Canadian Journal of Educational and Social Studies
Vol. 2(3), 2022, pp.50-64

An Investigation into Learners' Preference and Inhibitors of the Use of E-Learning Tools in Tertiary Institutions

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DOI: 10.53103/cjess.v2i3.38

Abstract

Several studies have examined the effectiveness of asynchronous and synchronous e-learning tools on students' learning but these studies did not investigate learners' preference and inhibitors of the use of a/synchronous e-learning tools. Learners in tertiary institutions make use of asynchronous and synchronous tools for both academic and non-academic purposes. It is therefore necessary to investigate the technological tools students prefer most, why they prefer them and constraints inhibiting them from using these technological tools. To actualize these aims, an empirical study of the descriptive research design of survey type was employed. A total sample of 300 respondents of Higher National Diploma from a polytechnic was randomly selected for the study. The findings showed that Skype, Video conferencing and Audio-conferencing are the most preferred synchronous e-learning tools while WhatAapp, Facebook, and YouTube are shown as the most preferred asynchronous e-learning tools. Respondents revealed that they prefer asynchronous e-learning tools because it helps students learn and interact with peers and lecturers who are in remote areas at their convenience. Also, they prefer synchronous e-learning tools because it fosters collaboration and real-life interaction among learners. Factors inhibiting the use of a/synchronous e-learning tools were discussed in the study. This study therefore gave some recommendations that could be useful for concerned stakeholders.

Keywords: Technological Tools, Asynchronous and Synchronous (A/Synchronous), Preference, Inhibitors, Tertiary

Introduction

The use of mobile-mediated communication could ameliorate some of the problems associated with students' learning in general. Ammanni and Aparanjani (2016) assert that learning is easier through mobile digital devices like smart phones, tablets, laptops, and iPods. Students and their mobile phones seem inseparable; they are easily distracted due to the multifarious activities done on their mobile phones. Enabled mobile phones with data plan are used for entertainment, information and academics. However, learners could harness and optimize the functions of their mobile phones for learning

process (Ajid et al., 2018).

Literature has revealed that ICT in the classrooms has a lot to offer both learners and teachers. Research on uses, challenges and issues on learning via ICT; benefits of using ICT in the classrooms; ICT and English language teaching and learning; ICTs as teaching/learning space for teachers have been investigated by Yunus, Lubis, and Lin 2009; Azmi 2017; Ntongieh 2016; Akele 2013, respectively. These studies concluded that ICT improves the effectiveness of learning and enhances the quality of comprehension and mastery of the target language. Through its a/synchronous capabilities, learners improve their vocabulary and enhance their listening, speaking, reading and writing skills (Tri & Nguyen, 2014). In today's virtual learning environment, the kind of learning and interaction that takes place is categorized as either synchronous or asynchronous (Guerrero, 2012; Hrastinski, 2008).

Synchronous Connections

The e-learning tools that harmonizes the presence of teachers, students and peers for collaboration, questioning, interaction, and communication with one another in rooms that are thousands of miles apart during the course of the lesson as if they were physically co-present in real-time are synchronous (Higley, 2013). Students are not detached from the teaching-learning process because it is a live-interactive activity where facial expressions and tones of voice give classrooms human face and feel. Synchronous e-learning helps to provide knowledge from resource persons without paying the accommodation and travel expenses; removes physical barriers of distance; efficient for timely delivery; gives room for immediate feedback, motivation and personal interaction; encourages team works and cooperation (Chauhan, 2017; Galhotra & Lowe, 2017; Karal & Turgut, 2011).

Although, Murphy, Rodríguez-Manzanares, and Barbour (2011) note that there are no geographic constraints; but there are temporal constraints. If not properly handled, it could be frustrating due to lack of technical know-how, dependence on a high speed internet connection, participants' local time barrier, problem of coordination of schedules, poor teacher/student relationship (Chauhan, 2017; Galhotra & Lowe, 2017; Karal & Turgut, 2011). Examples of synchronous modes are text-based (Instant messaging and Internet forums); Zoom, audio-based (telephone conversation and conference calls); video-based (Skype and Videoconferencing) and audio-video-based (Videoconferencing) (Raymond et al., 2016; Avent, Glista, & Goldblum 2008). Obasa, Eludire & Ajao (2013, p.5940) describe some of the synchronous tools as follows:

Synchronous Tool	Uses	Limitations
Video conferencing	Real time interaction that mimics conventional classroom	Expensive, quality dependent on bandwidth
Web conferencing	Permits sharing of presentation, documents and application demonstration	Expensive, quality dependent on bandwidth, and at times effective with audio conferencing
Audio conferencing	Collaborative discussions that involve certain number of people	May be expensive if international participants are expected
Chat	Text and graphics capabilities are available for information sharing of low-complexities	Mostly text based and as such slows down communication rate
Instant messaging	Instantaneous massage delivery such as important announcements	Requires some specific devices like handset.

Skype

Skype is software that permits subscribers to have conversation with, see and send instant message to other people who have Skype accounts wherever they are in the globe. Skype is a means to avoid expensive, traditional phone services and offer a fusion of free and extremely cheap phone options. Skype will not magically improve teaching and make lessons captivating or memorable, but skill and creativity of the user are required. Skype provides educators with substantial way to enable learners not only to have a look at other classrooms, countries and cultures, but also to make meaningful connections through collaboration and conversation. Skype lessons and activities can be recorded, filmed and shared with other learners and English experts irrespective of their different physical locations (Fraser, 2013). Hashemi and Azizinezhad (2011) assert that Skype can be used to provide various valid learning experiences to students.

Zoom Technology

Sayem et al. (2017) note that Zoom is a web based tool which enables collaboration between individuals and groups through video conferencing, video and audio calling, instant and persistent messaging, and file sharing. Zoom is a cloud based service which offers meetings and webinars content sharing and video conferencing capabilities. Zoom is the leader in modern enterprise video communications, with an easy, reliable cloud

platform for video and audio conferencing, collaboration, chat, and webinars across mobile devices, desktops, telephones and room systems. Zoom's features allow teachers and students to make use of screen sharing, annotate their shared screen; making lessons more interactive, record their lessons to the cloud or locally if these features are enabled (Guzacheva, 2020).

Asynchronous Connections

Asynchronous tools disallow students and teachers from asking questions and responding to questions in real-time. It is independent "anytime and anywhere" online discussions and learning techniques that cannot be circumvented by geography or time "in traditional on-campus or regular education, distance education and continuing education" (Shahabadi & Uplane, 2015, p. 132). Instead of waiting for a specific period of time, teaching and learning can be done without teachers or students available online at that moment of learning because information to be learnt is stored and forwarded to recipients to peruse at their leisure; students are given the autonomy to learning at their own pace. Asynchronous is "text and voice independent except when audio recordings are used. It is typically not visually dependent in that teachers and students cannot see each other unless recorded video or images are made available" (Murphy, Rodríguez-Manzanares & Barbour, 2011, p.584). Asynchronous learning eliminates distance and time barrier; fosters participants' critical thinking skills, gives access to information and online resources at one's convenience, encourages interaction and learning with peers at their own pace (Chauhan, 2017; Shahabadi & Uplane, 2015).

Asynchronous e-language learning helps ESL learners of diverse backgrounds write, revise and rewrite sentences till they are able to draw up syntactically and semantically correct sentences either through writing emails or posting discussion comments (Perveen, 2016). Asynchronous e-learning is not open to live collaboration and real time activities, does not give room for instant feedback, eliminates individual interaction among participants, fosters procrastination, disengagement and demotivation among participants, participant who lacks self-discipline could be easily distracted (Chauhan, 2017). Examples of asynchronous tools are text-based (Email, Chat groups and Facebook); audio- based (Voicemail and Podcasts); and video-based (YouTube, Facebook and Microsoft Live Video) (Avent, Glista, & Goldblum, 2008; Raymond et al., 2016). Obasa, Eludire & Ajao (2013, p.5940) describe some of the asynchronous tools as follows:

Asynchronous Tool	Uses	Limitations
Forums (Facebook, YouTube,)	Collaboration and sharing of ideas over certain time period	May take longer to arrive at decisions or conclusions
Web logs (Blogs)	Dissemination of ideas and comments	May take longer to arrive at decisions or conclusions
Messaging (e-mail)	Distribution of course materials on one-to-one or one-to-many basis	It is difficult to get instant reply to mails especially with large classes.
Streaming audio/video	Lecture delivery through playback	It is static and does not cater for interaction
Web site links (e-mail)	Directing users to additional resources and references	Movement of web resources may lead to non-availability of the resource.

Blogs

The motivational effect of ICT has accorded students an unparalleled opportunity to learn when compared with the traditional chalk and talk method. Realizing that motivation is a key factor for positive learning outcomes, 'people have to be very motivated to do something in order to succeed at it' (Mietti, Moura, & Faleiros, 2016, p.9). Through blogging, students could be motivated by sharing their lives experiences, topic of interest, ideas on matter of concern, academic problematic areas and areas of strengths through narrative, expressive and attractive imageries on social media like blogs. Besides being used an entertainment media, blogs could be used for educational purposes. Schmidt (2007, p. 1409) gives a vivid description of blog:

Weblogs, or ''blogs,'' are "frequently updated websites where content (text, pictures, sound files, etc.) is posted on a regular basis and displayed in reverse chronological order. Readers often have the option to comment on any individual posting, which is identified by a unique URL.''

Blogging in time past and this dispensation wears different looks. Krause (2005, p. 2) affirms that some time ago "blogs did not support comments, a feature that obviously increases dialogue between blog readers and writers" but now it does. He narrates that in an upper-level writing course that he routinely teaches, students are allowed to create their own blogs and equally use them to post responses to specific questions he asks about assigned readings and class activities. New features - like audioblogs, photoblogs, and subscription technologies like RSS, which feeds new posts to subscribers are emerging all the time, altering the very definition of "blog'. Blogging as a learning space through its feedback and sharing mechanism (Eady & Lockyer, 2013) has revamped students' writing skills by helping them with other means of writing apart from the notebook-and-pencil

version.

WhatsApp

WhatsApp, one of the mobile-mediated communications, can be used to bridge the gap between the need of EFL learners for more language exposure to interact with native speakers for successful language learning and the geographical distance of EFL settings (Almekhlafy & Alzubi, 2017, p.389). WhatsApp, which is the most popular instant messenger suitable for diverse devices and gadgets (Ani & Ali, 2016), was invented by Jan Koum and Brian Acton in 2009 and in 2013, it was used by 350 million people (Cohavi, 2013). Its users, over the years, have increased exponentially. WhatsApp, a proprietary, cross-platform, encrypted software installed smartphones application for mobile instant messaging, allows users using standard cellular mobile with pre-existing data plan to transmit and receive text, calls image, audio, video, document and location, links-based messages at no cost (Church & de Oliveira, 2013; Manan, 2017).

Bouknik and Deshen (2014) state that WhatsApp has technical benefits such as simple operation, low cost, availability, and immediacy; educational advantages, such as the creation of a pleasant environment and an in-depth acquaintance with fellow students; academic advantages such as the accessibility of learning materials, teacher availability, and the continuation of learning beyond class hours. The advantages of WhatsApp have made it relevant and suitable for classroom interaction. Recently, EFL learning institutions are interested in the use WhatsApp as an instructional tool in the development of students' language skills and motivation (Ani & Ali, 2016).

Statement of the Problem

Literature has shown the effectiveness of a/synchronous tools on students' learning (Obasa, Eludire, & Ajao 2013; Perveen 2016; Lee-Baldwin 2005; Chauhan 2017; Coogle & Floyd, 2015). Gary (2001) revealed the roles played by synchronous communication in fully distance education. It was shown that synchronous tools are better used for the social side of education while asynchronous tools are effective for academic aspects. Nadzrah, Hafizah and Afendi (2013) investigated and discovered that the use of asynchronous online discussion forum (AODF) could enhance learners' speaking and discussion skills. Ali, Mohammad and Ali (2017) focused on the impact of an asynchronous online discussion forum on the development of students' ability in and attitudes toward writing in English. Results indicated that students exposed to treatment improved significantly, both semantically and syntactically. It is discovered that these research has only dealt with effectiveness of a/synchronous tools on students' learning but has not investigated learners' preference and inhibitors of the use of a/synchronous e-learning tools. To achieve this aim, the following research questions were formulated to guide the study:

1. Which of the a/synchronous e-learning tools do students prefer?
2. What are the reasons for students' preference for a/synchronous e-learning tools?
3. What are the factors militating against the use of a/synchronous e-learning tools?

Methodology

The aim of the research was to investigate learners' preference and inhibitors of the use of synchronous and a/synchronous technology at a polytechnic. In order to achieve this investigation, the descriptive research design of survey type was employed.

Research Population and Sample

The population of the study was all the Higher National Diploma students of Rufus Giwa Polytechnic, Owo, Ondo-State, Nigeria. Using simple sampling random technique, a total sample of 300 respondents which comprised 165(55%) male and 135(45%) female in Higher National Diploma students were randomly selected from 3 schools namely School of Business Studies 105(35%), School of Engineering 102(34%) and School of Environmental Studies 93 (31%).

Research Instrument

In order to gather data about the respondents, quantitative data was obtained. The instrument was divided into 4 parts. Part A elicited demographic information of the respondents; Part B was a checklist prepared to investigate students' preference for a/synchronous e-learning tools; Part C contained structured interview questions on reasons for students' preference for a/synchronous e-learning tools. Part D contained a survey questionnaire with 16 close-ended questions of a Four-Point-Likert scale (Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) which investigated factors militating against the use of a/synchronous e-learning tools.

Validity, Reliability and Data Analysis

Specialists in the fields of ICT and Tests, Measurement and Evaluation validated face and content validity of the instrument. 120 Higher National Diploma students who were outside the sample were used to test for reliability. Reliability coefficient of 0.78 was obtained through the use of Pearson's Product Moment Correlation. The data was analyzed using descriptive statistics of frequency counts and percentages.

Results

The purpose of this study was to explore learners' preference and inhibitors of the

use of technology in tertiary institution and the results for this purpose are as follows:

Students' Preference for A/synchronous E-learning Tools

Table 1: Students' preference for a/synchronous e-learning tools

Synchronous	Response (%)	Asynchronous	Response (%)
Skype	167(55.6%)	WhatsApp	287 (95.7%)
Video conferencing	140(46.7%)	YouTube	220 (73.3%)
Audio-conferencing	100 (33.3%)	Blogs	86 (28.7%)
Instant Messaging	76 (25.3%)	Podcasting	44(14.7%)
Web-conferencing	13 (4.3%)	Telegram	38 (12.7%)
Ovoo	86 (28.7%)	Facebook	245 (81.7%)
Whiteboard	10(3.3%)	Instagram	87(29%)

In synchronous mode, the results in Table 1 indicated that respondents had high preference for Skype 167(55.6%), Video conferencing 140(46.7%), Audio-conferencing 100(33.3%), but low preference for Web-conferencing 13 (4.3%) and Whiteboard 10(3.3%). Also, in asynchronous learning mode, the respondents had high preference for Whatsapp 287 (95.7%) followed by Facebook 245 (81.7%) and YouTube 220 (73.3%) but low preference for Podcasting 44(14.7%) and Telegram 38 (12.7%).

Reasons for Students' Preference for a/Synchronous E-Learning Tools

Table 2: Elicited responses during an interview on reasons for students' preference for a/synchronous e-learning tools

Question	Comments by respondents
What are the reasons for students' preference for a/synchronous e-learning tools?	Asynchronous e-learning removes the problem of fixing only traditional lecture time with lecturers. Asynchronous e-learning reduces cost and it is easy to operate. Asynchronous e-learning helps students learn and interact with peers and lecturers who are in remote areas at their convenience. Asynchronous e-learning doesn't give room for instant feedback. If care is not taken, asynchronous e-learning gives room for distraction.
	i. Synchronous e-learning helps students learn at a fixed time. ii. Synchronous e-learning fosters collaboration and real-life interaction among learners. iii. Synchronous e-learning enhances face to face viewing and see other participants present. iv. Synchronous e-learning could be problematic owing to network and lack of technical know-how v. Synchronous e-learning is costly to operate.

Factors Militating Against the Use of A/Synchronous E-Learning Tools

Table 3: Factors militating against the use of a/synchronous e-learning tools

S/N	Items	Strongly Agree (%)	Agree (%)	Strongly Disagree (%)	Disagree (%)
1.	Lack of interest in using a/synchronous e-learning tools	183 (61%)	51 (17%)	31 (10.3%)	35 (11.7%)
2	Lack of awareness that synchronous e-learning tools can be used for learning	30 (10%)	49 (16.3%)	125 (41.7%)	96 (32%)
3	Lack of awareness that asynchronous e-learning tools can be used for learning	20 (6.7%)	15 (5%)	151 (50.3%)	114 (38%)
4	Poor quality of service of the Internet at home	96 (32%)	95 (31.7%)	55 (18.3%)	54 (18%)
5	Poor quality of service of the Internet on campus	56 (18.7%)	65 (21.7%)	94(31.3%)	85 (28.3%)
6	Poor self-motivation due to insufficient guidance on the use of a/synchronous e-learning tools for learning	88 (29.3%)	86 (28.7%)	62 (20.7%)	64 (21.3%)
7	Lecturers' inability to interact with students through e-learning tools	121 (40.3%)	99 (33%)	44 (14.7%)	36 (12%)
8	Poor viable policies for compulsion of ICT in classrooms	87 (29%)	98 (32.7%)	60 (20%)	55 (18.3%)
9	Disconnectedness of laboratories and language classrooms to the Internet	113 (37.7%)	96 (32%)	51 (17%)	40 (13.3%)
10	Lack of confidence in using e-learning tools	22 (7.3%)	32 (10.7%)	125 (41.7%)	121 (40.3%)
11	Lack of English proficiency	23 (7.7%)	13 (4.3%)	156 (52%)	108 (36%)
12	Inability to purchase smart phones	30 (10(%)	32 (10.7%)	118 (39.3%)	120 (40%)
13	Inability to purchase personal laptops	72 (24%)	76 (25.3%)	87 (29%)	65 (21.7%)
14	High running and subscription costs	101 (33.7%)	100 (33.3%)	59 (19.7%)	40 (13.3%)
15	Inadequate technical infrastructural facilities in the school	79 (26.3%)	90 (30%)	62 (20.7%)	69 (23%)
16	Epilectic power supply	100 (33.3%)	84 (28%)	57 (19%)	59 (19.7%)

Table 3 shows that majority of the respondents agreed that lack of interest in using the tools for learning 234(78%), lecturers' inability to interact with students through e-learning tools 220(73.3%), disconnectedness of laboratories and classrooms to the Internet 209(69.7%), poor self-motivation due to insufficient guidance on the use of a/synchronous e-learning 174(58%), high running and subscription costs 201(67%), and epilectic power supply 184(61.3%) are the major factors militating against the use of a/synchronous e-learning tools.

Discussion

Skype, Video conferencing and Audio-conferencing were mostly preferred as synchronous e-learning tools while the respondents had high preference for WhatsApp, Facebook, and YouTube in asynchronous learning mode. Tri and Nguyen (2014) supported this finding that most respondents were fond of checking and composing emails, checking Facebook, reading news on the Internet, and using chat applications with friends, downloading or listening to online music, and watching YouTube. However, Parenti (2013) reported that students' attainment of academic outcomes was enhanced by two synchronous tools, Class Time and Chat Pod, as well as one asynchronous tool, email. Asynchronous e-language learning helps learners of diverse backgrounds write, revise and rewrite sentences till they are able to draw up syntactically and semantically correct sentences either through writing emails or posting discussion comments (Perveen, 2016). Asynchronous e-learning is not open to live collaboration and real time activities, does not give room for instant feedback, eliminates individual interaction among participants, fosters procrastination, disengagement and demotivation among participants, participant who lacks self-discipline could be easily distracted (Chauhan, 2017).

The inhibitors of the use of a/synchronous e-learning tools are: lack of students' interest in using the tools for learning, inability of lecturers to interact with students through a/synchronous e-learning tools, disconnectedness of laboratories and classrooms to the Internet, poor self-motivation due to insufficient guidance on the use of a/synchronous e-learning tools for learning, high running and subscription costs, and epilectic power supply. Agbo (2015) notes that accessibility level, cost of ICT tools and students' attitude affect the use of ICT. This is in contrast with the study of Yunus, Lubis, and Lin (2009) who reported that lack of English proficiency was the basic challenge.

Conclusion

This paper discussed learners' preference and inhibitors of the use of technology in tertiary institution. The various synchronous e-learning tools such as Skype, Video conferencing and Audio-conferencing and asynchronous e-learning tools such as WhatsApp, Facebook, and YouTube are shown as preferred e-learning tools. Some of the inhibitors a/synchronous e-learning tools are lack of students' interest in using the tools for

learning, inability of their lecturers to interact with students through a/synchronous e-learning tools, disconnectedness of laboratories and classrooms to the Internet among others. It could be concluded that if learners' preference for these e-learning tools is considered and appropriately harnessed, and inhibitors ameliorated, it could enhance learners' optimal academic performance.

Limitations of the Study

This present study was constrained by some factors such as students' hesitancy to partake. Respondents were hesitant because they felt that divulging their preference and the various inhibitors of the use of a/synchronous e-learning modes could lead to vilification of their characters and their institution. Nevertheless, 300 interested respondents participated when they were assured of their confidentiality; they were informed that the study was neither to taint their characters nor the image of the institution but solely for research purpose.

Implication to Research and Practice

This paper has contributed to knowledge by adding to existing literature the use of e-learning tools in tertiary institution. The paper expounds on the need not to only focus on the effectiveness of a/synchronous tools on students' learning but also investigate learners' preference and inhibitors of the use of a/synchronous e-learning tools. With this, education stakeholders would be aware of the reasons why students prefer certain e-learning tools to others. The findings of this study would be useful to education stakeholders especially students in tertiary institutions and the government on the need to know the technological e-learning tools that students prefer, why they prefer them and constraints inhibiting them from using these technological tools. This would help government and concerned bodies to note the essence of employing these tools for classroom teaching and learning and help ameliorate the inhibitors faced by these students. Based on the findings and conclusion drawn from the study, it is recommended that:

1. constant and free access to electronic library and internet services should readily available on campus;
2. feasible policies on the use of interactive techniques of teaching through asynchronous and synchronous modes in lecture rooms should be made and implemented.
3. the inhibitors of the use of a/synchronous e-learning tools should be ameliorated.

References

Agbo, I. S. (2015). Factors influencing the use of information and communication

technology in teaching and learning computer studies in Ohaukwu Local Government Area of Ebonyi State, Nigeria. *Journal of Education and Practice*, 6(7), 71-86

Akele, F. E. (2013). Information and communication technology as teaching and learning space for teachers of English Language in schools. *Journal of Emerging Trends in Educational Research and Policy Studies*, 5(1), 100-107.

Ali, A. Mohammad, O., & Ali, M. F. (2017). Asynchronous online discussion forum: a key to enhancing students' writing ability and attitudes in Iran. *Iranian Journal of Applied Linguistics*, 20(2), 35-79.

Almekhlafy, S. S. A., & Alzubi, A. A. F. (2017). Mobile-mediated communication a tool for language exposure in EFL informal learning settings. *Arab World English Journal*, 8 (1).

Ammanni, S. & Aparanjani, U. (2016). The role of ICT in English language teaching and learning. *International Journal of Scientific & Engineering Research, 7*(7), 1-7.

Ani, S., & Ali, T. (2016). Techniques of optimizing WhatsApp as an instructional tool for teaching EFL writing in Indonesian senior high schools. *International Journal on Studies in English Language and Literature, 4*(10), 26-31.

Ajid, L., Reni R., Yunita, D. U., & Dwi, S. (2018). The use of WhatsApp in collaborative learning to improve English teaching and learning process. *International Journal of Research Studies in Educational Technology*, 7(1), 29-35.

Avent, J., Glista, S., & Goldblum, G. (2008). Linking people with aphasia and cognitive-communication disabilities using technology. Retrieved from https://www.asha.org/Events/ convention/ handouts/2008/1681_Avent_Jan

Azmi, N. (2017). The benefits of using ICT in the EFL classroom: From perceived utility to potential challenges. *Journal of Educational and Social Research*, 7(1), 111-118. https://doi.org/10.5901/jesr.2017.v7n1p111

Bouhnik, D., & Deshen, M. (2014). WhatsApp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research*, 13, 217-231.

Chauhan, V. (2017). Synchronous and asynchronous learning. *Imperial Journal of Interdisciplinary Research*, 3(2), 1345-1348.

Church, K., & de Oliveira, R. (2013). What's up with WhatsApp? Comparing mobile instant messaging behaviors with traditional SMS. In Proceedings of the 15th international conference on Human-computer interaction with mobile devices and services (pp. 352-361). New York: ACM. https://doi.org/10.1145/ 2493190.2493225

Cohavi, A. (2013). How did WhatsApp become the strongest social network? Calcalist. Retrieved from http://wwwcalcalist.co.il/local/articles/0,7340,L-3593840,00.html

Coogle, C., & Floyd, K. (2015). Synchronous and asynchronous learning environments of rural graduate early childhood special educators utilizing Wimba© and Ecampus. *MERLOT Journal of Online Learning and Teaching 11*(2), 173-187

Eady, M. J., & Lockyer, L. (2013). Tools for learning: Technology and teaching strategies', learning to teach in the primary school, Queensland University of

Technology, Australia. Retrieved February 22, 2019 from https://ro.uow.edu.au/cgi/viewcontent.cgi?referer=http%253A%252F%252Fwww.google.com%252Fsearch%253Fq%253Dblogs%2520for%2520for%2520teaching%2520and%2520learning%2520pdf&=&client=ms-opera-mini-android&=&=&channel=new&=&ei=8PhuXOGFNojasAeSh6QQ&=&start=10&=&sa=N&=&httpsredir=1&=&article=1413&=&contex t=asdpapers&=&Tools=&=&sei-redir=1

Fraser, J. (2013). How to get started with Skype in the classroom. Retrieved from https://www.virginiahistory.org/sites/default/files/uploads/Collections_Educator_Resources_Skype_getting-started.pdf

Galhotra, B., & Lowe, D. (2017). Analysing e-learning: An experience with synchronous tools. *International Journal of Engineering Technology, Management and Applied Sciences*, 5(6), 63-70.

Gary, M. (2001). The role of synchronous communication in fully distance education. *Australian Journal of Educational Technology*, 17(2), 131-149.

Guerrero, M. (2012). The use of Skype as a synchronous communication tool between foreign language college students and native speakers. *How*, 19, 33-47. Retrieved from: https://www.howjournalcolombia.org/index.php/how/article/view/36

Guzacheva N. (2020). Zoom technology as an effective tool for distance learning in teaching English to medical students. *Bulletin of Science and Practice*, 6(5), 457-460.

Hashemi, M., & Azizinezhad, M. (2011). The capabilities of Oovoo and Skype for language education. *Procedia - Social and Behavioral Sciences*, 28, 50-53.

Higley, M. (2013). Benefits of synchronous and asynchronous eLearning. Free e-learning industry. Retrieved from http://elerningindustry.com/benefits-of-synchronous-and-asynchronous-e-learning

Hrastinski, S. (2008). Asynchronous & synchronous e-learning. *Educause Quarterly 31*(4), 51-55.

Karal, H., Çebi, A., & Turgut, Y. (2011). Perceptions of students who take synchronous courses through video conferencing about distance education. *The Turkish Online Journal of Educational Technology*, 10(4), 276-293.

Krause, S. D. (2005). Blogs as a tool for teaching. *The Chronicle***,** 51(42), 1-3.

Lee-Baldwin, J. (2005). Asynchronous discussion forums: A closer look at the structure, focus and group dynamics that facilitate reflective thinking. *Contemporary Issues in Technology and Teacher Education*, 5(1), 93-115.

Manan, N. A. (2017). WhatsApp mobile tool in second language learning. *Indonesian EFL Journal*, 3(1), 87-92.

Mietti, B.P.; Moura, R.M.; Faleiros, M. H. V. (2016). Blogs as a tool in the teaching-learning process: Tumblr - a study case. *Revista Eletrônica de Letras (Online),* 1(9), 1-35.

Murphy, E., Rodríguez-Manzanares, M., & Barbour, M. (2011). Asynchronous and synchronous online teaching and learning in high school distance education: perspectives of Canadian high school distance education teachers. *British Journal of Educational Technology*, 42(4), 583-591. https://doi.org/10.1111/j.1467-8535.2010. 01112.x

Nadzrah, A., Hafizah, L., & Afendi, H. (2013). Enhancing ESL learners speaking skills through asynchronous online discussion forum. *Asian Social Science*, 9(9), 224-233. https://doi.org/10.5539/ass.v9n9p224

Ntongieh, N. (2016). ICT and English language teaching and learning in Cameroonian secondary schools. *Global Journal of Human-Social Science: Linguistics & Education*, 16(6), 26-34.

Obasa, A., Eludire, A., & Ajao, T. (2013). A comparative study of synchronous and asynchronous e-learning resources. *International Journal of Innovative Research in Science, Engineering and Technology*, 2(11), 5938-5946.

Parenti, M. (2013). Student perceptions of asynchronous and synchronous web based tools and perceived attainment of academic outcomes. *i-manager's Journal of Educational Technology*, 9(4), 8-14.

Perveen, A. (2016). Synchronous and asynchronous e-language learning: A case study of Virtual University of Pakistan. *Open Praxis*, 8(1), 21–39. http://dx.doi.org/10.5944/openpraxis.8.1.212

Raymond, E., Atsumbe, B., Okwori, R., & Jebba, M. (2016). Comparative effects of the synchronous and the asynchronous instructional approaches concerning the students' achievements and interests in Electrical Engineering at the Niger State College of Education. *IJEP*, 6(3), 4-9. http://dx.doi.org/10.3991/ijep.v6i3.5302

Sayem, A., Taylor, B., Mcclanachan, M., & Mumtahina, U. (2017). Effective use of zoom technology and instructional videos to improve engagement and success of distance students in Engineering. AAEE2017 Conference Manly, Sydney, Australia.

Schmidt, J. (2007). Blogging practices: An analytical framework. *Journal of Computer-Mediated Communication*, 12, 1409–1427.

Shahabadi, M., & Uplane, M. (2015). Synchronous and asynchronous e-learning styles and academic performance of e-learners. *Procedia - Social and Behavioral Sciences*, 176, 129-138. https://doi.org/10.1016/j.sbspro.2015.01.453

Tri, D., & Nguyen, N. (2014). An exploratory study of ICT use in English Language learning among EFL university students. *Teaching English with Technology*, 14(4), 32-46.

Yunus, M., Lubis, M., & Lin, C. (2009). Language learning via ICT: Uses, challenges and issues. *Wseas Transactions on Information Science and Applications*, *9*(6), 1453-1467.