



The Impact of Synchronous Online Teaching on Iraqi EFL Learners' Oral Comprehension

Salman Hintaw Abdulhussien^{*1}

University of Al-Ameed, Karbala, Iraq

Received: 2022/08/07

Accepted: 2022/11/26

Abstract: Today, technological applications provide language learners with many possibilities to improve their learning. Online learning environments create opportunities for more flexibility, interaction, and collaboration in a way different from face-to-face learning environments. This study attempted to investigate the effects of synchronous distance education on the oral comprehension of Iraqi English language learners. The participants were 19 Iraqi English as a foreign language (EFL) learners in a language institute in Karbala, Iraq. All learners were following the same language course at the B1 level. These learners were randomly divided into three groups: the face-to-face control group, the experimental group taught via the Adobe Connect platform, and the experimental group taught via the Skype application. The data were collected through pre- and post-oral proficiency tests. The findings showed significant differences in the improvement of oral comprehension among the three groups. Experimental groups scored significantly higher than the control group. Moreover, the results indicated that the Adobe Connect-based instruction had a better effect on the learners' oral comprehension in comparison to the Skype-based instruction. Concerning the performance of males and females in the experimental groups, the findings showed a significant difference between females and males in the Adobe Connect condition, with females showing more improvement. However, no significant difference was observed between males and females in the Skype group. The study stresses the mediation of virtual classrooms in enhancing EFL learners' learning achievements. Relevant pedagogical implications for classroom practice in EFL education are presented and discussed and some suggestions are made for future research.

Keywords: Synchronous Online English Teaching, Adobe Connect, Skype, EFL Learners, Iraq.

* Corresponding Author.

Authors' Email Address:

¹ Salman Hintaw Abdulhussien (hintaws@gmail.com)



Introduction

Technological advances have improved our ability to provide unique learning formats and have allowed new learning opportunities. According to Schwartzman (2007), currently, with many technological improvements available, students require more educational options for learning. In view of the potential advantages of technology in learning such as flexibility of scheduling, and saving time and money, a need for online learning has become unavoidable. In fact, there is a need for the development of alternative learning formats that will permit students to learn whenever necessary and in a cost-efficient manner. However, there are some concerns about online education including the loss of interpersonal contact inside the classroom. That is, it is considered unrewarding by some teachers and students that avoid its safe use (Bejerano, 2008).

A face-to-face classroom is an environment in which teachers and learners can physically gather around each other. In comparison, a virtual classroom is a kind of education done from a far distance that provides the simultaneous use of voice, image, and text for individuals. Such classes came into existence in the 1990s in the higher education field and then in other areas of education. Gradually, rapid improvements in technology could make it easier for all individuals to have access to this kind of education (Jezegou, 2012).

At the present time, along with the technology improvements, a new concept of education is available. Hence, it is urgent to know these changes and move toward the promotion of teaching and learning. What appears to be new in this context is the existence of different types of distance training. The field of language education has also taken advantage of this type of education greatly. In this regard, the researchers can examine the various aspects of virtual classrooms and their effects on improving the four language skills.

Distance education is available both synchronously and asynchronously (Snow, Pullen, & McAndrews, 2005). In asynchronous distance education, students watch existing course videos at any time they desire and there is no simultaneous interaction between students and the teacher. In synchronous distance education, students pass courses by seeing and hearing the teacher at a planned time and will enjoy the opportunity of simultaneous interaction among themselves (Schullo, Hilbelink, Venable, & Barron, 2007).

Synchronous distance education is not the same as the conventional classroom, but it is mostly similar to it. This type of distance education, according to Lynch (2002), can increase students' motivation, instant interaction and feedback, and personal improvement. Moreover, Synchronous Computer-Mediated Communication (SCMC) tools can be employed by instructors as a way to innovate and develop education (Canto & Ondarra, 2017).

Research on the qualitative value of distance education can be influential in understanding not only the electronic dimension but also the educational one. Examining the effects of information and communication technology (ICT) in the field of language teaching and learning is an issue that needs more investigation. In response to this need, the present study aimed to investigate distance education among Iraqi learners who learn English as a foreign language (EFL). It limited its investigation to the impacts of Adobe Connect and Skype software on improving the oral comprehension of EFL learners in Iraq. This study aimed to investigate the potential of Adobe Connect and Skype as two SCMC tools in improving Iraqi EFL learners' oral comprehension. The following two research questions have been posed in this study:

1. Are there any significant differences in oral comprehension among the three groups of the face-to-face classroom, the group being taught through Adobe Connect, and the group being taught via Skype?

2. Are there any significant differences in Iraqi EFL learners' improvement in oral comprehension with regard to their gender in Adobe Connect and Skype conditions?

Review of the Literature

Technology and Distance Education

In the 21st century, technology has revolutionized the way instructors are teaching and the way students are learning since it can improve the learning experience of students and enhance teaching practices (Glover, Hepplestone, Parkin, Roger, & Irwin, 2016; Rahman, Ramakrishnan, & Ngamassi, 2020). Technological tools have greatly affected technology integration into education (Sulaimani, Sarhandi, & Buledi, 2017). The emergence of new methods, strategies, and technological tools in the field of language education is the consequence of having access to various resources provided via the use of computers and the Internet (Taghizadeh & Hasani Yourdshahi, 2020).

Bédard and Raucent (2015) believe that the effectiveness of technology in education is dependent on conditions such as having a comprehensive view of it, accepting its advantages and disadvantages, and having strong support for its implementation. Dejean and Nissen (2013) have also examined the relationship between innovations in technology and education and stated that these advances can be influential in teaching languages, the role of the teacher, and the way he/she teaches.

There are many advantages for students learning through e-learning technologies. One of the most cited ones is the increased flexibility provided by the online learning environment and the learners' ability to be self-paced in their learning (Farrell, Cubit, Bobrowski, & Salmon, 2007; Hampton, Fachie, & Moser, 2017). In a study by Mitchell, Ryan, Carson, and McCann (2007), the students believed that learning in an online environment was deeper than learning in the usual classroom. Online courses also provide equal learning opportunities for individuals in remote locations (Carter & Heale, 2010; Wood, 2016). However, some negative points of online courses are increased levels of anxiety, insufficient technical support, and time wasted when computer systems do not work well (Creedy et al., 2007). Slow Internet speed and online connection glitches are other barriers to online learning (Bond, 2010; Deltsidou, Voltyraki, Mastrogiannis, & Noula, 2010).

Guichon (2012) has extensively written about the advent of technology into the realm of teaching and learning. He has emphasized changes in attitudes toward using ICT in teaching and learning and believes that the existence of technology in education is not limited to using CDs in face-to-face classrooms. In fact, ICT has presented a new dimension of the classroom since technology is considered an undeniable and necessary aspect of forming the virtual classroom.

Distance education, as Motamedi (2001) describes, is the delivery of course instructions in forms in which the instructor and learners are not in the same place. One of the primary forms of distance learning occurred through correspondence courses (Englehart, 2015). It is now generally defined as using different electronic methods of teaching to provide educational programs. The popularity of this type of learning is obvious, especially in higher education. In fact, since students are different from those 20 or 30 years ago, it is necessary for educators to support different modes of teaching and learning for these students.

In their investigation of virtual classrooms and online ones in Porto Rico, Toloöie-Lourdou and Torres (2009) stated that these classes could bring about a drastic reduction in time and cost. Moreover, they believed that in these classrooms, access to new facilities such as multimedia increased. In Toloöie-Lourdou and Torres's (2009) view, although many obstacles decrease the integration of technology into the educational field, attempts should be made to adjust language teaching to new technologies, exactly like an international language which is constantly changing and being conformed to new circumstances.

Beheshti (2009) investigated the features of virtual classrooms and distance learning and stated that equal opportunity for teaching and learning is the desire of individuals at the present

time and ICT has made access to this opportunity easier. Chanier and Vetter (2006) conducted a study on virtual education and online learning. They believed that the present progress of online synchronous platforms has created a new challenge for educational authorities and language teachers. In their view, this issue shows the urgency of examining new educational platforms and establishing relationships between the teacher and language learners. In one part of their study, these researchers clarified the relationship between the language learners and the teacher, and in another section, they defined some concepts such as platform, media, and their written and phonetic manifestations (using a microphone and keyboard in the platform).

Ciekanski (2014), who investigated the performance of language teachers in the virtual classroom, stated that two different roles, supervisor and educational advisor, are generally defined for a language teacher. In his view, along with changes in the educational field, adjustments should be made to the roles of the teachers and the activities they do. Following Ciekanski's (2014) research, Muller (2015) referred to the appropriate behavior of the teacher as an educational supervisor and his/her performance in online interactions with students. In his study, he tried to come to a correct analysis of teachers' positions by investigating the students' attitudes toward the educational supervisor.

By reviewing the literature on virtual education, it could be inferred that such research is divided into two categories: studies that are basic research and deal with virtual education and its different types and those that examine the role of the teacher and language learner in virtual classrooms.

Types of Distance Education

Vaufrey (2014) classified distance education into three general groups of online courses closed, open online courses, and learning resources. Online courses closed which include online synchronous learning divided into three classifications. In the first group, the learners have virtual contact with each other and the teacher. In the second group, the learners have face-to-face communication with each other and virtual contact with the teacher because the teacher is not in the same place. In the final classification, the teacher has face-to-face contact with some learners in one place and this group has virtual communication with another group of learners present in another place. The open online course is asynchronous communication whereby offline educational courses are held. Learning resources include educational sources such as movies and online resources. What was mentioned above can be summarized in Figure 1.

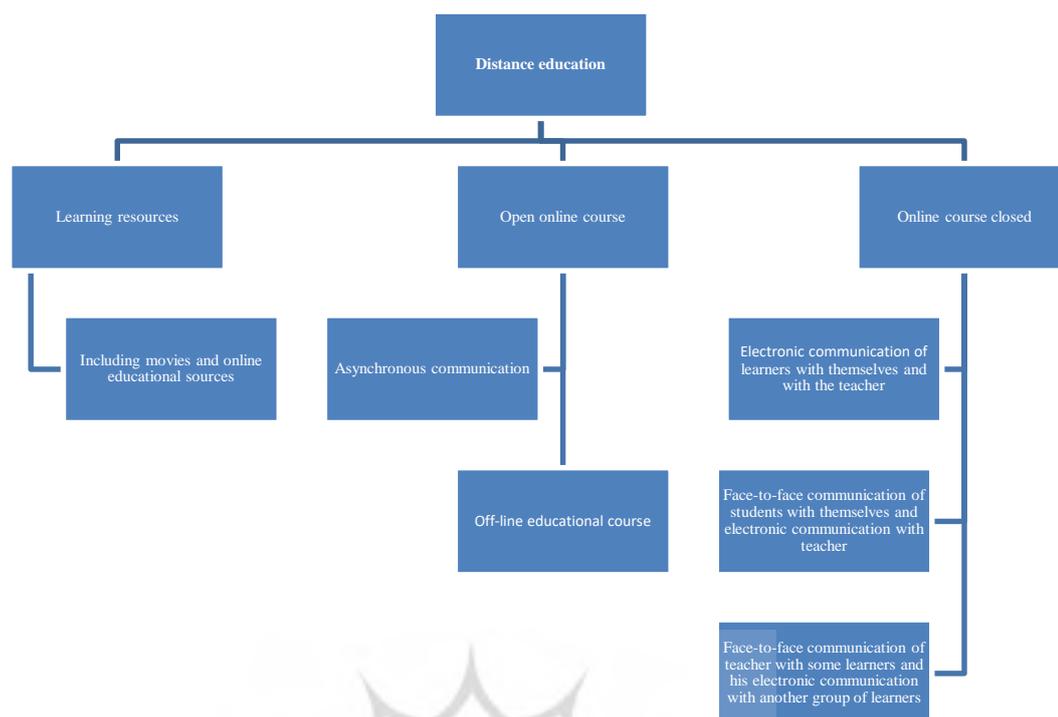


Figure 1. *Types of Distance Education*

The online virtual classroom is not a kind of distance education in which the learners have access to only multimedia materials. In such classes, the language learners have direct online communication with the teacher and other learners. The virtual classroom is not a network of two or more classes in which the teachers and learners communicate and participate. For example, Webinar is not a classroom. It is a virtual seminar and the learners can take advantage of the presence of the teacher and be taught just in one session.

Due to its technological merits, a synchronous virtual classroom is advantageous in language teaching. It contains three basic features: the simultaneous presence of the teacher and learners in one platform, displaying the available users, and using educational content online. These features make this kind of classroom similar to a face-to-face class. However, in comparison to face-to-face classrooms, virtual classrooms can also save time and decrease the cost of commute.

Technological and Educational Aspects of Virtual Courses

Technology has an important role in the simultaneous communication of language learners and teachers. As Chanier and Vetter (2006) state, various ways of interaction in the virtual space,

including text writing, chatting, sending photos and images, and numerous contents lead to simultaneous chatting and interaction among learners themselves and with the teacher, which are significant resources of learning. Hence, it can be said that interaction channels in these classrooms can be categorized into two classes of 'verbal communication' and 'nonverbal communication'. For each category, different facilities available on the platform including audio communication, visual communication, and written communication can be employed.

In the world of technology, a platform is an operating system through which a collection of programs and software are supported and implemented. Adobe Connect platform provides the possibility of holding synchronous classrooms and simulating a real face-to-face class. However, the Skype application is not necessarily an educational program and has come into existence for verbal and visual communication. Synchronous communication is an important feature of teaching via these programs. Verbal interaction is an issue that is taken into consideration when synchronous communication and simulation of a face-to-face classroom are talked about. Therefore, facilities such as microphones and internet connection are points of significance that must be handled by technological managers prior to holding the classroom in the platform.

In synchronous virtual classrooms, the language competence of language learners can become evident in a different way. As Chanier and Vetter (2006) argue, the majority of learners prefer writing and using tools such as a keyboard to sending their voice via microphone. In a virtual classroom, some learners are afraid of sending their voices or are not willing to use the microphone and are more interested in writing. To remove this fear and unwillingness on the part of learners and encourage them to use the potential of voice, the technological managers can hold some convincing sessions and prepare the learners for participating in an online class, or they can point out the necessity of utilizing the microphone in the advertisements.

In the previous part, the researcher explained the facilities of a synchronous virtual classroom for simulating the face-to-face classroom. As mentioned previously, the two dimensions of ICT and education have formed distance education. In other words, if the role of one of these two items becomes less significant or more significant, the nature of the virtual classroom will change. In a synchronous virtual classroom, technology and education are equally important and can directly affect holding distance education. As an example, in online education, the method of teaching and the teacher's performance have influential roles in the learners' learning and if the activities in this classroom are not consistent with the type of class, there will be no effective communication among the three points of education triangle, i.e. teacher, language learner, and content. The level of

teachers' familiarity with technological facilities in education guarantees the quality of the classroom. As an example, if using the microphone is necessary in the process of teaching and learning, the learners have to use it effectively.

Adobe Connect and Skype

In the previous section, we tried to clarify the role of technology and education in the new context of teaching and learning. We explained that the new educational environment, which is the result of ICT, requires professional teachers and learners in the field of technology. That is, individuals who can adapt their teaching and learning to this new context and obtain the best consequences from it. In what follows, we will introduce the platforms of Adobe Connect and Skype and their features.

Adobe Connect is considered to be a strong platform in the world. It is used for holding sessions, online conferences, Webinars, and electronic education in virtual classrooms. This platform was designed to bring fast, easy, and inexpensive communication. It provides an interactive environment for the teacher and learners to discuss and debate issues via the internet and intranet.

In many countries, much attention has been paid to utilizing Adobe Connect. Using this platform is not limited just to universities. There are some centers that are pioneers in virtual education. They extensively use some platforms and applications in the fields of education and industry. There are also universities in Iraq that have been employing Adobe Connect for academic gatherings for more than 10 years.

As the Adobe Connect platform is not free of charge, many language centers in Iraq utilize Skype for the purpose of distance education. The potential aim of this program is not distance education. However, due to its potential for creating multimedia data, it can be employed for such a purpose. In the following paragraphs, some features of the Adobe Connect platform and Skype application are presented.

Some important characteristics of the Adobe Connect platform are sending and receiving voice, image, and text, the possibility of getting connected even with the slowest speed of internet from home or office to the relevant session, getting connected to voice over internet protocol (VOIP), connecting guests who cannot be online via telephone, having supporting tools in advanced white board and being able to write on it, showing different files including SWF, PPT, JPG, PDF, etc., desktop sharing with all users, voting and demonstrating the results in charts and graphs, creating levels and having more control in comparison to video

conferencing, locking the session and preventing the entrance of unfamiliar users to the session, recording the sessions and use them off-line, customizing the settings of the class, allowing the users to remotely control the desktop, seeing the name of the present users in the portal of the video conference, receiving the recorded contents, being able to ask and answer questions in private and public, being able to register in a group in online sessions via Excel file, sharing videos and receiving audio files, sending private messages from the manger to users and vice versa, and also participating in web conferences through tablet.

Skype is a communication platform for learning activities. It is a free and usable application which can make users able to have phone conversations and video contact with each other. Indeed, Skype receives much attention as a social networking service application for interpersonal communication. In this software, the possibility of instantaneous transmission of messages, files, video conferences, and audio posts has been provided. In Iraq, Skype has been used since 2015 for distance education in language classrooms and some institutes. These classrooms are held based on blended learning (both face-to-face and online) or completely online.

Saving time and cost, the possibility of having classes in other cities and even countries, the flexibility of the class time for the sake of the learners, sharing and showing pamphlets as PDF, PowerPoint, and educational video files are among the features of Skype.

From what was said above, it can be said that the main purpose of Adobe Connect is education, and it aims to provide a context for synchronous communication. However, Skype whose main purpose is visual contact makes it possible for individuals to share educational information in addition to everyday conversations.

In this study, we aimed to investigate the possible improvement of oral comprehension among Iraqi EFL learners through Adobe Connect and Skype. Language comprehension is the ability of using cognitive processes that help the language learner understand the text he/she hears or reads (Cuq, 2003). Gaining oral comprehension ability is one of the most difficult skills in language learning (Cuq & Gruca, 2002). Examining oral comprehension improvement cannot be done fast. In fact, it needs constant control.

The literature has generally indicated that SCMC tools have positive impacts on language learning (Lin, 2014; Zhao, 2003; Ziegler, 2016). Several studies have shown the effects of Adobe Connect and Skype on language education. As an example, Yen, Hou, and Chang (2013) conducted a study on Skype with 42 students in an English conversation course. These researchers paid attention to the students' errors in speaking during a role-play Skype-based activity. The results showed that the use of Skype and role-playing strategies enhanced the

students' speaking and listening abilities. In another study, Salomonsson (2020) worked on online education via Adobe Connect and focused specifically on how learners modify their output when they communicate with their peers. The study considered verbal language. The conversations were from an online German language course at a Swedish university. The task designed for the learners was to speak German for about 30 minutes. The recordings were made using Adobe Connect. Although this study did not intend to evaluate the advantages and disadvantages of online courses in Adobe Connect, it generally showed that an L2 online classroom via Adobe Connect can facilitate learning.

Although there are some studies directed toward using Adobe Connect and Skype in education, they have usually dealt with the attitudes of students or teachers toward using them (e.g. Ditzel & Wheeler, 2017; Englehart, 2015; Milojković, 2019), not the impacts of these platforms on the learners' improvement in learning. Moreover, no previous study has compared the instructional effects of Adobe Connect and Skype simultaneously on EFL learners, especially in Iraq. Hence, this issue has remained mostly uninvestigated.

Considering the point that at the present time technology integration is a necessity in education, investigating how programs such as Adobe Connect or Skype can lead to improvement in learning is an issue worthy of attention. In response to this requirement, the current study was an attempt to compare the impacts of Adobe Connect and Skype on Iraqi English language learners' oral comprehension. One other unique point of the present study is that it will consider differences in improvement, if any, between males and females in the groups taught via Adobe Connect and Skype.

Methodology

This study followed an experimental design. In the following section, the participants, instruments, and data collection procedure and analysis are explained.

Participants

There were 19 participants (ten females and eight males) in this study. Having no access to more participants made the sample size small. The participants were homogenous in language proficiency and were at the B1 level based on the CEFR classification. They were randomly selected from a language institute in Karbala, Iraq, which had previously classified the learners registered in the institute into levels based on their scores on a language proficiency test given to them. The participants were divided into three groups. Experimental group one (EXP1)

included six EFL learners taught via Adobe Connect, Experimental group two (EXP2) consisted of six learners learning English through Skype, and the control group (Cont), included seven learners attending the classroom face-to-face.

All three groups were taught by one teacher and the textbook used for these learners was *Developing Tactics for Listening*, third edition, written by Richards and Trew (2003). In other words, the only difference among these groups was the platform of instruction. The classes for all three groups were held twice a week and lasted 90 minutes. Generally, 24 sessions were held for each group. It should be pointed out that in all three groups, the teacher focused just on the activities available in the textbook to improve the learners' oral comprehension and no other activity was considered for this purpose.

Table 1 presents the descriptive statistics for the participants' age. According to this table, the mean age is 20.4, 24.6, and 23.7 in the control group, the EXP1 group, and the EXP2 group, respectively.

Table 1. Descriptive Statistics of the Participants' Age

Group	Mean (age)	Std. Deviation
Cont.	20.4	4.82
EXP1	24.6	1.92
EXP2	23.7	3.11

As Table 2 demonstrates, there are more female participants in the control group (4 female and 3 male). This table also shows that the number of male and female subjects in the EXP1 and EXP2 groups is equal (3 females and 3 males).

Table 2. Descriptive Statistics of the Participants' Gender

Gender	Cont.		EXP1		EXP2	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Female	4	57	3	50	3	50
Male	3	43	3	50	3	50
Total	7	100	6	100	6	100

The reason for the small number of the participants was that the researcher aimed to have a similar number of participants in each group to reduce the effect of any intervening variable. There were few language institutes providing Adobe Connect and Skype platforms at the

time of conducting the study since they preferred to teach in a regular face-to-face classroom. Although Skype software is available free for all individuals and there is no rule concerning using it or asking for any official permission for teaching through it, the Adobe Connect platform is expensive and many language institutes cannot afford to buy it.

Data Collection Instruments

To have a homogeneous group, Oxford Placement Test (OPT) was used for selecting EFL learners at the intermediate level of language proficiency.

The questions in the pre-test and post-test of oral comprehension were selected from Cambridge Preliminary English Test (PET, 2014), which is an English language examination provided by Cambridge English Language Assessment. The listening section of this test contains 25 questions in four different parts. The researcher chose this test since it fits the participants' level of proficiency best. The time limit for answering this test was 35 minutes. To be strict in scoring, the participants were notified of this point that a negative point is considered for each wrong answer and that a correct answer is deleted per three wrong answers.

For the online classrooms, the same tests used for the face-to-face class were uploaded and the audio files were implemented based on the permissible times to listen. At the end of the time of test, the participants sent the answers to the items to the teacher via Adobe Connect and Skype.

Data Collection Procedure and Analysis

The present study was conducted in the Fall semester of 2019 in a private language institute in Karbala, Iraq. In the second session, all the participants took a similar test as the pre-test. Then, the treatment began. None of the course content was different. In fact, the delivery mode was the only difference among the groups.

In the face-to-face classroom, it was not possible for the learners to record what was taught. The necessary instructions were given to the subjects in EXP1 and EXP2 groups through email. These instructions were provided as MP4 and PDF files. At the end of the semester (session 24), a similar post-test was given to all the subjects.

For statistical analyses, the Statistical Package for Social Sciences (SPSS version 22) was used to input the data. The data were analyzed via ANCOVA (analysis of covariance) after testing the normality of distribution and homogeneity of variances.

Results

In this section, the statistical results of the study are presented. To investigate which group in this study outperformed, the following three hypotheses were tested:

H01: Employing audio files in Adobe Connect is not more effective than that in the face-to-face classroom in improving EFL learners' oral comprehension.

H02: Employing audio files in Skype software is not more effective than that in the face-to-face classroom in improving EFL learners' oral comprehension.

H03: Employing audio files in Adobe Connect is not more effective than Skype in improving EFL learners' oral comprehension.

H04: There is no statistically significant difference between male and female participants and their oral comprehension improvement in the EXP1 group.

H05: There is no statistically significant difference between male and female participants and their oral comprehension improvement in the EXP2 group.

Comparison of Three Groups in terms of Oral Comprehension

Table 3 demonstrates the mean scores of pre-and post-tests in the three groups. As the results of this table indicate, oral comprehension has improved in all three groups. This is quite normal since the learners have been learning English from the pre-test to the post-test.

Table 3. Means Scores of Pre-and Post-tests of the Participants

Groups	Mean \pm Std. deviation	
	Pre-test	Post-test
Cont. group	6.94 \pm 1.63	12.59 \pm 2.52
EXP1 group	7.29 \pm 0.69	17.41 \pm 1.29
EXP2 group	6.91 \pm 0.89	14.79 \pm 0.68

Through statistical tests, we should examine if the differences from the pre-test to the post-test are significant or not. To this end, ANCOVA (analysis of covariance) was used since the classes were different and pre-test scores in these classes were also different, so this test was used to control for the initial differences among the three groups.

In this study, we did not have a large number of participants in each group; hence, before running ANCOVA, the hypothesis of the normality of the data was tested via the Shapiro-Wilk test. The level of significance in all three groups was more than 0.05 (Cont group: $W=0.935$,

sig=0.492; EXP1 group: $W=0.994$, sig= 0.973; and EXP2 group: $W=0.896$, sig=0.407); therefore, the hypothesis of the normality was confirmed. Moreover, the level of significance for the homogeneity of variances was more than 0.05 ($F=2.29$, sig=0.137). So, the hypothesis of the homogeneity of variances is confirmed.

To test the first null hypothesis of the study, ANCOVA was run. Table 4 presents the results of comparing EXP1 and Cont. groups.

Table 4. ANCOVA Results of Comparing EXP1 Group and Cont. Group

variable	Sum of squares	df.	Mean of squares	F statistic	Level of significance
Within-group effect	44.892	1	44.892	41.069	0.005
Between-group effect	53.241	1	53.241	48.708	0.0001
error	12.028	11	1.097		0.0001

As Table 4 indicates, the within-group effect is significant since the level of significance (0.005) is less than 0.05. The level of significance for the between-group effect, which shows the effect of the independent variable, is significant since it is 0.0001 (< 0.05). In other words, after controlling for the pre-test effect, a significant difference was seen between the post-test mean scores of the EXP1 group and the Cont. group. Hence, the first null hypothesis is rejected and it can be concluded that EXP1 outperformed Cont. group since the post-test scores of the first group is higher than the latter one.

To test the second hypothesis, another ANCOVA test was run. Table 5 shows the results of this test.

Table 5. ANCOVA Results of Comparing EXP2 Group and Cont. Group

variable	Sum of squares	df.	Mean of squares	F statistic	Level of significance
Within-group effect	39.241	1	39.241	31.472	0.0001
Between-group effect	12.678	1	12.678	10.176	0.009
error	13.708	11	1.250		

According to Table 5, the within-group effect is significant since the level of significance is 0.0001 (<0.05). The level of significance for the between-group effect, which shows the effect of the independent variable, is significant since it is 0.009 (<0.05). Therefore, after controlling for the effect of the pre-test, we can see a significant difference in the mean of post-test scores between the EXP2 group and the Cont. Group. It can be said that the second null hypothesis is rejected since oral comprehension of the EFL learners in the EXP2 group improved more than those in the Cont. group, hence the first group outperformed the latter one.

To test the third null hypothesis of the study, another ANCOVA test was run. Table 6 demonstrates the results of comparing scores in EXP1 and EXP2.

Table 6. ANCOVA Results of Comparing EXP1 Group and EXP2 Group

variable	Sum of squares	df.	Mean of squares	F statistic	Level of significance
Within-group effect	4.095	1	4.095	11.081	0.021
Between-group effect	9.082	1	9.082	24.584	0.004
error	1.851	5	0.373		

As the results in Table 6 indicate, the within-group effect is significant since the level of significance is 0.021 which is less than 0.05. The level of significance for the between-group effect is 0.004 (<0.05). That is, a significant difference in mean post-test scores was observed between EXP1 and EXP2 after controlling for the pre-test effect. Thus, the third null hypothesis is rejected and it can be concluded that there is a significant difference between those using Adobe Connect and those employing Skype to improve their oral comprehension. The participants in EXP1 outperformed those in EXP2 since the mean of their post-test scores is higher. It seems that Adobe Connect was more effective than Skype in improving the EFL learners' oral comprehension.

Gender and Adobe Connect

In order to test the fourth null hypothesis, a t-test was run to compare the scores attained by the male and female participants and to determine which gender oral comprehension improved more in the EXP1 group. Table 7 demonstrates the descriptive statistics (including the frequency of the participants, mean, and standard deviation) for this section.

Table 7. Descriptive Statistics for Male and Female Participants in the EXP1 Group

Gender	Frequency	Mean	Std. Deviation
Male	3	17.41	0.52
Female	3	19.83	0.28

The results in Table 7 show that the mean for the female participants was greater than the mean of the male ones (male= 17.41, and female= 19.83). However, an independent *t*-test was run to ensure the difference was significant. The results of the means comparison are displayed in Table 8.

Table 8. Independent Samples T-test for Gender in EXP1 Group

Levene's Test for Equality of Variances									
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.565	0.279	-7.034	4	0.002	-2.41667	0.34359	-3.37063	-1.46270
Equal variances not assumed			-7.034	3.124	0.005	-2.41667	0.34359	-3.48592	-1.34741

As the results in Table 8 demonstrate, $t(4) = -7.034, p < 0.05$. This result indicated that there was a significant difference between the oral comprehension post-test scores of males and females in the EXP1 group. Therefore, the fourth null hypothesis is rejected and it is concluded that male and female EFL learners in the Adobe Connect condition were different in their oral comprehension improvement. There are various reasons why Iraqi male and female EFL learners are statistically different in their improvement in oral comprehension, and further in-depth mixed-methods studies are needed to focus specifically on the why of this issue.

Gender and Skype

In order to test the fifth null hypothesis, another *t*-test was run to compare the scores of the male and female participants and to determine which gender showed more improvement in oral comprehension in the EXP2 group. Table 9 demonstrates the descriptive statistics for this section.

Table 9. Descriptive Statistics for Male and Female Participants in the EXP2 group

Gender	Frequency	Mean	Std. Deviation
Male	3	15.66	0.28
Female	3	15.33	0.52

The results in Table 9 show that the mean for the female participants was greater than the mean of the male ones (male= 15.66, and female= 15.33). However, to make sure this difference in means was significant an independent, *t*-test was run. The results of the *t*-test are presented in Table 10.

Table 10. Independent Samples T-test for Gender in EXP2 Group

<i>Levene's Test for Equality of Variances</i>									
	F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.565	0.279	0.970	4	0.387	0.33333	0.34359	-0.62063	1.28730
Equal variances not assumed			0.970	3.124	0.401	0.33333	0.34359	-0.73592	1.40259

Table 10 shows that $t(4) = 0.970$, $p > .05$. This finding indicates that the fifth null hypothesis is supported. It was concluded that there was not a significant difference in oral comprehension improvement between the male and female participants in the EXP2 group. This insignificant difference can be justified by the point that all male and female participants had already used Skype in their everyday conversations and both of them were familiar with it.

Discussion

Synchronous distance education is a rather recent achievement of ICT in the field of education, especially in foreign language education. Simultaneous visual and verbal communication between the teacher and students and being able to take advantage of prepared materials for this educational context can visualize the face-to-face environment for them. On the other hand, the process of teaching and learning happens in the virtual environment and this can save time and expenses.

The comparison of scores on pre- and post-tests across the three groups shows that in the face-to-face control condition, the increase in EFL learners' oral comprehension is significantly less than that in either the Adobe Connect or Skype environment. The results showed that both Adobe Connect and Skype could improve the participants' oral comprehension. However, Adobe Connect was more effective in this regard, providing a valuable environment in foreign language teaching courses. Moreover, there was a gender-based pattern in the EXP1 group taught through Adobe Connect in that the female participants showed more improvement in oral comprehension in comparison to the male participants. In the EXP2 group, no significant difference was observed between the males and females concerning their oral comprehension improvement via Skype.

The findings of the present study are consistent with those of the previous research (e.g. Loewen & Wolff, 2016; Moladoust, 2013; Salomonsson, 2020; Yen et al., 2013) in that they also indicated the positive effects of SCMC tools on language learning. Although the focus of these studies was different, they were very helpful and served as guides for this study.

In face-to-face classrooms, the teacher's posture, and his/her body language in general, play significant roles since language learners pay attention to these movements and process them; hence, their comprehension is facilitated through both visual and verbal cues. In contrast, in online classrooms, language learners have to rely more on verbal channels since they can understand what the teacher says mostly through listening. It can be argued that the language learners learning in online classrooms are confused less when they listen to audio files and their ability to listen turns into a facilitator in oral comprehension.

The facilities that any electronic platform provides can be influential in their users' interactive and individual activities. An environment like Adobe Connect that contains the requirements of a real classroom can mirror a real classroom since the students enjoy potentialities such as being able to ask for permission to talk in the class, the possibility of being present or absent in the class, having visual and verbal communication, being able to use some features like the whiteboard to write on, and so on. Thus, the users can use the different advantages of this platform in their attempt to enjoy the highest level of educational benefits in the process of teaching and learning. When learners enter this educational platform, they can use it just for the sake of educational purposes and are not distracted by an irrelevant message from their classmates (something which may occur in Skype). This can help the learners to completely focus on the educational content of the classroom. The platforms do not require any social network to follow educational goals.

An important advantage of virtual courses is the possibility of recording the session completely in audio or visual forms. Although in face-to-face classrooms, the language learners sometimes record the session, this is not possible in all classrooms. In the Adobe Connect platform, this potentiality is automatically available for the users but Skype does not present it. This feature is so important that the authorities of educational centers have used other programs like MP3 Skype Recorder to record the sessions in Skype and language learners can listen to the contents endlessly. In the Adobe Connect platform, users can record the session visually. In visual files, the language learners see the image of the teacher on the right side. In Skype, visual recording is not possible and written files are separately sent for the learners while they are speaking and discussing.

Adobe Connect platform is rather expensive, but the main point about this platform is that it enjoys more variety and useful features for teaching and learning in comparison to Skype. This perk has provoked Skype programmers to make it more practical for education and scientific negotiations. This has led to the new generation of Skype for business.

Although the present study can be considered the first research of this type conducted in Iraq, it suffers from some shortcomings, the most important of which was the small number of participants. In the present research, there were only 19 participants. It is recommended that other researchers repeat the study with a larger number of participants and report more generalizable results. In addition, this study did not investigate the effects of the EFL learners' age and language proficiency on oral comprehension improvement. Future researchers can consider these two variables, or other demographic features, and compare the extent of improvement in oral comprehension between different language proficiency levels and different age groups. Furthermore, future research should investigate the long-term effects. Moreover, this study focused on short-term improvements. Future researchers can also examine other language skills such as speaking and reading and track their improvement over time. They can also compare the improvement of two or three language skills in Adobe Connect and Skype.

It should also be mentioned that in the present study, six of the participants were familiar with the French language too and this point may have influenced the findings. Based on cross-linguistic studies (Lindqvist, 2006), the level of languages available in the language learners' interlanguage, i.e. their mother tongue and any other language they are familiar with, can play a role in learning a foreign language. This issue should be considered in future research. Moreover, in this study, the learners in online groups appeared to be more motivated and

interested to participate in learning. However, this study did not use a questionnaire or other data collection instruments such as interviews to examine their attitudes. Investigating teachers' and language learners' attitudes toward using Adobe Connect and Skype in English language classrooms are issues worthy of consideration in future studies since it is important to examine their benefits, challenges, and what should be done to improve teaching and learning when using these platforms.

Conclusion

The issue of integrating Adobe Connect and Skype into the field of foreign language education is new. "Teacher educators continually strive for college classroom teaching techniques that are effective and dynamic" (Wursta, Brown-DuPaul, & Segatti, 2004). Using an L2 online class can facilitate learning (Salomonsson, 2020). The use of SCMC tools like Adobe Connect for holding online class meetings is one technique that can provide an appropriate form for course delivery and this is valuable for teachers and learners.

Many educational centers in Iraq have not been defined based on distance education. Nowadays, due to the technological improvements in all fields including language education, it is urgent to welcome these changes. In fact, in some contexts, distance education should not be viewed as a supplementary part of the classroom but it must be regarded as a real educational context that can be as influential as a face-to-face classroom.

Many educators are highly skeptical about the usefulness of online education. They are doubtful whether it is as effective as conventional face-to-face teaching. Some instructors also consider digital technology to be challenging and impersonal (Paechter & Maier, 2010). The agents of the classroom (the teacher and language learners) need to be trained in how to do their jobs in this educational context. A teacher who acts well in a face-to-face classroom is not necessarily successful in teaching via Adobe Connect and Skype. In fact, if he/she does not have enough information about virtual classrooms or has not passed the necessary workshops, he cannot act as well as in a face-to-face classroom.

In distance education, new agents, tools, methods, and special content are required. Hence, to be successful in this context, having an interactive environment is necessary. An advantage of distance education, in comparison to face-to-face classrooms, is that it can lead to an interactive environment for all language learners. Even shy students who do not usually talk in a face-to-face classroom can be active like other members in this context.

The teacher's proficiency in distance education and electronic classroom and different facilities, and his/her way of teaching is influential in the success of a virtual classroom. Of course, the language learners' familiarity with distance education and technological equipment should not be ignored. Falloon (2011) argues that students consider the online classroom as a totally new environment since it includes new ways to interact and new rules and procedures to learn. Time and experience can help learners in this new context (Englehart, 2015). In closing, it should be stated that "a successful online learning environment will not just happen. It needs to be built, managed, and nurtured" (Reushle, 2006, p. 5).

References

- Bédard, D., & Raucant, B. (2015). Pedagogical innovations in higher education: Active pedagogies in face-to-face and distance learning. *International Journal of Higher Education Pedagogy*, 31(1), 1-3. Retrieved from <http://ripes.revues.org/898> [in French].
- Beheshti, Z. (2009). Evaluating the role of e-learning in solving traditional education problems and use it to publicize education in Iran. *Second e-Learning Conference*, Tehran, Iran. Retrieved from http://www.civilica.com/Paper/ELEARNING02ELEARNING02_006.html [in Persian].
- Bejerano, A. R. (2008). The genesis and evolution of online degree programs: Who are they for and what have we lost along the way?. *Communication Education*, 57(3), 408-414.
- Bond, C. S. (2010). Surfing or still drowning? Student nurses' Internet skills. *Nurse Education Today*, 30(5), 485-488.
- Canto, S., & Ondarra, K. J. (2017). Language learning effects through the integration of synchronous online communication: The case of video communication and second life. *Journal of Language Learning in Higher Education*, 7(1), 21-53
- Carter, L. M., & Heale, R. (2010). Teaching undergraduate nursing courses via videoconference: All that glitters is not gold. *International Journal of E-Learning & Distance Education (Online)*, 24(2), 109-116.
- Chanier, T., & Vetter, A. (2006). Multimodality and expression in a foreign language in an audio-synchronous platform. *Alsic*, 9, 61-101 [in French].
- Ciekanski, M. (2014). Supporting language learning in the digital age – Changing issues and diversity of practice. *Alsic*, 17. Retrieved from <https://alsic.revues.org/2762> [in French].
- Creedy, D. K., Mitchell, M., Seton-Sykes, P., Cooke, M., Patterson, E., Purcell, C., & Weeks, P. (2007). Evaluating a web-enhanced bachelor of nursing curriculum: Perspective of third-year students. *Journal of Nursing Education*, 46(10), 460-467.
- Cuq, J. P. (2003). *French didactics dictionary*. Paris: CLE International [in French].
- Cuq, J. P., & Gruca, I. (2002). *Didactics course in French as a second language*. Grenoble: Grenoble University Press [in French].
- Dejean, T., & Nissen, E. (2013). *Technological evolutions, didactic evolutions. French in the world, Research and Applications: Technological changes, new social practices and language didactics*. Retrieved from <https://edutice.archivesouvertes.fr/edutice-00978035>. [in French].
- Deltsidou, A., Voltyraki, E. G., Mastrogiannis, D., & Noula, M. (2010). Undergraduate nursing students' computer skills assessment: A study in Greece. *Health Science Journal*, 4(3), 182-188.

- Ditzel, L., & Wheeler, A. (2017). Nursing students' experiences of using Adobe Connect in a first-year professional nursing course. *International Journal of Learning, Teaching and Educational Research*, 16(9), 114-124.
- Englehart, D. S. (2015). Explorations in online learning using Adobe Connect. *International Journal of Learning, Teaching and Educational Research*, 14(2), 99-110.
- Falloon, G. (2011). Exploring the virtual classroom: What students need to know (and teachers should consider). *MERLOT Journal of Online Learning and Teaching*, 7(4), 439-451.
- Farrell, G. A., Cubit, K. A., Bobrowski, C. L., & Salmon, P. (2007). Using the WWW to teach undergraduate nurses clinical communication. *Nurse Education Today*, 27(5), 427-435.
- Glover, I., Hepplestone, S., Parkin, H. J., Roger, H., & Irwin, B. (2016). Pedagogy first: Realizing technology enhanced learning by focusing on teaching practice. *British Journal of Educational Technology*, 47(5), 993-1002.
- Guichon, N. (2012). *Towards the integration of ICTs in language teaching*. Paris: Didier [in French]. Retrieved from http://www.civilica.com/Paper-ELEARNING02ELEARNING02_006.html.
- Hampton, D., Fachie, P. F., & Moser, D. K. (2017). Preferred methods of learning for nursing students in an on-line degree program. *Journal of Professional Nursing*, 33(1), 27-37.
- Jezegou, A. (2012). Presence in e-learning: Theoretical model and perspectives for research. *Journal of Distance Education*, 26(1), 1-18 [in French].
- Lin, H. (2014). Establishing an empirical link between computer-mediated communication (CMC) and SLA: A meta-analysis of the research. *Journal of Language Learning & Technology*, 18(3), 120-147.
- Lindqvist, C. (2006). *Translinguistic influence in French interlingua: Study of oral production of plurilingual learners*. Unpublished PhD Thesis, Stockholm University, Sweden [in French].
- Loewen, S., & Wolff, D. (2016). Peer interaction in F2F and CMC contexts. In M. Sato, and S. Ballinger (Eds.), *Peer interaction and second language learning: Pedagogical potential and research agenda* (pp. 163-184). The Netherlands: John Benjamins.
- Lynch, M. M. (2002). *The online educator: A guide to creating the virtual classroom (Routledge falmer studies in distance education)*. New York: NY, Routledge.
- Milojković, M. (2019). Teaching English by Skype: theoretical and practical considerations from the perspective of Serbian English teachers. In M. L. Carrió-Pastor (Ed.), *Teaching language and teaching literature in virtual environments* (pp. 97-119). Singapore: Springer Nature.
- Mitchell, E. A., Ryan, A., Carson, O., & McCann, S. (2007). An exploratory study of web-enhanced learning in undergraduate nurse education. *Journal of Clinical Nursing*, 16(12), 2287-2296.
- Moladoust, E. (2013). CMC and distance learning: A case of vocabulary learning. *The Iranian EFL Journal*, 9(1), 134-143.
- Motamedi, V. (2001). A critical look at the use of videoconferencing in United States distance education. *Education*, 122(2), 386-394.
- Muller, C. (2015). Teacher thinking in an online tutoring experience (towards a remote tutorial act). *Research in Didactics of Languages and Cultures: Cahiers de l'Acedle*, 12(2) [in French].
- Paechter, M., & Maier, B. (2010). Online or face-to-face? Students' experiences and preferences in E-learning. *Journal of Internet and Higher Education*, 13(4), 292-297.
- Rahman, S., Ramakrishnan, T., & Ngamassi, L. (2020). Impact of social media use on student satisfaction in higher education. *Higher Education Quarterly*, 74(3), 304-319.

- Reushle, S. E. (2006). A framework for designing higher education e-learning environments. *Paper presented at E-Learn 2006 World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education, 13-17 Oct., Hawaii: Honolulu*. Retrieved from <http://eprints.usq.edu.au/1226>
- Richards, J. C., & Trew, G. (2003). *Developing tactics for listening*. Oxford: Oxford University Press.
- Salomonsson, J. (2020). Modified output and learner uptake in casual online learner-learner conversation. *System, 93*, 1-15.
- Schullo, S., Hilbelink, A., Venable, M., & Barron, A. E. (2007). Selecting a virtual classroom system: Elluminate Live vs. Macromedia breeze (adobe acrobat connect professional). *MERLOT Journal of Online Learning and Teaching, 3*(4), 331-345.
- Schwartzman, R. (2007). Refining the question: How can online instruction maximize opportunities for all students?. *Journal of Communication Education, 56*(1), 113-117.
- Snow, C., Pullen, J. M., & McAndrews, P. (2005). Network EducationWare: An open-source web-based system for synchronous distance education. *IEEE Transactions on Education, 48*(4), 705-712.
- Sulaimani, A. O., Sarhandi, P. S., & Buledi, M. H. (2017). Impact of CALL in-house professional development training on teachers' pedagogy: An evaluative study. *Cogent Education, 4*(1), 1-12.
- Taghizadeh, M., & Hasani Yourdshahi, Z. (2020). Integrating technology into young learners' classes: Language teachers' perceptions. *Computer Assisted Language Learning, 33*(8), 982-1006.
- Tolooïe-Lourdou, A., & Torres, A. J. C. (2009). Promoting the integration of ICT in university-level education in Puerto Rico: The case of U.P.R. from Cayey. Puerto Rico. *Cuadernos de Lingüística / U.P.R. Working Papers, 2*(2). Retrieved from <http://linguistica.uprrp.edu/Articulos%20diciembre%202009> /Tooloie-20.octobre2014. [in French].
- Vaufrey, Ch. (2014). *MOOC and E-learning, what differences?*. Retrieved from <http://cursus.edu/article/21838/mooc-learning-quelles-differences>. [in French].
- Wood, F. G. (2016). Where are the faculty? Fulfilling the traditional faculty role at a distance. *Journal of Professional Nursing, 32*(4), 256-261.
- Wursta, M., Brown-DuPaul, J., & Segatti, L. (2004). Teacher education: Linking theory to practice through digital technology. *Community College Journal of Research and Practice, 28*(10), 787-794.
- Yen, Y. C., Hou, H. T., & Chang, K. E. (2013). Applying Skype in English as a foreign language instruction: Effect on students' speaking errors. In J. F. Wang, and R. Lau (Eds.), *Advances in Web-based learning- ICWL 2013. Lecture Notes in Computer Science, vol.8167* (pp. 312-319). Springer, Berlin: Heidelberg.
- Zhao, Y. (2003). Recent developments in technology and language learning: A literature review and meta-analysis. *CALICO Journal, 21*(1), 7-27.
- Ziegler, N. (2016). Synchronous computer-mediated communication and interaction: A meta-analysis. *Studies in Second Language Acquisition, 38*(3), 553-586.