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Online EAP Courses amid COVID-19: On the Effectiveness of the Vocabulary, Grammar, and Reading Comprehension Components

Masoud Azizi*

Assistant Professor of TEFL, Amirkabir University of Technology, Tehran, Iran

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Abstract

The COVID-19 pandemic pushed all universities to offer all programs online, but not all instructors were prepared for such an abrupt transformation. Online education can be very challenging both to the instructors and the institutions and has several subtleties that make it quite different from face-to-face programs. There exists an urgent need for studies examining the effectiveness of such programs being offered amid the pandemic in comparison with the same courses held face-to-face. As a result, the present study was an attempt to compare the effectiveness of an online EAP course with that of the same course being offered face-to-face in terms of its three components, namely vocabulary, grammar, and reading comprehension. Sixty-eight students in two groups of online and face-to-face classes took part in this study with a pretest-posttest design. While the two groups were not significantly different at the onset of the study, the results of the SPANOVAs run showed a significant difference in the case of the grammar component, but not the other two, with the face-to-face group outperforming the online one. The follow-up interviews revealed that learners in online classes often have little interaction with their instructors and peers, and teachers cannot keep learners engaged and active during the class as it is often conducted in the form of a monologue lecture. All this indicates that an online program is not a translation of a face-to-face curriculum into an online format, but it enjoys numerous intricacies that need to be considered by all those involved.

***Keywords*:** COVID-19, Online education, EAP, Grammar, Vocabulary, Reading

***Corresponding author's email:** mazizi@aut.ac.ir

INTRODUCTION

Distant and online classes have been used for a long time (Allen & Seaman, 2016), but often for the time when distance was a major factor, i.e. when the learner and the instructor were too far away from each other that it was not possible or at least practical to attend a face-to-face class. In addition, the online classes were mainly held for the subjects for which it was possible to keep the usual standards observed in non-virtual classes (Baranik, Wright, & Reburn, 2017). However, when the COVID-19 pandemic started, the situation was different. Virtual classes were a must. All educational institutes, schools, and universities had to close, but education could not stop. The only choice was delivering instructions in the virtual mode. It was no longer a choice. Even the subjects which did not lend themselves well to such a mode of presentation had to be delivered either online or offline. Even the instructors who had never used the virtual environment for instruction or did not believe in its effectiveness had to use it to present their lessons. The transformation the Coronavirus pandemic caused by pushing the educational systems toward the virtual mode of presentation could not have been done over years under normal circumstances.

However, online programs have numerous subtleties that need to be taken into account (Al Ghademi, Samarji, and Watt, 2016), but what this pandemic caused was to a great extent a simple translation of face-to-face classes and curriculum into an online format without considering such variables as to how to keep learners engaged, how to make the best use of technology, and how to ensure maximum interaction with and among learners. For having a successful online course, there are variables both the teachers and institutions need to take care of (Raes et al., 2020). The present study was an attempt to check the effectiveness of such online EAP language programs offered by universities as part of students' curriculum amid the COVID-19 pandemic.

LITERATURE REVIEW

The transformation over time in the patterns through which people live, work, and pursue education has entailed a need for transformation in higher education. The advent of technology and its rapid rate of development not only has expedited this transformation but has also made it inevitable. In the context of learning, higher education institutes have been challenged to adapt themselves to the emerging need to offer an education that is less location- and time-bound (Lakhal, De Sherbrooke, & Bateman, 2017), adapting their programs with education seekers who are "changing and balancing study, work and family life" (Raes et al., 2020, p. 2). What has made this change possible has been the use of technology in education in the form of offering more and more distance, online, or blended education.

Higher education institutions have experienced a profound transformation over the past decade and are now facing new challenges regarding the role and the implementation of technology in education (Altbach, Reisberg, & Rumbley, 2019). Developments such as the use of Virtual Reality (VR) or the inclusion of blended learning are only some instances of such a revolution. VR, for instance, due to its ability to arouse the feeling of presence and immersion in its users (Vesisenaho et al., 2019), has been increasingly employed in different fields including education, vocational training, and entertainment (Chen & Hsu, 2020; Martín-Gutierrez, Mora, Anorbe-Díaz, & Gonzalez-Marrero, 2017). VR is presumed to help language learners via providing both a rich contextualization resulting from simulation and meaning-form enhancement through multimodal input. In addition, it can foster learner autonomy (Tseng, Liou, & Chu, 2020).

Online education has become an integral part of higher education all over the world with the number of students enrolling in such programs being on the rise over the past decades (Baranik, Wright, & Reburn, 2017). In 2009 in the United States, for example, 5.6 million students in higher education had enrolled in at least one online course, which was a million

more than the same number in the previous year (Allen & Seaman, 2010). By 2012, this number had increased to 7.1 million, which had constituted 33.5% of all the student population (Allen & Seaman, 2014). Besides, 14% of higher education students in the U.S., had exclusively enrolled in distance or online programs at the time (Allen & Seaman, 2016). Today more higher education institutes all over the world tend to offer online programs. They view such programs as an integral part of their long-term strategic plans (Allen & Seaman, 2013). Only during the years between 2007 and 2013, the number of accredited universities offering online courses had grown by 43% (Allen & Seaman, 2014).

Online education is being increasingly embraced by students and educational institutes due to the numerous merits it enjoys. They are not location-bound, offering the same opportunities to those wishing to receive a high-quality education, the ones who may not have access otherwise (Baranik et al., 2017). It is believed that online education in its different forms including distance and blended learning is pedagogically richer (Rashid, Kamsin, & Abdullah, 2020) and more efficient, flexible, and cost-effective in comparison with face-to-face classes. Distance courses allow applicants to take part in programs anywhere at any time they wish. They can also better meet students' needs as they provide them with better access to courses they might have failed before or are no longer offered at the institution due to different organizational constraints such as course over-enrolment or scheduling limitations (Bailey, Gosper, Ifenthaler, Ware, & Kretzschma, 2018; Fischer, Xu, Rodriguez, Denaro, & Warschauer, 2020).

However, online programs are not without flaws and challenges. In fact, one exploring the literature on the subject may find more on the challenges than their merits. Research on online course settings at the college level indicates that students in online programs cannot often perform as well as those in more traditional face-to-face courses regarding course completion (Diez-Uhler, Fisher, & Han, 2008; Xu & Jaggars, 2013), course grades and college enrollment (Bettinger, Fox, Loeb, & Taylor,

2017; Jaggars & Xu, 2016). Such inabilities are often associated with students' self-directed learning skills and abilities, which play a more significant role in online courses in comparison with the more traditional ones (Broadbent, 2017; Cho, Kim, & Choi, 2017; Fischer et al., 2020). Students are required "to have self-regulation skills and technological competence since they are required to manage and carry out their studies independent of their instructor, at their own pace" (Rasheed et al., 2020, p. 2), which necessitates a high level of motivation on the part of the learners (Azizi & Nemati, 2018).

In addition, what is often lacking in most online courses is personal contact and interaction, which is a significant factor as learners often greatly value such contact with their instructors and peers (Ramesy, Evans, & Levy, 2016). "Teaching involves a process of relational development and requires effective interpersonal communication skills to achieve satisfying outcomes" (Graham, West, & Schaller, 1992, p. 11). From both an interactionist and a sociocultural point of view regarding SLA, learners' interaction with each other can provide them with great opportunities for negotiation of meaning (Guo & Mollering, 2016), which can, in turn, result in L2 learning particularly at times when they have to deal with the difficulties arising in their communication attempts with others (Ellis, 1999).

Research in face-to-face instruction has demonstrated the importance of instructor's interpersonal communication with learners particularly in the form of such practices as *immediacy* (Miller, Katt, Brown, & Sivo, 2014), i.e. "verbal and non-verbal communication behaviors reducing the social and psychological distance between people" (Song, Kim, & Luo, 2016, p. 436) and self-disclosure (Stoltz & Bryant, 2013). These variables have been reported and thought to positively affect learners' level of motivation and learning. The development of such interpersonal relationships through immediacy practices and behaviors can work toward facilitating students' learning experiences (Song et al., 2016).

Due to the unique structure of the online classes, which often

entails a restriction of non-verbal communication, fostering a strong and lasting teacher-learner relationship can be very challenging especially in contexts in which the learners know very little about the instructor or where the teacher prefers to have very little self-disclosure (Song et al., 2016). The term 'e-immediacy', coined by Al Ghademi, Samarji, and Watt (2016), has been used to refer to the teacher's immediacy behaviors in online environments. Due to the restricted instances of such non-verbal communication and behaviors in an online learning context, e.g. eye contact, smiling, physical distance, and graphic information, researchers have focused their attention on other possible behaviors fostering immediacy in such a context including the use of humor (Kucuk, 2009) and emoticons (Gunter, 2007). Similar to face-to-face learning environments (Azamnouri, Pishghadam, & Naji Meidani, 2020), immediacy in online classes or e-immediacy has been found to be able to facilitate learning experiences via increasing learners' participation, communication satisfaction (Al Ghademi et al., 2016), and affective and cognitive learning (Baker, 2010).

Student engagement is another significant, but difficult to tackle, factor in online classes. It is more challenging to keep online or distance students active and engaged to the same level as that of learners in a non-virtual class (Raes et al., 2020). According to Weitze's (2015) study, students in the online component of hybrid or blended programs learned less, were less active, and often behaved as if they were watching TV or not attending a lesson mainly due to the monologue-based teaching strategy employed by teachers. Students were reported having trouble informing the instructor that they wished to answer a question or participate in the discussions, which made them feel frustrated and unmotivated to assume an active role in the class (Raes et al., 2020).

Moreover, online or remote students have been reported to have a lower sense of attachment to their institution, which demands remedies for encouraging a feeling of connectedness between those students and their teachers as well as the face-to-face students in a hybrid program (Ramsey

et al., 2016). Since positive learning outcomes and higher retention rates are often attributed to learner engagement in the class (Bote-Lorenzo & Gomez-Sanchez, 2017), instructors and course designers must address such issues and take steps to promote and improve student engagement and interaction in online programs.

Unfortunately, students from less advantaged backgrounds are more vulnerable in online programs (Baranik et al., 2017). "Students who are traditionally at-risk in college settings (e.g., low-income students, underperforming students, students from underrepresented racial/ethnical backgrounds, first-generation students) might lack the necessary experience or self-directed learning skills required to succeed in online learning environments" (Fischer et al., 2020, p. 2). These students are more likely to face additional course performance penalties in online programs than they do in face-to-face classes (Xu & Jaggar, 2014).

PURPOSE OF THE STUDY

Having considered the subtleties involved in teaching an online class, one needs to wonder if the sudden movement from face-to-face programs at universities all over the world to online classes due to the current pandemic meets the necessary standards once observed in face-to-face classes before the pandemic. After the Coronavirus spread, in Iran too, all educational institutions including the universities had to close due to observing healthcare protocols, but education could not halt, so it shifted to an online mode.

The use of online courses, however, in the Iranian universities had not been very much embraced by the instructors and even university authorities in the past. When the COVID-19 pandemic struck, the majority of instructors and university officials were hit by surprise, being left with no choice but to conduct their courses online. A great unwillingness was expressed, and for a while, all the classes were canceled in the hope that the pandemic would be over soon and make-up classes could do the job,

but as it was soon revealed, this scenario could not work. Therefore, all the instructors, willingly or unwillingly, had to defer to the new institutional regulations and conduct their courses online. Nonetheless, this sudden transformation posed several challenges as the technological infrastructures were not ready in some cases, and some, if not all, instructors were not technologically competent enough and were not trained for dealing with the intricacies of online programs. Anyhow, all the courses in the spring semester were offered online, and the same situation likely holds for the fall semester as well.

The outcome of such an abrupt change was more of a simple translation of the previous curriculum to an online format, constrained by many factors such as that of the technology available, with the effectiveness of such a practice being presupposed. To the best of the author's knowledge, no study has so far checked the effectiveness of such programs in comparison with that of the traditional ones offered before the pandemic.

As a result, the present study was an attempt to check the effectiveness of one such program in comparison with the same course being presented face-to-face. To do so, an online EAP program at Amirkabir University of Technology was selected for evaluation and the following research questions were stated accordingly.

1. RQ1: Is there any significant difference between students undergoing online EAP courses and those experiencing traditional face-to-face classes in their mastery of vocabulary, grammar, and reading comprehension?
2. RQ2: What do participants undergoing the online program think about the advantages and disadvantages of the program they went through?

METHOD

Participants

For this study, a total number of 121 participants in two groups of online and face-to-face classes were available to the researcher at Amirkabir University of Technology (AUT) in Tehran. There were 57 students in the traditional or face-to-face group in the two different classes of the same course and 64 students were enrolled in two online classes for the same course at the same university. However, the traditional and the online classes were held in two different semesters.

Due to the data collection dropouts and the criteria set for the present study, the final data analysis was done with 34 participants in the traditional classes and 34 in the online classes. These were those who had completed all phases of the data collection and had attended at least 75 % of all classes. Moreover, only the ones who were classified as pre-intermediate and intermediate learners based on the Oxford Quick Placement Test (OPT), administered at the beginning of the English courses were included for the study with the number of students in the two groups being matched based on the results of the mentioned test before the study began.

Instrumentation

At the onset of the study, an Oxford Placement Test was administered to check students' level of proficiency, with those being grouped as pre-intermediate and intermediate being selected for the purpose of the study. Then a pretest of 70 items was given to both groups to check their knowledge of the content to be taught in the course. The test was composed of 30 items of vocabulary, 20 items of grammar, and 20 items of reading comprehension. After the course was over, a parallel form of the mentioned test was prepared based on the same table of specifications and administered at the end of the study as the posttest. The Cronbach alpha for

the pooled answers was found to be .87 for the pretest and .83 for the posttest.

The textbook taught and used as the basis of the pretest and posttest was called 'English Turbo' written and compiled by the faculty members of the English Department at Amirkabir University of Technology. This textbook includes 10 units with each unit encompassing a text of about 1,000 words on an engineering-related subject followed by reading comprehension questions, both multiple-choice and true-false questions. It also includes a section on vocabulary with different types of exercises, a grammar section, and finally a writing section.

Data Collection Procedure

Before the study began, an Oxford placement test was given to the participants to determine their level of proficiency and later ensure the two groups' comparability. It is important to mention that the data collection on the participants in the traditional classes was done as part of a different study by the researcher before the Coronavirus pandemic when students normally attended the classes at the universities. As a result, participants' selection in the online classes which were held during the pandemic had to match that of the face-to-face classes. The same OPT test was used to check the proficiency level of the participants in the online classes. The results were used to match the participants in the two groups so that the same number of pre-intermediate and intermediate participants existed in each group. The independent samples t-test run between the two groups' scores for the OPT showed no significant difference, $t\ (66) = .40$, $p = .69$ ($M_{Traditional} = 27$, $SD_{Traditional} = 5.99$, $M_{Virtual} = 26.41$, $SD_{Virtual} = 6.01$).

At the beginning of the study, for both groups, a pretest was administered to check participants' prior knowledge. It was based on the textbook to be taught, covering the first six units of the textbook in terms of vocabulary and grammatical structures being taught. For the reading comprehension part, four texts with 5 questions for each were used. All the

items were in the multiple-choice format, and they were all written based on a table of specifications covering different topics and units taught during the course. The results of the independent samples t-tests run for the different sections in the pretest showed no significant difference between the two groups.

Then both groups underwent at least 14 sessions of instruction with group 1 attending the face-to-face classes and the other group attending virtual classes during the following semester when the COVID-19 pandemic was prevalent.

In the non-virtual classes, after doing a warm-up provided in the textbook to activate students' background knowledge, the main reading comprehension text was read together with students in the class. The students were instructed to use different tools; they had to first predict the text and then read it. These tools, as explained to them in the first session of the instruction were their background knowledge about the topic, their logic, their previous knowledge of the language including grammar, vocabulary, and the writing system, and finally the clues they needed to notice in the text together with different strategies that could help them read better.

Students were instructed to read the questions first to be able to predict the text before they started to read the text. As a result, only after students did their best to predict the text and get as much information as possible from the questions, were they asked to check the title and subtitles or the diagrams and pictures provided in the text, somehow to verify their predictions and thought process.

Next, students were asked to start reading the text paragraph by paragraph. They were required to summarize each sentence, or even part of a sentence, in one or two words on the left margin right next to that part. Their function was to help them remember that part of the text after they had finished the text without having to read that part again.

After students read one or two paragraphs on their own in the way explained above, the teacher started to read the assigned sections, checking

and asking for students' summary words for each part and making sure students had identified the main idea and the main piece of information in each sentence or part of the sentence if the topic had shifted there. The contextual clues students needed to notice were asked for and checked with the students. It was explained what each clue could tell them beyond their literary meaning. In the end, they were required to answer the questions following the text by finding the exact piece of text which could support their selected response.

For the grammar sections, the grammatical structure was explained using a deductive approach on the board, providing a number of examples to show how the rules worked. Then students' questions were answered regarding any ambiguity they had felt.

In the online classes, the method of teaching was similar to that of the face-to-face classes, but the interface for presentation was different. The environment in which the lessons were given was different. The AUT uses the NIMA software for its online classes, which is neither quite up-to-date software nor is it very user-friendly, though it has a lot in common in terms of interface and functions with the rest of the available software.

In this LMS, the instructors can share their desktops with students or share some content or file. There is also a whiteboard available to them for use. They can share their voice only or share their picture and voice together. They can also grant the same permission to individual students or groups of them. There is also a notepad available to the instructor which they can use to leave notes for the students. There is also a chat module available to the students and the teacher to ask and answer questions if they do not wish to share their voice or picture.

While NIMA is used to teach online, there is another module available to the instructors and the students to be used for offline classes. In this module, the instructor can upload any file for the students to use, provide videos of offline teaching, give quizzes and tests, assign homework, and define deadlines for assignments. In all the virtual classes at AUT, both systems were used together for each class.

The participants in the virtual group underwent the same instruction as that of the face-to-face group, but for the fact that not all the possible options available to the instructor could be benefited. Due to the Internet connection quality and speed, particularly on the part of the students, the instructors were strongly recommended not to share their desktop or use webcams so that students had less difficulty receiving the data and attending classes. As a result, the online classes were held by sharing the content only and the instructor's voice, with students' interaction being limited to the chat section of the software. Often the participants were unwilling to share their voice.

While 10 sessions were held online, the other 4 sessions were taught offline, i.e. the instructor had recorded a video in which he had taught the intended section, explaining each part the way he would in a face-to-face class, predicting students' possible questions or difficulties often based on his prior experience of similar classes. In so doing the Flashback Pro Recorder 5 software was used which records what happens on the desktop. The file was later uploaded to the AUT Moodle website and students could download and later watch the video. They were asked to watch the lesson carefully and ask their questions about any part they had difficulty with concerning following online sessions. They also had access to the instructor through email for their questions and inquiries.

Finally, when the course was over, the students were given a test as the posttest which was a parallel form of the pretest. This was different from their final exam which was officially given at the end of the semester. They were told they could check how prepared they were for the final exam while it could constitute part of their final score. The tests for the virtual classes were all done online. Measures were taken to ensure maximum authenticity of the responses and the challenges of online tests were tried to be addressed.

In order to answer the last research question, 15 participants in the virtual group were interviewed online for their opinions about and experiences of the virtual classes they went through. They were asked what

they thought about the advantages and disadvantages of attending such courses.

Data Analysis

In order to check the comparability of the two groups at the onset of the study in the case of their proficiency, checked using OPT, and the scores in the pretest for the vocabulary, grammar, and the reading comprehension sections, a number of independent samples t-tests were run.

For answering the first research question, however, since it was a mixed between-within subjects design with a pretest and posttest, a number of the Mixed between-within subjects analysis of variance (SPANOVA) were run for different sections included in the tests.

RESULTS

The two groups' performance in the case of all the three components of the pretest was not found statistically different $t_{vocab}(66) = .69$, $p = .49$; $t_{grammar}(66) = .-.99$, $p = .37$; $t_{reading}(66) = 1.10$, $p = .23$. Table 1 presents the descriptive statistics for the participants' performance at the pretest and posttest.

In order to answer the first research question, three SPANOVAs were run between the two groups' performance at the pretest and posttest over time. In the case of the vocabulary section, the results of the SPANOVA showed no interaction between the *Group* (virtual vs. face-to-face) and *Time* (from pretest to posttest), Wilks' Lambda = .99, F (1, 66) = .14, $p = .72$. However, there was a substantial effect for *Time*, Wilks' Lambda = .03, F (1, 66) = 2526.42, $p < .005$, partial Eta squared = .97. However, the main effect for Group, comparing the effect of the mode of presentation, i.e. teaching vocabulary in virtual vs. face-to-face classes, was not found statistically significant, F (1, 66) = .31, $p = .58$, suggesting that while both groups could improve in their performance over time from the pretest to the posttest, they did not differ from each other in the extent

to which such an improvement was observed.

Table 1: Descriptive Statistics on the Participants' Performance at the Pretest & Posttest

Component	Test	Group	N	Min.	Max.	Mean	SD
Vocabulary	Pretest	Traditional	34	5	17	11.09	3.55
		Virtual	34	5	18	10.53	3.08
	Posttest	Traditional	34	12	29	21.09	4.33
		Virtual	34	11	29	20.68	3.82
Grammar	Pretest	Traditional	34	3	10	6.29	1.78
		Virtual	34	3	11	6.06	1.74
	Posttest	Traditional	34	8	18	14.06	2.80
		Virtual	34	7	19	11.74	2.93
Reading	Pretest	Traditional	34	5	9	6.71	1.09
		Virtual	34	5	8	6.44	.89
	Posttest	Traditional	34	9	18	14.24	2.09
		Virtual	34	9	17	13.18	1.95

In the case of the Grammar section, the picture was different. The interaction between the *Group* and *Time* was found statistically significant, Wilks' Lambda = .63, F (1, 66) = 39.60, $p < .005$, partial Eta squared = .38. There was also a substantial effect for *Time*, Wilks' Lambda = .04, F (1, 66) = 1640.57, $p < .005$, partial Eta squared = .96. More importantly, the main effect for Group, comparing the effect of the mode of presentation, was found statistically significant, F (1, 66) = 5.37, $p = .02$, partial Eta squared = .08, suggesting an advantage for the face-to-face classes over the virtual classes.

Finally, regarding the reading comprehension skill, the observed pattern of the results was more similar to that of the vocabulary subskill. The results of the SPANOVA showed a significant interaction between *Group* and *Time*, Wilks' Lambda = .91, F (1, 66) = 6.37, $p = .01$. There was also a substantial effect for *Time*, Wilks' Lambda = .03, F (1, 66) =

2055.18, $p < .005$, partial Eta squared = .97. However, the main effect for Group was not found statistically significant, $F(1, 66) = 3.52$, $p = .07$, suggesting that while both groups could improve in their performance over time, they did not differ from each other in the extent to which such an improvement was observed.

To answer the second research question, a semi-structured interview was conducted with 15 randomly selected participants in the virtual group, asking their opinion regarding the course they underwent. While they all emphasized that under the current circumstance during the COVID-19 pandemic, they preferred attending virtual classes, the majority of them admitted that in a normal situation, a face-to-face class was of superiority and priority.

When asked for the advantages of a virtual class, the responses were very limited, with the majority of them being about the safety it provided in the pandemic, allowing the students to stay in quarantine. "In this pandemic and the danger waiting for use outside, virtual classes elevated the need to leave quarantine." They also expressed their satisfaction with the fact that they could log in wherever they were, and since they were often at home, they felt more comfortable and less stressed as often the webcam and the microphone were off. They also felt less fatigue after the classes were over. In addition, the availability of the recorded classes after the sessions were over made it possible for the students to go over the lessons as many times as they wished and review any subject they had difficulty with. Finally, in case they had missed any class for any reason, they could later access the recorded file and make up for what they had missed.

Regarding the problems with which participants had to deal with in the virtual classes, a longer list of issues was obtained. According to the participants, some subjects or topics lend themselves well to teaching online or offline while others do not. For example, in the case of the English course, while teaching vocabulary online was not very much different from the traditional face-to-face mode of instruction,

understanding the grammar was more difficult as it was less possible to interact with the instructor and ask him to clarify the vague points. Moreover, as the instructor could not receive much feedback when teaching a subject, sometimes he wrongly assumed that students had understood the subject well and could pass to the next topic. In addition, since the use of the 'whiteboard' available to the instructor in the NIMA software was difficult due to technical problems, the instructors preferred to make the minimum use of that if not any. This made understanding more complicated topics more difficult to grasp as simply explaining or describing a topic or problem cannot often be sufficient. On the other hand, in some other cases, the virtual mode of instruction could be more effective. For example, when reading a text about a technical issue such as the way a machine works in a technical field, virtual classes provide the opportunity for the instructor and the students to access pictures, diagrams, and videos online more easily helping them better understand the mechanism or process being described in the text.

One major problem mentioned by all the interviewees was the quality of their internet connection. They reported getting disconnected from time to time during the class hour, which made it sometimes difficult for them to make sense of what they had been listening to before being disconnected and after getting reconnected. Since this could have happened several times for each student during a single session, it was not logical and possible to ask the instructor to repeat what was missed each time. Usually, they preferred to later download the video of the class and review the parts they had missed but often due to their busy schedule with other classes, they never had the chance to do so. Moreover, due to the same problem, the participants reporting their experience of a high amount of stress and anxiety during the quiz or exam time as often a limited time was allocated for the exams in order to minimize the possibility of cheating and getting disconnected meant not only losing time but also leaving the exam session.

Still another important point mentioned by the participants was the poor communication and interaction in such classes with the instructor and

their peers in comparison with the face-to-face mode of instruction. They believed receiving the instructors' voice could only make the instruction more like a phone conversation adversely affecting the quality of instruction and interaction. "Since the instructor could not see our faces and did not receive much feedback from us, sometimes he over-explained an issue which he thought we might have a problem with, and sometimes he assumed a subject was fully understood by all the students while it was not. Though we could sometimes avoid the second problem by asking him to repeat the instruction or review a part again, there was nothing we could do about the other one." In addition, they stated that often the only tool for communicating with the instructor during the session was the chat module provided on the NIMA software. For many reasons, they preferred not to volunteer for sharing their voice with the rest of the class as they did not feel comfortable. As such, it was not very easy for them to express their more complicated questions or ideas with the instructor or their peers in the class, and the questions they asked or the responses they gave were limited to short, less complex, and more straightforward ones. All this had resulted in their feeling of frustration.

DISCUSSION

While the two groups did not differ from each other at the pretest in any of the three language components under study, i.e. vocabulary, grammar, and reading comprehension, the picture changed over time by the end of the semester. By the time the course was over, as expected, both groups had significantly improved in all the three components indicating the success of both programs which was not surprising as to the nature of the program and the test as it was more of a content mastery rather than proficiency improvement and the tests were designed to tap participants' mastery of the textbook being taught. In other words, it was more of an achievement test. However, when comparing the difference in the improvements from pretest to posttest between the two groups, the researcher observed that the extent

to which they had improved was not the same in all three cases. While the two groups had a similar performance in the case of the vocabulary and reading comprehension, they significantly differed in terms of performance on the grammar test checking participants' mastery of the covered grammatical structures in the textbook taught as part of the course syllabus, with the face-to-face group enjoying an advantage over the virtual group. This is in line with the results reported by Bettinger et al. (2017), Fischer et al. (2020), and Jaggars and Xu (2016).

It was not very surprising to observe such a pattern of results in the case of the vocabulary component as the method of presentation in the two modes of face-to-face and virtual is not only similar but there are times when an online presentation could be of help for the clarification of the meaning of some troublesome technical vocabulary. Though due to practical problems, students were not asked to check the meaning of words online during class time, the use of pictures and videos could help with teaching both vocabulary and the text. Although such an advantage for online classes exists, it could not help the online participants outperform the participants in the traditional classes which is not in line with what Rashid et al. (2020) and Bailey et al. (2018).

However, the students in the virtual teaching group did experience a disadvantage over the other group as the mastery of grammatical structures in a foreign language needs a deeper level of processing on the part of the learners. While the relationship between a word and its meaning or the concept it refers to is arbitrary and the burden of mastery is mostly on the shoulders of the learners rather than teachers, understanding a grammatical structure as complicated as that of subordination clauses, for example, and the ability to use them both in the original and reduced forms imposes a greater processing load on the part of the learner and demands a more supportive and active role on the part of the teacher. In a face-to-face classroom, due to the greater interaction between the instructor and the learners, the ambiguities are better resolved, the instructor receives feedback on learners' understanding of the subject, students are able to ask

for further explanation or clarification, and better use of the available tools such as the whiteboard can be made. When the instruction is delivered virtually, many of such opportunities are lost, and students are put in a disadvantageous position, adversely affecting their learning. Of course, this might not be the case for all the grammatical structures being taught, but it can be safely assumed in the case of more cognitively difficult structures to master. That could be the reason why such a pattern of results was observed regarding learners' performance on the grammar section but not the other two components, which can also be backed up by Diez-Uhler et al. (2008) and Weitze (2015).

Besides, the problems participants mentioned regarding their experience of the virtual class could also well justify the results. The poor quality of the internet connection affecting the flow of instruction, the little interaction they could have with the instructor and their peers (Graham et al., 1992; Ramesy et al., 2016; Raes et al., 2020), and the nature of the subjects being taught were among the major ones which could cause the observed pattern of results.

CONCLUSION AND IMPLICATIONS

Now that teaching in online or offline classes is not an option but a must, it is vital that we make sure they enjoy a similar level of standard as that of the traditional classes. To do so, we require studies examining the effect of such classes on the quality of learning, the weaknesses of such instruction need to be identified and addressed, and the quality of education must be maximized.

The present study was an attempt to fill such a gap in the literature by examining the difference between the virtual mode of instruction and the more traditional one in terms of learners' mastery of vocabulary, grammar, and reading comprehension components taught in an EAP course. The results showed that while the two modes of instruction did not differ in their effectiveness regarding the vocabulary and reading

comprehension components, the participants in the face-to-face instruction group could outperform the virtual one in the case of grammar. The differences between the two modes of instruction could be the reason behind the observed results.

Considering the substantial differences between face-to-face language instruction and an online one regarding the strategies used, often the instructor assumes the role of a facilitator in online classes mainly because learners have a more autonomous role and partly have to teach themselves rather than solely rely on the instructor. As a result, training an instructor for an online program can be very different from that of a traditional face-to-face one. Such training programs must be offered to instructors willing to or having to teach online courses. It is of great significance that institutions offer such training programs for initial preparation and ongoing support for these instructors.

It is of utmost importance that instructors do their best to maximize their interaction with students in virtual classes. They also need to provide the opportunity for learners to be able to interact with each other as well. Learners need to be encouraged to take part in the discussions and volunteer for responding to questions. Moreover, teachers must make their best use of the available tools in the software they use to compensate for shortcomings they have to deal with. A simple translation of the face-to-face curriculum to an online format is not going to work as often they tailor their curriculum to match the available technology rather than the other way round. This process often ends in a simplification of the curriculum. However, they need to make technology serve their curriculum to make it more effective and interactive. Instructors and online course designers need to be made aware that online programs are the same as the more traditional courses and it is not possible to simply transfer and translate the latter to the first one. Technology is there to be made use of for the best results and way of content presentation with maximum possible interaction and engagement aroused during the instruction.

The results of the present study indicate that it is not logical to

expect virtual instruction to enjoy the same quality as that of the traditional one; in some cases, virtual classes can have even higher quality due to some possible tools available to the teachers and the students, in some others they may enjoy the same quality of education due to the nature of the subject, and still, there are times it may lag behind.

While the present study indicated that teaching grammar could be adversely affected by the mode of instruction, it should be noted that the structures being taught, the subordination clauses with conditional sentences included in this case, can affect the results as well. Teaching and mastering such complicated structures with a high level of cognitive processing may be very demanding on the part of the instructors and learners. It would be advisable if similar studies address different grammatical structures. Moreover, in the present study, the virtual classes consisted of both online and offline teaching. The results could have been different if the whole course was simply taught online or offline only.

In this study, NIMA was employed. There are other programs with a better and more user-friendly interface and maybe more tools, but the point is that generally, the tools offered by all these programs, including NIMA, are not very much different from each other and what determines the quality of use is the quality of the internet connection which specifies the extent to which such tools can be employed in teaching a program. Even NIMA offers very similar tools as those of Adobe Connect or Zoom, though in a less user-friendly way, but due to the poor internet connection quality in Iran particularly in small cities and rural areas, the instructors had no choice but to avoid using them and simply employ the very basic ones. The results could have been different if all such tools could be made use of for instruction.

The course being taught was called ‘English II’, which was a two-credit course with students attending a two-hour class once a week. It is supposed to be a four-skill English program but due to the impracticality of the broad goals set for the course, in practice, it is limited to the reading skill with vocabulary and grammar sub-skills being practiced in

conjunction with that. Delivering such an instruction in a virtual mode can be quite different from offering such instruction in other skills, more specifically the speaking skill for which interaction plays a more significant and prominent role. More studies are needed to delve into the effect of instruction delivery mode in the case of such skills.

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No potential conflict of interest was reported by the authors.

ORCID

Masoud Azizi http://orcid.org/0000-0001-9054-1131

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