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Research Paper

Effect of Synchronous Virtual Learning Environment on Reading Comprehension of Undergraduate EFL Students

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Abstract

Virtual learning has been defined as any system of education and instruction that brings together participants who are separated by geographical distances or time. Significantly, in a virtual learning environment, interactive telecommunications systems are utilized to connect learners, resources, and instructors. As such, the present study sought to investigate the possible effect of a synchronous virtual learning environment on the reading comprehension of undergraduate EFL university students. To this end, from the population of students majoring in English translation at Islamic Azad University, Isfahan, Iran, one control group, and one experimental group were non-probabilistically selected based on their availability. Indeed, thirty students were chosen for the control group and thirty students were nominated for the experimental group. Live interactive teaching rooms were utilized in the experimental group during the term, whereas asynchronous instructional practices were adopted in the control group within the study. According to the results of paired samples t-test, the experimental group, which was instructed by live interactive teaching rooms over the term, had better performance at the end of the period as compared to the beginning of the term. Moreover, the independent samples t-test showed that the students' scores on the post-test in the experimental group were higher than those of the control group. Evidently, the results of the present study may have practical implications for EFL teachers, online instructors, distance education programmers, materials developers, and syllabus designers.

Keywords: Asynchronous Virtual Learning Environment; Distance Education; Live Interactive Teaching Rooms; Reading comprehension; Synchronous Virtual Learning Environment

تأثیر محیط یادگیری مجازی همزمان بر درک مطلب دانشجویان کارشناسی زبان

محیط یادگیری مجازی یک سیستم آموزشی می باشد که دانشجویانی که از نظر فیزیکی و زمانی از هم دور هستند در کنار هم جمع میکند. بطور چشمگیر، در یک محیط یادگیری مجازی سیستمهای ارتباطی تعاملی برای ارتباط فراگیران و مدرسان مورد استفاده قرار می گیرد. همین طور، هدف تحقیق حاضر بررسی تأثیر روش تدریس مجازی در پیشرفت مهارت درک مطلب دانشجویان سال آخر رشته زبان بوده است. به همین منظور، از دانشجویان رشته مترجمی دانشگاه آزاد خوراسگان دو گروه کنترل و آزمایش بطور غیراحتمالی بر مبنای دسترسی انتخاب شدند. در واقع تعداد ۳۰ نفر برای گروه کنترل و تعداد ۳۰ دانشجو برای گروه آزمایش برگزیده شدند. موقعیتهای تدریس تعاملی زنده در گروه آزمایش مورد استفاده قرار گرفت در حالی که تمهیدات آموزشی غیرهمزمان در گروه کنترل اتخاذ گردید. بر اساس نتایج آزمون جفتی، دانشجویان گروه آزمایش که در موقعیتهای تدریس تعاملی زنده قرار گرفتند عملکرد بهتری در پایان تحقیق در مقایسه با شروع تحقیق داشتند. به علاوه، بر اساس آزمون مستقل نمرات پس از آزمون دانشجویان گروه آزمایش بیشتر از گروه کنترل بود. بطور معلوم، نتایج این تحقیق میتواند کاربردهای عملی برای معلمان زبان، مدرسان آنلاین، برنامه ریزان آموزش مجازی، توسعه دهندگان مواد آموزشی و طراحان چارت آموزشی داشته باشد.

کلمات کلیدی: محیط یادگیری مجازی غیر همزمان، آموزش از راه دور، موقعیت های آموزشی تعاملی زنده، درک مطلب، محیط یادگیری مجازی همزمان

Introduction

New technologies have made profound changes in the way through which learners interact not only with their instructors but also with their peers in various educational settings. One mode of educational delivery which brings together students and teachers who are separated from each other through geographical distance is recognized as online learning. Furthermore, participants who cannot join the program at the same time may log on later to catch up on the recently covered lessons. Moreover, students are not compelled anymore to travel to particular and pre-arranged locations at specific times in order to join a special educational program. Likewise, they will not have difficulty attending classes in distant places at the same time with a specific instructor and this issue can be eliminated.

Distance education has the major purpose of giving instructions to learners in such a method that provides convenience for the learners. Despite this, the learners and their teachers who are geographically and psychologically separated from one another should not be disregarded in online classes. With technologies rapidly advancing and augmenting, universal statuses appear to adjust. For instance, universal economic states, vast corporations, management methods, and formats of education, to name a few, have altered substantially. Higher deliveries of training across the world are keen to adjust to these modifications via the implementation of devices and techniques. They modernize the systems of education in the realization of these changes (Guri-Rosenblit, 2009).

The field of distance education has enhanced quite a lot and a wide variety of different research topics in conjunction with the relationship between virtual learning settings and various language skills have erupted accordingly. Synchronous and asynchronous formats of delivery in virtual learning environments have been under investigation and experimentation in relation to their effects on reading comprehension and other language skills. Many researchers have shown a considerable interest in carrying out research on the relationship between a synchronous virtual learning environment and reading comprehension skills. In fact, learning satisfaction, sense of community, exam scores, and active class participation have been investigated considering the domain of a virtual learning setting and its effect on different language skills. The crucial role of a synchronous virtual learning environment in enhancing the reading comprehension of Iranian Undergraduate EFL learners has not been studied quite significantly. There is a close relationship between virtual teaching and the reading comprehension capacity. The reading comprehension of undergraduate EFL learners can be influenced by a synchronous virtual learning setting

Literature Review

Two universally relevant modes of delivery to today's community are the traditional setting and the virtual environment. The conventional environment is the normal educational system that is physically met by students and peers, while, the online class is the one that learners do not attend physically. In most areas of education the virtual setting is being used widely, and it is stated that this environment will enormously develop in the prospective years. These days, the traditional classroom setting is recognized as a prevailing environment in that the instructor and students participate in face-to-face classes.

Transmission of knowledge has rapidly been influenced by telecommunications networks (broadcasting, cable, Internet, World Wide Web, email, and so on) (Abeles, 1998), or that long established institutions may be turned into "dinosaurs" overnight (Noam, 1995). The "virtual" is used in informatics to indicate something which does not physically exist. Yet, it is actualized through soft wares. Having been discussed in the 1980 and in the 1990s, virtual reality means a computer simulation in which one can interact with an artificial medium or environment through a computer (Ghourchian et al, 2004).

Virtual education has its earliest roots dating back to the 1700s when advertisements were placed in newspapers offering to send shorthand lessons to people in their homes (Tracey & Richey, 2005). These types of mail-order correspondence offerings continued into the 1800s with the Lyceum and Chautauqua movements (Harting & Erthal, 2005). The focus of these movements was mainly on the adult learner, and the purpose of the efforts was to deliver educational opportunities in such varied subjects as the arts, sciences, mechanics, and reading to peoples' homes (Harting & Erthal, 2005).

The number of participants in online learning opportunities is growing in part due to the increased access afforded by Internet-based learning. The increased availability of online learning is allowing students from all backgrounds, geographic locations, and achievement levels to have access to educational opportunities previously unavailable (Wang & Reeves, 2007). Wang and Reeves (2007) wrote that "since virtual teaching is recognized as being a tool of expanding pedagogical opportunities, most educational settings have applied the digital training settings to some extent that other learners such as un-served or under-served populations might not otherwise utilize" (p. 340).

Picciano and Seaman (2007) wrote that due to the plethora of different modalities of online instruction, it would be difficult at best to determine the number and frequency of students actually enrolled in fully online educational programs. Even so, there seems to be little doubt that the popularity of online learning continues to increase. DiPietro et al. (2008) explained that online learning opportunities have increased since the inception of virtual schools serving elementary and secondary-age children.

Two major modes of educational delivery are known as a synchronous virtual learning environment and asynchronous virtual learning setting. In a synchronous learning environment live communication and interaction may be attained through various formats of delivery, namely; audio or video teleconferencing, a traditional classroom, a digital board, and integrative training rooms. Conversely, in an asynchronous learning environment, live interaction can be accomplished via plenty of methods including; e-mail, videotape, and Internet-based platforms in which learners and the teacher do not take part simultaneously. In different traditional and online programs, teachers have attempted to apply not only synchronous learning environments but also asynchronous learning settings.

More should be written, however, regarding what instructional delivery in a synchronous classroom should look like. Much has been written about what attributes an asynchronous course should contain and what asynchronous instruction should look like. Since the asynchronous mode of instructional delivery has been in use for many years by leaders of post-secondary institutions, there has been much attention devoted to what constitutes a quality asynchronous course.

Peer networks or peer groups create a stronger sense of community among middle school age children. Academic motivation of adolescent students is very important, and the students' sense of classroom belonging is crucial for success (Faircloth & Hamm, 2011). A major question regarding the ideas of Faircloth and Hamm (2011) that manifests is whether the peer networks that were established can be duplicated in the virtual environment.

Harvey, Greer, Basham, and Hu (2014) found the virtual learning environment to be relatively new to distance education, as most prior research had been conducted at the university level with adult learners. Harvey et al. (2014) commented that there was a need for additional research in the virtual learning environment. Harvey et al. (2014) found that the knowledge in the area of distance students in the virtual environment needed to be expanded because online learning is growing so rapidly. Universities will be able to provide a much greater level of support for the various needs of students with a broader base of knowledge.

Najafi and Heidari (2018) explored the meta-analytic association between hybrid settings and scientific accomplishment in English language teaching. A meta-analysis of Iranian articles on

hybrid settings and scientific accomplishment was mainly carried out in this investigation. Indeed, a blended environment brings together the strengths of both face-to-face training and distance education. The estimation of the effect size for the relationship between hybrid classes and academic attainment is the major method in this study. According to the findings of this investigation, the integration between blended environment and scientific accomplishment is considerable since the effect size for this study was 0.591, which is higher than medium in Cohen's approach. Ultimately, the hybrid setting had positive effects on learning the output of students based on the results. (Najafi & Heidari, 2019)

Akbari, Heidari Tabrizi, and Chalak (2020) carried out a research study on the influence of online vs. traditional teaching on enhancing the reading comprehension of Iranian undergraduate EFL students' reading comprehension ability. Three main groups were nominated from the students who were studying English translation. They included a control class, an experimental group, and a hybrid group. Their English proficiency level was intermediate. Based on the research findings, the experimental class which was trained via technological devices over the semester enhanced more than the other two classes.

The number of students who seek to participate in educational settings with online courses has increased quite dramatically. According to recent research studies, virtual learning environments have not been selected and occupied by undergraduate EFL students. In fact, face-to-face classroom settings have lately been applied for most of the studies conducted concerning reading comprehension skills. Not many research articles concerning the impact of virtual teaching on reading comprehension have been written in different schools and institutes. On the contrary, concerning the influence of virtual learning environment on the reading knowledge of EFL students, a large number of various investigations have been done at the university level.

The major goal of this research examination was to study the influential role of the synchronous mode of virtual learning setting in enhancing the reading capacity of Iranian university students. Moreover, this investigation was oriented towards discovering the noticeable differences between synchronous and asynchronous formats of delivery in the virtual learning setting in conjunction with English reading comprehension. The present research study attempted to bridge the gap in history by identifying that the synchronous online setting may have a possible impact on the reading knowledge of intermediate EFL students. Furthermore, a notable contribution could be made to comparing the synchronous mode of delivery in the virtual learning setting and the asynchronous format of delivery in the virtual learning environment.

In essence, the present investigation intended to answer the research questions below:

1. Can a synchronous virtual learning setting influence the reading knowledge of intermediate EFL students?
2. Is there a significant distinction between synchronous and asynchronous formats of delivery in the virtual learning setting in terms of their effects on reading comprehension competency?

Methodology

Design

A quasi-experimental research method was exploited in this scientific study. Essentially, a pretest/posttest quasi-experimental design was utilized to measure the effect of the treatment within a quantitative paradigm. As such, quantitative data were collected from the reading tests before and after the treatment. In essence, data collection in this study consisted of gathering data through the routine way of administering reading comprehension tests to participants. All the statistical and objective data resulting from this research study are outcome-oriented and confirmatory.

Participants

Sixty students whose proficiency level was roughly similar were chosen from Azad University, Isfahan Branch, Iran. The research sample was nominated from English translation learners who were senior students at the university. A non-probabilistic sample based on the availability of undergraduate learners was nominated due to the fact that the researcher had contact with translation students in Isfahan only. One control group and one experimental group were created and thirty students were randomly put into each group. Additionally, there existed not only males but also females in the study and they were all twenty to thirty years old. They were homogeneous based on their English courses and their semester at the university. Their native language was Persian but all the students' target language was English at the university.

Table 1

Demographic Background of the Participants

| | |
|--------------------------------------|----------------|
| Selected sample | 60 |
| Number of groups | 2 |
| Number of participants in each group | 30 |
| Gender | Male & Female |
| Age | 20 to 30 years |
| Level of Proficiency | Intermediate |
| Native Language | Persian |

Instrumentation

A placement assessment tool, a pretest, and a post-test were three fundamental instruments that were utilized for the assessment and evaluation. Basically, in the very beginning of the examination, the solution placement test was delivered to the students. In addition, prior to the treatment, the pretest was given to the students, while after the treatment the post-test was answered by students.

In order to find out that the chosen students in the sample classes were homogeneous, the Placement Test of Solution (Edward, 2007) was administered before the study. In summary, 50 multiple-choice items for assessing students' ability in terms of grammar and vocabulary were answered. Moreover, students responded to ten graded reading comprehension questions that tested their reading comprehension capacity. Finally, for evaluating the writing ability of students a writing task was given to them. Students spent sixty minutes answering the placement test questions. To that end, sixty students whose proficiency level was intermediate were nominated from the whole population.

For discovering the similarity of learners regarding their reading comprehension, a pretest including reading comprehension questions was given to them in advance. As such, learners were requested to answer five particular tasks containing thirty multiple-choice reading comprehension questions. The pretest was a researcher-made test based on the reading strategies and question types practiced in the *Strategic Reading* and *ACTIVE Skills for Reading* series. For the realization of the reliability of the pretest, it was piloted by the learners of the investigation, and the result was 0.82, computed by the KR-20 formula. Furthermore, in order to observe the content validity and construct validity of the pretest, five professional instructors and educators were consulted, and they confirmed that the test was acceptable and appropriate.

Finally, one more researcher-made exam, known as a post-test, was employed and administered. Similar to the pretest, five separate English reading comprehension tasks consisting of thirty questions were designed for the post-test. Students of both the control class and the treatment class were asked to respond to the questions on the post-test for determination of their progress regarding reading comprehension skills. The post-test was employed after the treatment

so as to find out the differences between students in the two classes. Furthermore, for the realization of the reliability of this test, it was piloted. As such, participants took the test and the reliability coefficient was 0.78, computed by the KR-20 equation. Furthermore, for observing the content validity and construct validity of the post-test, five professional instructors and educators were consulted, and they confirmed that the test was acceptable and relevant.

Method of Data Collection

Both the placebo class and the treatment class made use of various procedures and approaches throughout the study. In line with that, the researcher gave an alternative treatment to the control group meaning that the reading knowledge techniques were taught in an asynchronous online learning setting through non-interactive teaching methods. On the contrary, the researcher gave a treatment to the experimental group meaning that the reading activities were covered in a synchronous digital learning environment through live interactive teaching rooms. The experimentation took four months from the beginning to the end of the semester and sixteen sessions were met. Students did not cut classes and they proceeded with the research study until the final days of the term.

No live interactive chat rooms were applied in the control group and instead asynchronous virtual learning tools were implemented. Evidently, innovative methods such as live interactive software, audio teleconferencing, and communal whiteboards in teaching reading comprehension tasks were not executed by the teacher in the control group. They transmitted knowledge, exchanged lessons, and negotiated meanings through videotapes and short video clips. The instructor compelled learners to take the benefit of using verbal and non-verbal techniques in identifying the concepts throughout the recorded videotapes and video clips. For understanding the homogeneity of learners, a pretest was delivered before the research and for realizing their enhancement a post-test was delivered after the treatment.

Reading comprehension skills were discussed in a synchronous virtual learning setting in the experimental class. Sixteen sessions during sixteen weeks were held by learners of the treatment class. Interaction of the participants and their instructor was accomplished by employing live interactive teaching rooms via online software in a virtual learning setting. Reading comprehension strategies were emphasized by the instructor and students ~~learn~~ learned to use them in appropriate places as well. In order to realize that learners were homogeneous concerning their reading comprehension, a pretest was administered in the very beginning of the treatment and in order to figure out that students improved and progressed, a post-test was utilized after the experimentation at the end of the semester.

Method of Data Analysis

The Solution placement exam, pretest, and post-test findings were stored for data elicitation and data collection. The whole experimentation lasted from the beginning to the end of the term, approximately four months. In order to analyze and interpret the data later, the findings of the placement exam, pretest, and post-test were saved and copied. Likewise, following the data elicitation and collection, data analysis and interpretation were carried out. A Popular software program for English language papers was used after the experimentation.

The SPSS software program was employed to analyze the scores and findings obtained through a placement test, pretest, and post-test. The computer was used for data feed and analysis. Each true answer in the solution placement test was valued at one point and every true response for the reading knowledge questions in the pretest and post-test was valued at one point. An independent t-test was implemented to recognize the similarity of students concerning their general proficiency of English in the beginning of the experimentation. Moreover, in order to

understand the reading knowledge of students, one more t-test of independent type was performed at the beginning of the investigation. Additionally, in the synchronous virtual learning setting, a paired sample t-test was utilized to find out the differences between the pretest scores and post-test scores. Finally, another independent t-test was used so as to determine whether there were significant differences between the asynchronous virtual learning setting and synchronous virtual learning class on the post-test.

Results

Students' Homogeneity in Terms of English Proficiency Level

To recognize that the English proficiency level of both classes was the same, the students' points in the placement exam were analyzed using an independent samples t-test. The descriptive data for the placement test are included in the first table. As illustrated in the first table, according to a 95% confidence interval, plenty of numbers for the two groups are identified such as; the mean points, numbers for the deviation, and data in the third column. In the first column the number for the synchronous mode is 57.0333 and the number for the asynchronous mode is 56.9000.

Equal variances and the findings of the first test are depicted in the second table. Accordingly, the number for the level of significance (2-tailed) is 0.875, which is quite high and due to the fact that the level of significance (0.875) is much higher than the cut-off point (0.05), the conclusion would be that there was not a significant difference between both classes in the very outset of the investigation. Consequently, based on the results of this test, all students in the synchronous and asynchronous groups had similar English proficiency levels and they were all homogeneous.

Table 2

The t-test of Independent Type and Placement Test Numerical Data

| Group Statistics | | | | | |
|------------------|--------------|----|---------|----------------|-----------------|
| | | N | Mean | Std. Deviation | Std. Error Mean |
| Placement scores | synchronous | 30 | 57.0333 | 3.25347 | .59400 |
| | asynchronous | 30 | 56.9000 | 3.26264 | .59567 |

Table 3

The Placement Test Equal variances

| Independent Samples Test | | | | | | | | | | |
|--------------------------|-----------------------------|---|------|------|------------------------------|-----------------|-----------------|-----------------------|---|---------|
| | | Levene's Test for Equality of Variances | | | t-test for Equality of Means | | | | | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Placement scores assumed | Equal variances | .001 | .982 | .158 | 58 | .875 | .13333 | .84123 | -1.55057 | 1.81723 |
| | Equal variances not assumed | | | .158 | 58.000 | .875 | .13333 | .84123 | -1.55057 | 1.81723 |

Students' Homogeneity Regarding Reading Comprehension ability

A t-test of independent type was utilized to the scores of participants on the pretest so as to figure out the similarity of both classes concerning their English reading capacity. The data regarding the placement test are illustrated in the third table. Various numerical information containing; results of mean, results of deviation, and findings of error according to a high degree of interval for the two classes are represented in table number three. The number in the first column for the synchronous mode is 20.7333, and for the asynchronous mode is 20.6667 in this table.

Equal variances and the findings for the pretest are illustrated in table 4. Accordingly, the number for the level of significance (2-tailed) is 0.913, which is quite high and due to the fact that the level of significance (0.913) is much higher than the cut-off point (0.05), the conclusion would be that there was not a statistically significant difference between the two groups in the very outset of the investigation. As a result, it can be concluded that reading comprehension potential of all students in the synchronous group and asynchronous group were similar and there was not a statistically significant difference in the performance of learners in both groups on the pretest.

Table 4

The t-test of Independent Type and Pretest Numerical Data

| Group Statistics | | | | | |
|------------------|--------------|----|---------|----------------|-----------------|
| | modes | N | Mean | Std. Deviation | Std. Error Mean |
| Pretest scores | synchronous | 30 | 20.7333 | 2.21178 | .40381 |
| | asynchronous | 30 | 20.6667 | 2.48212 | .45317 |

Table 5

The Equal variances for the Pretest

| Independent Samples Test | | | | | | | | | | |
|--------------------------|-----------------------------|---|------|------|-------|------------------------------|-----------------|-----------------------|---|--------|
| | | Levene's Test for Equality of Variances | | | | t-test for Equality of Means | | | | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Pretest scores | Equal variances assumed | .582 | .449 | .110 | 58 | .913 | .06667 | .60698 | -1.1483 | 1.2816 |
| | Equal variances not assumed | | | .110 | 57.24 | .913 | .06667 | .60698 | -1.1486 | 1.2820 |

Experimental Group and Paired Samples t-test

Table 6 represents the data regarding paired samples for the synchronous virtual class. In this table, some numerical information as the mean data, the learners' numbers, deviation findings, and errors are contained. Accordingly, in the first column for the pretest, the mean point is

20.7333, while in the first column for the post-test the mean point is 25.0000, depicting a considerable difference between the pretest and post-test mean points. In line with that, the learners' post-test scores were higher than the students' pretest scores in the synchronous virtual group. Thus, the conclusion would be that the treatment had a good effect on the performance of the learners in the synchronous virtual learning environment.

Table 6

Numerical Data for Synchronous Virtual Class Using t-test
Statistics for Paired Samples

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|-----------|---------|----|----------------|-----------------|
| Pair 1 | pretest | 20.7333 | 30 | 2.21178 | .40381 |
| | post-test | 25.0000 | 30 | 3.21634 | .58722 |

The following table shows Paired sample correlations for the synchronous virtual group. In table 6, the students' number, the correlation coefficient, and the significance rate are expressed. The treatment was effective since the number in the last part is .00, which is smaller than the critical number (.05). Additionally, based on table 7, the significance level (2-tailed) is zero in the last column (less than .05), which illustrates that the treatment was effective, which means the students had better results on the post-test than the pretest.

Table 7

Correlations for the Synchronous Online Setting

| | | N | Correlation | Sig. |
|--------|--------------------|----|-------------|------|
| Pair 1 | pretest & posttest | 30 | .960 | .000 |

Table 8

Paired Differences and the Synchronous Online Class

| | | Paired Differences | | | | | | | |
|--------|--------------------|--------------------|----------------|-----------------|---|--------|--------|----|-----------------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | t | df | Sig. (2-tailed) |
| | | | | | Lower | Upper | | | |
| Pair 1 | pretest - posttest | 4.26667 | 1.25762 | .22961 | -4.73627 | 3.7970 | 18.582 | 29 | .000 |

Post-test and Independent Samples t-test

An independent samples t-test was run to the participants' post-test scores so as to determine the differences between the two classes regarding their reading comprehension capacity. The descriptive data for the post-test are represented in Table 8. As such, plenty of numerical data including; students' numbers, the average, deviation data, and errors according to a high level of intermission for the two classes are depicted in the following table. Based on this table, the number for the synchronous online setting is 25.0000, whereas the mean point for the asynchronous virtual environment is 23.1667.

Equal Variances for the post-test and the results are expressed in table 9. According to this table, the significance rate (2-tailed) is 0.028 which is illustrated in the fifth column. The conclusion would be that the control class and the experimental setting were statistically different in relation to their reading comprehension ability because the level of significance (0.028) is less than the cut-off point (0.05). It means that the treatment was effective. As such, in the synchronous virtual learning class, the students' performance on the post-test was a lot better as compared to the participant's performance in the asynchronous virtual learning group. Averagely, students' points in the treatment class were greater than learners' points in the control class on the post-test.

Table 9*The t-test of Independent Type and Post-test Numerical Data*

| Group Statistics | | | | | |
|------------------|--------------|----|---------|----------------|-----------------|
| | Modes | N | Mean | Std. Deviation | Std. Error Mean |
| Scores | synchronous | 30 | 25.0000 | 3.21634 | .58722 |
| | asynchronous | 30 | 23.1667 | 3.07474 | .56137 |

Table 10*The Equal Variances and Post-test*

| Independent Samples Test | | | | | | | | | | |
|--------------------------|-----------------------------|---|------|-------|------------------------------|-----------------|-----------------|-----------------------|---|---------|
| | | Levene's Test for Equality of Variances | | | t-test for Equality of Means | | | | | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Scores | Equal variances assumed | .053 | .818 | 2.257 | 58 | .028 | 1.83333 | .81238 | .20718 | 3.45949 |
| | Equal variances not assumed | | | 2.257 | 57.883 | .028 | 1.83333 | .81238 | .20711 | 3.45956 |

Discussion

This research study examined the impact of a synchronous virtual learning setting on the reading knowledge of intermediate university EFL learners. The major purpose of the investigation was to study the fundamental influence of a synchronous online learning setting on the reading capacity of intermediate learners whose major was translation. The first research question had to probe the effect of a synchronous virtual learning setting on the reading comprehension of Iranian undergraduate EFL learners. Considering the results obtained from the paired samples t-test of the experimental group, the mean score of the posttest of the experimental group is much higher than their mean score on the pretest. Thus, the treatment had a good effect on the performance of the learners in the synchronous virtual learning environment.

In line with Wang and Reeves (2007), it was revealed that the reading comprehension of undergraduate intermediate EFL learners could be considerably affected by a synchronous virtual learning setting. Wang and Reeves discovered that since Internet-based learning has been increased, the number of students in online learning opportunities is rising. Because of the increased availability of online learning, students from all backgrounds, geographic locations, and achievement levels may have access to online settings.

The second research question of this investigation dealt with the relationship between synchronous and asynchronous formats of delivery in the virtual learning setting in terms of their effects on reading comprehension competency. According to the results of the independent samples t-test, the control class and the experimental setting were statistically different in relation to their reading comprehension ability because the level of significance (0.028) is less than the cut-off point meaning that the treatment was effective. Hence, in the synchronous virtual learning class, the student's performance on the post-test was a lot better as compared to the participant's performance in the asynchronous virtual learning group. Averagely, students' points in the treatment class were greater than learners' points in the control class on the post-test.

A flexible method for learners who are acquiring the English language and have tight schedules is to expose themselves to online learning opportunities. In addition, instructors should provide a convenient condition for learners who seek success throughout the entire semester. In agreement with Akbari, Heidari, and Chalak (2020), instructors have to provide the support that the students need and the environment should be established conveniently all over the experimentation. The support can be either through peers or through the instructor. Not only the instructor but also fellow students can assist in the learning process. The students in the experimental class who were trained via technological devices and were supported by the instructor over the semester enhanced more than the other two classes.

Based on the findings of the last two tests in the results section, the reading knowledge of intermediate university learners could be significantly impacted by a synchronous virtual learning setting. Furthermore, regarding the second research question, it should be mentioned that the differences between synchronous and asynchronous formats were significant in terms of their impacts on reading comprehension ability.

Conclusion

The present investigation was oriented to the investigation of the impact of a synchronous online setting on the reading knowledge of Iranian intermediate university learners whose major was translation. Particularly, learners who have difficulty attending the classes in part due to geographical distance and temporal variation could be brought together by a synchronous virtual learning setting. As a result, students' performance regarding language skills in general and students' scores concerning reading capacity, in particular, can be influenced by the integration of a synchronous virtual learning environment.

The synchronous virtual learning class achieved higher scores on the reading comprehension test as compared to that of the control class based on the findings of the samples t-test of independent type. In addition, the reading comprehension tasks were answered more properly and confidently by learners in the synchronous virtual learning setting. Accordingly, the mean point for the treatment group was greater than the mean point for the non-treatment class. Therefore, the reading knowledge of translation students can be improved by the integration of a synchronous virtual setting.

Notably, curriculum designers, EFL instructors, and materials developers may practically apply the results of this investigation. Furthermore, the effect of a synchronous virtual learning setting and the findings of the present investigation can be helpful for school principals and lesson planners who seek to have successful classes. Moreover, the results of this investigation

can provide assistance for students who not only intend to enhance their reading potential but also plan to learn English via a synchronous virtual setting.

Only students whose major was translation at the university participated in this investigation and learners majoring in TEFL and linguistics did not take part in this study. Additionally, this examination emphasized university learners and did not account for school students so it was another limitation of the article. Students of state university and Payam Noor University were not selected for this research study, but rather students of Islamic Azad University were chosen.

Various pedagogical settings such as private institutes, high schools, and language schools may be targeted for this investigation. In addition, students from other towns and areas with various language schemata, and English levels of knowledge can be selected as participants of this research study. Finally, this research article can be replicated abroad using non-native speakers and immigrant subjects and both genders aged differently can be nominated as participants of the study.

References

- Abeles, T. (1998). The Academy in a Wired World. *Futures*, 30(7), 606.
- Akbari, J., Tabrizi, H. H., & Chalak, A. (2020). Effectiveness of virtual vs. non-virtual teaching in improving reading comprehension of Iranian undergraduate EFL students. *Turkish Online Journal of Distance Education*, 22(2), 272-283.
- DiPietro, M., Ferdig, R. E., Black, E. W., & Preston, M. (2008). Best practices in teaching K-12 online: Lessons learned from Michigan Virtual School teachers. *Journal of interactive online learning*, 7(1), 10-35.
- Faircloth, B. S., & Hamm, J. V. (2011). The dynamic reality of adolescent peer networks and sense of belonging. *Merrill-Palmer Quarterly*, 57(1), 48-72. Retrieved from www.wsupress.wayne.edu/journals/merrill-palmer-quarterly
- Ghourchian, N. G., & Arasteh, H. R., & Jafari, P. (2004). *Encyclopedia of Higher Education*. Ministry of Science, Research and Technology the Great Persian Encyclopedia Foundation. Vol.1, PP.511-522
- Guri-Rosenblit, S. (2009). Distance education in the digital age: Common misconceptions and challenging tasks. *International Journal of E-Learning & Distance Education/Revue internationale du e-learning et la formation à distance*, 23(2), 105-122.
- Harting, K., & Erthal, M. J. (2005). History of distance learning. *Information technology, learning, and performance journal*, 23(1), 35.
- Harvey, D., Greer, D., Basham, J., & Hu, B. (2014). From the student perspective: Experiences of middle and high school students in online learning. *The American Journal of Distance Education*, 28, 14-26. doi:10.1080/08923647.2014.868739
- Najafi, H., & Heidari, M. (2019). Blended learning and academic achievement: A meta-analysis. *Quarterly of Iranian Distance Education Journal*, 1(3), 39-48.
- Noam, E. (1995). Electronics and the Dim Future of the University. *Science*, 270(13):247-249
- Picciano, A. G., & Seaman, J. (2007). *K-12 online learning: A survey of US school district administrators*: ERIC.
- Tracey, M. W., & Richey, R. C. (2005). The evolution of distance education. *Distance Learning*, 2(6), 17.
- Wang, C. M., & Reeves, T. C. (2007). Synchronous online learning experiences: The perspectives of international students from Taiwan. *Educational Media International*, 44(4), 339-356.



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