, 2.0 technologies and others have brought about loads of changes in the 21st-century settings, educational settings and organizations at large, and thus making the use of technology in the classroom a much talked about concept. We live in a modern era where there is consistent information flow and where there are an exchange and sharing of information through the use of the internet. Technology advancement which has made the world to become a universal community as a result of "World Wide Web" creates opportunities for information and technology to become obsolete. The advent of technology advancement has led to the development of 1.0, 2.0 and others. Tim Berners-Lee first introduced Web in 1989, (Tim Berners-Lee as cited in Khanzode & Sarode, 2016) A remarkable progress has been made on the web platform and its related technologies as regard teaching and learning. Information web is referred to as web 1.0 while web 2.0 such as YouTube is noted as verbalization web. World Wide Web (www) comprises of interlinked hypertext documents that have the right of entry through the use of the internet.

Many web pages that have images, text videos including other multimedia that navigates in-between them, via hyperlink can be viewed by using a web browser, (Khanzode & Sarode, 2016). Web 1.0 is responsible for reading only content, providing available information to any person when needed and utilization of hypertext mark is responsible for reading only content, provision of available information to anyone that needs it and utilization of hypertext mark-up language. According to Tim Berners-Lee (1998), the second generation of web is web 2.0. Many applications in web 2.0 enhance network effect which can be utilized by people. Properties such as collaborative, participatory and distributed practices that motivate activities are facilitated by web 2.0. Users of web 2.0 technologies have less control with more interaction. Web 2.0 is associated with podcasts, blogs, wikis RSS feeds and others. Social networking and information exchange users are located on web 2.0. The benefit of web 1.0, web 2.0 technologies and others cannot be overemphasized as long as the educational system is concerned in this new generation digital students.

Almost all fields of life have incorporated the use of technology, and as such the educational sector cannot be left behind in this regard. These web tools like web 1.0, 2.0 and others have been used online in the classroom to lessen the burdens of lecturers who find it difficult to comprehend with students that are slow learners. Online web tools for blended instruction have made teaching and learning to be very effective with positive remarkable results on students. This method of teaching has offered increasing support to the reinforcement of a blended classroom, where students with slow learning capability

receive the conventional face-to-face supervision from the lecturer, in combination with the benefits of practical supplemental materials premeditated to reinforce instruction. With regards to the foregoing, it has been observed that most lecturers are digital immigrants who tend to be managing the new knowledge in getting familiar with contemporary web tools that are available to aid instruction. The study, therefore examined lecturers use web tools for blended instruction in universities in Abia State?

Research Questions

i. Do lecturers use web tools for blended instruction?
ii. Does lecturers' gender influence their use of web tools for blended instruction?
iii. What is the influence of lecturers' status in their use of web tools for blended instruction?

Research Hypotheses

HO_1: There is no significant difference between male and female lecturers use of web tools for blended instruction.

HO_2: There is no significant difference in the lecturers' use of web tools for blended instruction based on status.

Literature Review

Digital technologies have been made available in providing opportunities for teaching and learning which have paved new ways to organize teacher education within the last decades (Pernilla & Goran, 2019). Valuable instructional tools like video tapped lessons have played a very essential role to capture teaching episodes, subsequent manifestation and students' teachers' professional knowledge development (Pernilla & Goran, 2019). The essence of these is to create an environment for quality pedagogical teaching and learning to take place. Bernstein (2000) stated that pedagogy is a sustained process where someone acquires new form or develops existing forms of conduct, knowledge, practice and criteria from somebody deemed to be an appropriate provider and evaluator. Pedagogy is an encompassing term concerned with what the teacher does to influence learning in others. Siraj-Blatchford, Sylva, Muttock, Gilden, and Bell (2002) opined that pedagogy is an instructional technique and strategy that allow learning to take place. It has to do with the interactive process between teacher and learners to facilitate learning in the classroom or learning environment. Freebody (2014) outlined what pedagogy has to do; manage the attention of students, deliver the syllabus, allow for self-expression, protect all individuals in the classroom and monitor students progress.

Cox, Web, Abbot, Blacky, Beauchamp &Rhodes (2003) assert that the model of pedagogy held by researchers and academics have become more complex over time, incorporating the contemporary changes of the 21st century and its learners. The power of pedagogy offers a thoughtful overview of research, scholarship and practice (Leach & Moon, 2008). Recognizing the potential and constraints of ICT as a tool which supports and shapes instruction, requires teachers to have a knowledge of the subject domain and competence in the appropriate use of the technologies, a capability to orchestrate the competency and affordances in the setting (Kennewell, 2001). The pedagogical use of web tools for instruction is very necessary for the current dispensation of the 21st century.

Osguthorpe and Graham (2003) stated that although most online instruction is conducted via having students and instructors interact primarily through the internet, an alternative form called blended instruction combines the internet with face-to-face instruction. They outlined six cogent reasons why one might choose to design or use a blended instruction system; pedagogical richness, access to knowledge, social interaction, personal agency, cost-effectiveness, and ease of revision. Web tools enable the concept of blended instruction to be clearer, it is important to also mention that some of the web tools can send notifications to students, reminding them of school works which have to be done, save data due to cloud-based saving feature. The following web tools will be seen as relevant to blended instruction in

the course of this work, these tools would enable lecturers' to have a good blend in their pedagogical approach; Edmodo, Skype, Dropbox, Remind, Google+.

Labanca, Worwood, Schauss, Lasala and Donn (2013) defined blended instruction as a computer-mediated instructional strategy that leverages technology and focuses on the student-teacher relationship to enhance independence, engagement and achievement. William, Bland, and Gillian (2008) opined that blended instruction is a combination of traditional teaching method and distributed instruction. Blended instruction is realized in an instructional environment where there is an effective integration of different modes of delivery models of teaching as a result of adopting a strategic and systematic approach to the use of technology combined with the best features of the face to face interaction (Kraus, 2007). With all these research studies by various authors, it is observed that blended tools are very necessary for teaching and learning; as its role in education cannot be overemphasized. As a result, the researchers decided to assess lecturers' utilization of web tools for blended instruction in teaching and learning at Abia State University

Researchers have conducted several studies thereby encouraging blended instruction or teaching. Wenga, Maeda & Bouck (2014) reported at the execution of their thorough online and blended teaching and learning research study that computer-assisted instruction (CAI) enhances the knowledge of students that have learning difficulties/slow learners. Blended learning makes room for collaboration among students and their interaction results in positive learning discovery. Wenga, Maeda & Bouck (2014) upheld the finding of Yu, Choy, Chan & Low (2008) as cited in Jennifer (2017), that mixture of hybrid learning improves interaction in the classroom. Blended learning enhances students and teachers' interaction by using suitable software in a good e-learning setting to optimize communication management and administrative proficiency.

Behjat, Yamini, and Bagheri, (2012) discovered in a study that students that registered in blended class for English course performed excellently when compared with their counterparts who used traditional method class. Greer, Rowland & Smith, (2014) conducted a study on students in grade six contents using blended classes, they offered strategies to enhance blended and virtual classes. Benhjat et al. concluded that blended instruction assist the students to gain more knowledge by working at their own pace without being subjected under the stress of the classroom prospects. Blended learning instruction assists those with learning difficulties to become proficient. Students that engaged in blended learning instruction have chances of being than those students that were enrolled in a face-to-face classroom (Keramaidas, 2012). Students have a positive perception of the use of blended instruction. According to Trpkonska (2011) as cited in Jennifer (2017) reported that more than 50% of University students that signed up university blended courses recognized blended learning as being valuable and effective.

Traditional Face-to-face and Online way of learning

Classroom blended instruction can assume any format. McCown (2014) concluded that a course is blended or hybrid if the content is 30-70% online delivery. Many students in various disciplines have derived thousands of effective virtual learning prospects of various academic levels from blended learning since its inception in the 1990s (Jennifer, 2017). Eliot (2009) cited in Ling & Magdaline (2015) that technology knowledge demand has shifted teachers from face-to-face or traditional teaching methodology to technological advancement process. Ling & Magdaline (2015) reported in a study that teaching the English Language with blended tools gives better performance. Teachers use blended learning to enhance online and face-to-face learning. Fishman, Konstantopolous, Kubitskey, Vath, Park, Johnson & Elderson (2013) concluded that teachers and students gain significantly in using online and face-to-face traditional learning. In the sector, e-learning which includes blended is on the increase daily due to its commendable merits. Both face-to-face traditional and blended instruction are highly needed to complement the learner. For a teacher to achieve the stated goal, face-to-face, blended learning or online

instruction, the location, the nature of the learners and the available resources must be put into consideration (Khan, 2015).

Distance Learning

According to D'Abundo & Sidman (2018), web-based delivery curriculums that were termed inappropriate for teaching and learning has become useful online tools. Web-based delivery classrooms have enhanced educational opportunities. Khan (2015) defined distance education as a learning situation in which the distance between the learner and the teacher is geographically dispersed. Computer, internet technologies with faster connectivity have created rooms for all sorts of distance education programmes to be instituted through the internet. The combination of blended instruction and face-face traditional approach resulted in e-learning or online instruction which is distance learning. (Graham, 2001 as cited in Khan 2015). Khan (2015) concluded that blended learning has been in existence for the past years but there is an increase in its utilization, especially in the higher institutions.

Method

The descriptive research design of the quantitative survey method was used for this study.
The population for this study comprised all university lecturers in Abia State. The target population for this study was lecturers from all three universities in Abia State. These three universities represented Federal, State and Private. Based on a population of 1,424 lecturers, the Israel model (2013) was used in selecting the sample size of 333 for the research. Multi-stage sampling was used to draw samples for this study. The simple random sampling was used to select respondents from the selected schools.
Table 1 provides the respondent's distribution in the three different universities.

Table 1:
Distribution of the Respondents in the Three Institutions

University	Total Population	Sample Population
Abia state university Uturu	634	147
Michael Okpara University of Agriculture Umudike	558	82
Gregory University Uturu	232	57
Total	1424	286

A researcher designed questionnaire was used to gather relevant information. Copies of the questionnaire were distributed by the researcher with the help of a researcher assistant.
The completed and properly filled copies of the questionnaire were retrieved. The response rate showed that out of the 286 copies of the questionnaire distributed to lecturers at the three universities in Abia state, 273 were returned. Two hundred and fifty-seven (257), however, were found to be usable and thus, amounting to about 77% response rate.

Results

Table 2:
Distribution of Respondents Based on Institution

Institution	Frequency	Percentage
Abia state university Uturu	110	42.8
Michael Okpara University of Agriculture Umudike	97	37.7
Gregory University Uturu	50	19.5
Total	**257**	**100.0**

From the data collected and analyzed, Abia State University has the highest number of respondents with 110, amounting to 42.8%, while the Michael Okpara University of Agriculture Umudike had 97, in essence, 37.7% and Gregory University, Uturu had the lowest number with 50 resulting in 19.5%. The disparities could be because Gregory university is a private University and normally had the lowest number of lecturers.

Table 3:
Respondents Distribution Based on Gender

Gender	**Frequency**	**Percentage**
Male	194	75.5
Female	63	24.5
Total	257	**100.0**

Table 3 revealed that the respondents were 194 males and 63 female lecturers. This in percentage is 75.5 and 24.5 respectively.

Table 4:
Distribution based on lecturers status

University	Total Population	Percentage
Professorial Cadre	27	10.5
Senior Lecturers	52	20.2
Others (Lecturer 1 - G.A)	178	69.3
Total	**257**	**100.0**

According to table 4, lecturers in the category of others (Lecturer I, II, Assistant Lecturer and Graduate Assistant) formed the greater number and subsequently with a percentage of the total respondents 178, 69.3%. Senior lecturers came second with 52 respondents, in essence with 20.2% and lecturers in the professorial cadre were the lowest with 27 respondents, (10.5%). The reason for the low number of professorial cadre respondents was due to their busy schedules during the research, and so most didn't have time to fill the questionnaires distributed to them.

Research Question One: Do Lecturers use Web Tools for Blended Instruction

Table 5: Lecturers use of Web Tools for Blended Instruction

Use the following web tools	Use (%)	Don't Use (%)
Google in Education	59 (22.9)	198 (77.1)
Edmodo	05 (2.0)	252 (98.0)
Google+	201 (78.2)	56 (21.8)
Google Drive	186 (72.4)	71 (27.6)
Dropbox	53 (20.6)	204 (79.4)
Pinterest	11 (4.3)	246 (95.7)
Skype	143 (55.6)	114 (44.4)
Remind	12 (4.7)	245 (95.3)
Diigo	08 (3.1)	249 (96.9)
Poll everywhere	11 (4.3)	246 (95.7)
Youtube	192 (74.7)	65 (25.3)
Google classroom	52 (20.2)	205 (79.8)
Twitter-for-education	33 (12.8)	224 (87.2)
Socrates	06 (2.3)	251 (97.7)
Prezi	04 (1.5)	253 (98.5)

The percentage return of lecturers use of web tools for blended instruction was found to be low in most of the items studied. Therefore, considering the outcome of the percentage scores of all items, it can be

deduced that few lecturers were sparingly using web tools for blended instruction in universities in Abia State.

Research Question 2: Does Lecturers Gender Influence their Use of Web Tools for Blended Instruction

Table 6: Gender Influence in the Use of Web Tools for Blended Instruction

Gender	Use %	Don't use	Total
Male	131 (67.5)	63 (32.5)	194
Female	21 (33.3)	42 (66.7)	63

Table 6 revealed the influence of gender on the lecturers' use of web tools for blended instruction. The percentage score of male lecturers was 67.5 and 32.3 in the use and and don't use categories respectively, while that of the female lecturers was 33.3 and 66.7 in the use and don't use respectively. It is thus revealed that male lecturers used webtools more than their female conterparts. This though is not unconnected to the variance in a number of both genders studied.

Researcher Question 3: What is the influence of lecturers' status in their use of web tools for blended instruction?

Table 7:
Influence of Lecturers Status in the Use of Web Tools for Blended Instruction

Status	Use	Don't use	Total
Professorial Cadre	06 (22.2)	21 (77.8)	27
Senior Lecturers	21 (40.4)	31 (59.6)	52
Others	136 (76.4)	42 (23.6)	178

Table 7 revealed the influence of lecturers' status in the use of web tools for blended instruction. The percentage score of lecturers in the professorial cadre was 06 (22.2) and 21 (77.8) in the category of those that were using and the ones that were not using respectively, while that of the senior lecturers was 21 (40.4) and 31 (59.6) respectively. The lecturers in the category of others garnered a higher percentage score of 136 (76.4) and 42 (23.6) for use and don't use respectively. This, therefore, signifies that there is higher use on the part of the lecturers in the category of others.

Hypotheses Testing

Hypothesis One: There is no significant difference between male and female lecturers use of web tools for blended instruction.

Table 8:
Gender Interference and Web Tools Use

Gender	N	X	D	Df	t	Sig. (2 tailed)	Remarks
Male	194	1.28	.10	255			
Female	63	1.28	.13		-2.57	.74	Accepted

Table 8 indicates that t (257) = -2.5, p= .74> 0.05. That is, the result of t-value -2.5, resulting in 0.74 significance value, was greater than the 0.05 alpha value. This, therefore, implies that the stated null hypothesis was accepted. The above result implies that the stated null hypothesis was established thus; there was no significant difference between male and female lecturers use of web tools for blended instruction.

Hypothesis Two: There is no significant difference in the lecturers' use of web tools for blended instruction based on status.

Table 9:

Lecturers Status and Web Tools Use

	Sum of squares	Df	Mean squares	F	Sig.	Remarks
Between Groups	.032	2	.016	1.20		
Within Groups	3.336	254	.013		.30	Accepted
Total	3.398	256				

Table 9 revealed that there was no significant difference among lecturers of different status and their use of web tools for blended instruction, {F (2, 257)= 1.2, p=.30> 0.005}. The implication of this is that the significant value (.30) was found to be greater than the alpha value (0.05), therefore, the null hypothesis was accepted. The null hypothesis was established thus; there was no significant difference among professorial cadre, senior lecturer and others (L-I, L-II and G-A)'s use of web tools for blended instruction.

Discussion

Research question one sought to examine if lecturers do use web tools for blended instruction. Generally speaking, from the percentage scores, the result showed that most lecturers in Abia State were not using web tools for blended instruction. This finding, therefore, echoes the assertion of Edozie and Aghu (2010) who opined that empowerment in ICT and web tools enhances the abilities of people to use ICT to improve skills and strengthen study capabilities.

Research question two sought to find out whether lecturers gender influences their use of web tools for blended instruction. From the findings of the research, male lecturers showed more use of web tools in the teaching and learning process cum blended instruction. Gender and ICT interact in complex ways but on the aggregate, females are much less likely to participate in ICT courses, careers and leadership (Withers, 2000). In the same vein Fenwick (2004) research also showed that gender inequity persists both in access to and experience of learning opportunities with ICT.

Research question three sought to assess whether lecturers' status influenced the use of web tools for blended instruction. The findings of the study revealed that lecturers in the category of others (LI-LII to G-A) had used web tools more than the senior lecturers and the professorial cadre category. These findings echoed the assertions of Norbertas (2013) where it is observed that junior lecturers used web tool applications that aide teaching more and that the reason for this scenario is not far-fetched, the junior lecturers are younger and as such are digital natives.

Conclusions and Recommendations

The inculcation of ICT and the use of web tools in the teaching and learning process is a necessity that would enhance ubiquitous learning which in all ramifications blended learning. This, therefore, will go a long way in aiding blended learning and instruction, thus enabling teacher and lecturers to teach from the comfort of their homes or offices. This research assessed the use of web tools for blended instruction in universities in Abia State, Nigeria. The results obtained from the data collected and analyzed in the study indicated that university lecturers were not using web tools for blended instruction. The study, therefore, proffered the following recommendations as a way of encouraging the use of web tools for blended instruction;

1. The Government and School owners should provide on the job training for lecturers to enable them to learn the use of web tools.
2. The government at all levels should map out programmes that do not favour the males more than the female lecturers.
3. Lecturers at all levels or cadre should be trained to incorporate web tools in the teaching process.

References

Behjat, F., Yamini, M., & Bagheri, M. (2012). Blended learning: A ubiquitous learning environment for reading comprehension. International Journal of English Linguistics, 2(1), 97-104. https://doi.org/10.5539/ijel.v2n1p97

Bernstein, B. (2000). *Pedagogy, Symbolic control and Identity*. Lanham, MD: Roman and Little Field.

Cox, M., Webb, M., Abbott, C., Blakely, B., Beauchamp, T., & Rhodes, V. (2003). *Information communication and technology and pedagogy.* London: DFES Publications.

D'Abundo, M.E. (2018). Integrating web-based technologies into the education and training of health professionals. Encyclopedia of Information Science and Technology, Fourth Edition. DOI:10.4018/978-1-5225-2255-3.ch506

Edozie, C., & Aghu, E. I. (2010). Evaluating University Students Awareness of Information and Communication Technology. *Nnamdi Azikiwe University Orient Journal of Education*, 31-40.

Fenwick, T. (2014). What happens to the girls? Gender, Work and Learning in Canada's New Economy. *International Journal of Gender and Education*, 169-185.

Freebody, P. (2014). *Accelerated Literacy Pedagogy.* Los Angeles: Bateman Bay.

Fishman, B., Konstantopolous, S. Kubitskey, B.W., Vath, R. Park, G., Johnson H., & Elderson, D.C., (2013). Comparing the impact of online and face-to-face professional development in the context of curriculum implementation. SAGE Journal https://journals.sagepub.com/doi/pdf/10.1177/0022487113494413

Ghavifekr, S., Thanusha, K., Logeswary, R., & Annreetha, A. (2016). Teaching and learning with ICT tools: issues and challenges from teachers' perceptions. *Malaysian Online Journal of Educational Technology, 4*(2).

Ghavifekr, S., Ahmad, Z. A., Muhammed Faizal, A., Ng, Y. R., Yao, M., & & Zhang. T. (2014). ICT integration in education: incorporation for teaching and learning improvement. *Malaysian Online Journal of Educational Technology*, 2(2), 24-46.

Greer, D., Rowland, A., & Smith, S. (2014). Critical considerations for teaching students with disabilities in online environments. Teaching Exceptional Children, 46(5), 79-91 https://doi.org/10.1177/0040059914528105

Harrison, T. M., & Barthel, B., ―Wielding new media in Web 2.0: exploring the history of engagement with the collaborative construction of media products‖. New media & Society, 11(1&2), pp. 155–178, 2009.

Jennifer, H. R. (2017). Bended learning environment a viable alternative for special needs students. *Journal of Education and Training Studies 5(2)*, ISSN2324-805X E-ISSN 2324-8086.

Kennewell, S. (2001). Using Affordances and Constraints to Evaluate the Use of Information and Communications Technology in Teaching and Learning. *Journal of Information Technology for Teacher Education, 10*, 101-116.

Khan, S. (2015). Blended learning vs traditional classroom setting. International Journal of Nursing 1(2) 158-161.

Khanzode, C.K. and Sarode, R.D., (2016. Evolution of the World Wide Web: from 1.0-6.0. International Journal of Digital Library Services 6(2) ISSN: 2550-1142 online www.ijodls.in

Kraus, K. (2007). *a Griffith website*. Retrieved November 16, 2016, fro www.griffith.edu.au/about-griffith/plans-publications/pdf/blended-learning-strategy-jan- 2008-april.edit.pdf

Labanca, F., Worwood, M., Schauss, S., LaSala, J., & Donn, J. (2013). *Blended Instruction: Exploring Student-centred pedagogical Strategies to promote a technology-enhanced learning environment.* Litchfield:: CT: EDUCATION CONNECTION.

Leach, J., & Moon, B. (2008). *The Power of Pedagogy.* Los Angeles, London, New Delhi, Singapore: Sage.

Ling Siew-Eng & Magdaline A.M., (2015). Blended learning in teaching secondary schools' English: a preparation for tertiary science education in Malaysia. Procedia- Social and Behavioural Sciences 167 293-300.

Mathur, M. (2013). *International Journal of Business and Economic Research*.

McCown, L. (2014). Blended courses: The best of online and traditional formats. Clinical Laboratory Science, 23(4), 205-211.

Norbertas, A. (2013). *Challenges and Opportunities for School and Teachers in the Digital world.* Ontario: SMILE.

Osguthorpe, R., & Graham, C. R. (2003). *Blended Learning Systems: Definitions and Directions.*

Paul Albert, A. (2016). higher secondary teachers' attitude towards the use of ICT in teaching and learning process. *International Education and Research Journal 2(7)*, E-ISSN No 2454-9916.

Pernilla Nilsson and Goran Karlsson, (2019), Capturing students' teachers' pedagogical content knowledge using CoRes and digital technology. International Journal of Science Education 41(4) https://www.tandfonline.com/doi/full/10.1080/09500693.2018.1551642

Richard, E. (2006). Artificial intelligence and educational technology. *Programmed Learning and Educational 24 (2)*, 90-93.

Siraj-Blatchford, I., Sylvia, K., Muttock, S., Gilden, R., & Bell, D. (2002). *Researching Effective Pedagogy in the Early Years.* Oxford, United States of America: Department of the Educational Studies University of Oxford.

Tim Berners-Lee, (2018). "The worldwide web: a very short personal history" http://www.w3.org/peop/e/Berners-Lee/ShortHistory.html1998

Weng, P., Maeda, Y., & Bouck, E. (2014). Effectiveness of cognitive skills-based computer-assisted instruction for students with disabilities: A synthesis. Remedial and Special Education, 35(3), 167-180. https://doi.org/10.1177/0741932513514858

William, N. A., Bland, W., & Gillian, C. (2008). Improving Students Achievement and Satisfaction by Adopting a Blended Learning Approach to Inorganic Chemistry. (pp. 43- 50). DOI: 10.1039/B80129ON.

Withers, P. (2000). Mismatched? Why So Few Women Seem to be Taking Advantage of this Hi-Tech Usiness Bonanza. *Journal of Broadcasting and Business, 28* (10), 102-111.