

Effectiveness of Flipped Classroom (FC) Method on the Development of English language learning of the High School Students in Ahwaz

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ABSTRACT

Given its being international, English language teaching methods are very critical in non-English speaking countries. This study examined the effect of the FC method compared to traditional method on the English course of 9th grade using pre-test, post-test and follow-up. The study was done using two classes as control (39 subjects) and two classes as the experimental group (38 subjects) selected using multi-stage random cluster sampling from both male and female genders in a three-month period. The four basic communication skills - reading, writing, speaking and hearing - were examined. The results indicated that FC method developed the communication skills of the 9th grade students of Ahwaz regarding two skills of speaking and reading. Based on the research result, it is recommended to use flipped classroom method to develop students' English learning in speaking and reading skills.

Key words: FC method, English Language Teaching, Basic Communication Skills, High School, Ahwaz

INTRODUCTION

The significance of teaching international language as the main means of communication in the age of communication is vivid to everyone. Thus, one of the needs of the changing world today is teaching the language for wider and more effective communication. Considering teaching English, despite its spread, teaching methods are not always synchronized with the changing requirements of the students, and as a subject, English is usually taught traditionally. However, the development of communication technologies and new technologies are supposed to be used to enhance education. Creative teachers seek teaching methods to enhance learning and improve the students' motivation for learning (Johnson et al., 2014).

Nonetheless, in most cases, the students learn English in undeveloped ways such as memorizing, practicing, and repeating using traditional methods. Their exams are still being designed for measuring the lowest levels of cognition, including memorization and understanding, whereas real-world communication calls for different skills at higher levels of cognition such as analysis, evaluation, and creation. Indeed, these three skills are the high level of thinking showing the strength of learning enabling the person to have a role in activities like establishing oral or written communication, group work, creativity, and critical thinking. Many of the projects regarding English language teaching have admitted that most English language classes as a second or foreign

language still use teacher-centered approach. Specially, speech lecture style leading to mismatch of the content with the needs and interests of the students, similarity with the real world and reduced efforts on their side to learn (Brown, 2015; Macaro et al., 2015). To overcome such a rigorous and non-productive method that transfers superficial knowledge by a non-flexible and dull educational structure (e.g. lectures, assignments, tests, studies to get scores in tests and parrot-fashioned learning), many educators have mentioned the importance of creating student-centered learning environment, both within and outside the classroom (Brown, 2015; Ellis, 2012).

In a study entitled "The pathology of English language curriculum from the teachers and students' perspective," Behrouzi et al. (2013) found most important problems of English language curriculum. These problems were using inappropriate teaching methods and patterns, lack of facilities, illogical evaluation approaches, lack of a practical look at English language learning, and curriculum elements such as lack of cultural background, the inability to use new and modern methods, using inappropriate contents and the lack of language training are among language curriculum. Using new technologies wisely according to the individual differences of the students' in English learning takes classroom education to higher levels of Bloom's cognitive domains.

FC method recognized as one of the new and pedagogical educational models that depends on technology and is growing (Jensen et al., 2015). In FC method, contrary to

the traditional lectures, the students have access to see the videos, websites, blogs, and the lectures recorded wherever, whenever, and prior to the classroom and enter the classroom with the willingness to participate collaboratively (Bergmann & Sams, 2015; Bergmann & Sams, 2012). The valuable class time is spent on active learning activities such as individual exercises, small group exercises and case studies. FC method guarantees the comprehensive activeness of the classroom, so the learner will not be a mere inactive receiver of contents through traditional lecture (Keengwe, 2014; Keengwe, 2015).

One of the advantages of this model is its attractiveness for people with different learning styles. FC enhances comprehensive involvement through different ways, such as viewing videos prior to the classroom, participating in collaborative activities, active classroom learning and engaging with the teacher during conflicting class activities, thus has the potential for focusing on various learning styles of learners (Matsuda et al. 2017). In this method, the teacher changes his role from information transmitter to facilitator and training guide. The teacher gives personal feedback to the learners and has a more instructive and assisting plan in the process of teaching (Schwartz, 2014). As in the classroom, the lesson is used in the application of concepts and innovative activities, rather than memorizing the content and facts by learners, they will gain a deeper understanding of the educational material by allowing comprehensive knowledge of the subject. Leading lectures at home and tackling concepts in the classroom with the help of a teacher can provide a comprehensive learning experience (Fawley, 2014).

As a unique approach, FC method transforms the role of assignment and classroom activities. In the traditional teaching method, the students used to learn the new items in the classroom through lectures and practiced at home. In FC method, the students learn the contents at home by the educational contents and practice skills in the classroom. This creates an active and interactive learning environment where the teacher plays the role of a navigator and guides the students while using concepts and actively participating in curriculum subjects (Rabidoux & Rottmann, 2018). When the teacher designs and presents a video file tailored to the subject, classroom time focuses on student involvement. Active learning achieved through questions, discussions, roundtables, exploratory, artistic and applied activities that lead to active student participation that is a principle in FC classroom model. According to Honeycutt (2016) and Torkelson (2012) FC is a new teaching method that gives learning back to the learners, enabling the teacher to facilitate the learning of individual students according to their individual needs. FC is an educational strategy with two components: learning activities, group engagement in classroom, and direct individual instruction with a computer outside the classroom. In FC method, the main and challenging issue is to find suitable training activities, projects, and homework that require thinking skills. One of the strengths of this approach is involving the teacher in designing classroom's practical activities and subjects. The significant point is that in this method,

thinking is about learning outcomes rather than the learning content (Swart, 2017; Cheung et al., 2017).

In the traditional teaching method, the learner tries to learn what the teacher taught at that moment. The learner cannot stop him for further reflection, and while analyzing the speaker's words in his mind he may miss the key points. In FC method, the learner controls the training session with pre-recorded educational videos. This method also provides a great help for people with hearing impairments or trouble with language proficiency.

Regarding this, Chen Hisseh et al. (2016) believe that FC environment should provide an active and interactive learning environment where the teachers are guiding the learners to apply concepts and creative engagement in curriculum subjects. Additionally, Gough et al. (2017) show that FC approach is a great platform for active learning, such as supporting learner needs with a variety of learning preferences. Thus, FC needs learners who master the basic knowledge prior to the classroom and can develop high-level learning exercises during the classroom. Active learner-based learning activities in the classroom are designed to enhance learners in complex content discussions and to develop collaborative and interactive learning skills through peers and instructors, and provide teachers with the opportunity to make progress in learning of the learners (White et al., 2015).

Regarding this, Chen Hsieh et al. (2016) argue that FC environment should provide an active and interactive learning environment where the teachers instruct learners to apply concepts and creative engagement in curriculum subjects. Furthermore Gough et al. (2017) show that FC method is a great platform for active learning, such as supporting learner needs with a variety of learning preferences. Thus, FC needs learners who master the basic knowledge prior to the classroom and can develop high-level learning exercises during the classroom. Student-centered active learning activities in the classroom are designed to enhance learners in complex content discussions and to develop collaborative and interactive learning skills through peers and instructors, and enable the teachers to make progresses in the learning of the learners (White et al., 2015).

Assigning class time to discussion about learning and doing assignments gives the teacher the opportunity to correct common mistakes of learners, identify, and resolve learning errors. In addition, team projects reinforce the spirit of participation allowing students to learn from each other and helping others accomplish their assignments to better learn.

For a FC, there is no single method, and in general, a FC is said to be in any class in which the classroom used to be used for video tutorials before the class is used to solve homework in class. In a general model, the learners should watch a few short videos each session before class. Online tests and exercises can be used to measure student learning as well. The teacher may manage class discussions or let the class environment be such as a live studio, where the students can practice their own learning and collaborate. As an observer, the instructor suggests many strategies, clarifies the content of the course, and monitors the learner's progression. Furthermore, the teachers can form larger groups for problem solving or hard work. As this teaching meth-

od makes great changes to how the class is organized, some professors use only some of the features of FC model or hold a few FC sessions.

The study examines the degree of progress in basic communication skills of high school students in English using FC method. The basic communication skills mean the four skills of listening, speaking, reading and writing.

The aim and goals of current study are the followings:

Aim

Effectiveness of FC learning method on the development of English language learning of the high school students in Ahwaz.

Goals

- 1-1. The Effectiveness of FC method on development of English listening skill of the high school students in Ahwaz.
- 1-2. The Effectiveness of FC method on development of English writing skill of the high school students in Ahwaz.
- 1-3. The Effectiveness of FC method on development of English speaking skill of the high school students in Ahwaz.
- 1-4. The Effectiveness of FC method on development of English reading skill of the high school students in Ahwaz.

Hypotheses

- 1-1. The FC method has a significant effect on development of English listening skill of the high school students in Ahwaz.
- 1-2. The FC method has a significant effect on development of English writing skill of the high school students in Ahwaz.
- 1-3. The FC method has a significant effect on development of English speaking skill of the high school students in Ahwaz.
- 1-4. The FC method has a significant effect on development of English reading skill of the high school students in Ahwaz.

METHODOLOGY

The stud was applied regarding the purpose and quasi-experimental with pre-test-post-test design and control group in terms of nature. The population was male and female students from the ninth grade from four high schools in Ahwaz in 2017-2018. From among the students, two girls' classes (18 and 20 subjects) and two boys' classes (19 and 20

subjects) were randomly selected using multi-stage cluster sampling method, were divided into experimental, and control groups. In the selection, 2 schools, and from each school, two nine-grade classes were selected randomly from the list of first secondary schools in the city. From these two classes, 38 students were randomly assigned into the experimental group and 39 into the control group. The four English skills (listening, writing, speaking and reading) were pre-tested simultaneously for the both groups before the intervention of the independent variable of English language instruction in FC method. For the experimental group, FC method was taught and for the control group the English teacher taught of the relevant books in a conventional (traditional) way during 24 sessions. The study began in October and lasted for about 3 months - every week 2 lessons of 90 minutes - the students were trained in the four skills of English language. In the listening, speaking and reading skills, the students' skills were rated subjectively by scores ranging from 0 to 5. However, in writing skills, a multiple-choice test was given to students and a scored from 0 to 5 was given to them.

DATA ANALYSIS USING DESCRIPTIVE STATISTICS

In this section, the research report uses tables and charts to analyze the data descriptively. It should be noted that SPSS 22 was used to provide table content.

According to the results of Table 1.4, it is seen that 47.4% of the students are girls and 52.6% are boys were in the experimental group. However, in the control group, 51.3% were girls and 48.7% boys.

According to the results obtained in Table2, the mean of English listening in the experimental group in the pre-test was 2.58 with a standard deviation of 0.858 and in the post-test 2.63 with a standard deviation of 0.913 and in the follow-up phase 2.66 with a standard deviation of 0.88. Moreover, the mean of English listening skills in the control group in the pre-test was 2.51 with a standard deviation of 0.942, in the post-test 2.54 with the standard deviation of 1.07 and in the follow-up 2.56 with a standard deviation of 1.04. The results showed no significant changes in listening to the English in the control and experimental groups in the post-test and follow-up.

According to the results obtained in Table 3, the mean of English writing in the experimental group in the pre-test was 2.79 with a standard deviation of 0.84 and in the post-test 2.84 with a standard deviation of 0.789 and in the follow-up phase 2.84 with a standard deviation of 0.78. Moreover, the mean of English writing skill in the control group in the pre-test was 2.74 with a standard deviation of 0.99, in the post-test 2.72 with the standard deviation of 1.05 and in the follow-up

Table 1. Distribution of subjects by gender

| Gender | Control group | | Experiential group | | Total | |
|--------|---------------|---------|--------------------|---------|-----------|---------|
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| Boy | 20 | 51.3 | 18 | 47.4 | 38 | 49.4 |
| Girl | 19 | 48.7 | 20 | 52.6 | 39 | 50.6 |
| Total | 39 | 100 | 38 | 100 | 77 | 100 |

Table 2. Mean and standard deviation of listening scores in test and control groups at pre-test, post-test and follow-up

| Variable | Group | Pre-test | | Post-test | | Follow-up | |
|-----------|--------------|----------|-------|-----------|-------|-----------|------|
| | | Mean | SD | Mean | SD | Mean | SD |
| Listening | Control | 2.51 | 0.942 | 2.54 | 1.07 | 2.56 | 1.04 |
| | Experimental | 2.58 | 0.858 | 2.63 | 0.913 | 2.66 | 0.78 |

Table 3. Mean and standard deviation of writing skill scores in experimental and control groups at pre-test, post-test, and follow-up

| Variable | Group | Pre-test | | Post-test | | Follow-up | |
|----------|--------------|----------|------|-----------|-------|-----------|------|
| | | Mean | SD | Mean | SD | Mean | SD |
| Writing | Control | 2.74 | 0.99 | 2.72 | 1.05 | 2.77 | 1.06 |
| | Experimental | 2.79 | 0.84 | 2.84 | 0.789 | 2.84 | 0.78 |

2.77 with a standard deviation of 1.06. The results showed no significant changes in writing of English in the control and experimental groups in the post-test and follow-up.

According to the results obtained in Table 4, the mean of English speaking in the experimental group in the pre-test was 2.47 with a standard deviation of 0.79 and in the post-test 3.26 with a standard deviation of 0.601 and in the follow-up phase 3.34 with a standard deviation of 0.78. Moreover, the mean of English speaking skill in the control group in the pre-test was 2.46 with a standard deviation of 0.85, in the post-test 2.49 with the standard deviation of 1.04 and in the follow-up 2.49 with a standard deviation of 0.94. The results showed significant changes in speaking of English in the experimental group but not in the control group in the post-test and follow-up.

According to the results obtained in Table 5, the mean of English reading in the experimental group in the pre-test was 2.76 with a standard deviation of 0.82 and in the post-test 3.21 with a standard deviation of 0.81 and in the follow-up phase 3.29 with a standard deviation of 0.89. Moreover, the mean of English reading skill in the control group in the pre-test was 2.77 with a standard deviation of 0.93, in the post-test 2.74 with the standard deviation of 0.96 and in the follow-up 2.77 with a standard deviation of 0.90. The results showed significant changes in reading of English in the experimental group but not in the control group in the post-test and follow-up.

The following is a diagram of each of the components of the research in the two groups in the pre-test, post-test and follow-up stages:

INFERENCE RESULTS

After describing the demographic characteristics, the results of hypotheses testing are examined. Multivariate analysis of covariance (MANCOVA) test was used to test the hypotheses.

According to the present study, with pre-test and post-test, MANOVA was used to analyze the data and to control the effect of pre-test and post-test. In this analysis, the following conditions should be observed to trust the results obtained.

LINEARITY

In this study, the pre-test of listening, speaking, writing and reading English were as auxiliary variables (covariates) and their post-tests were the dependent variables. The linearity

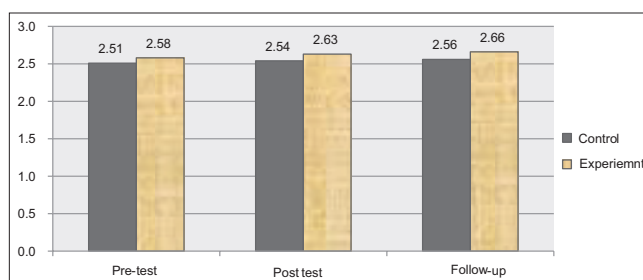


Figure 1. Listening means for the experimental and control groups in pre-test, post-test and follow-up

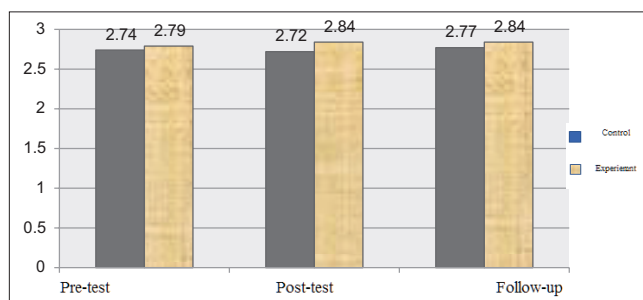


Figure 2. Writing means for the experimental and control groups in pre-test, post-test and follow-up

of the relationship between each dependent variable and its covariate was tested. The correlation coefficient or the relationship between pre-test and post-test of listening skill was $r=0.451$, writing skill $r=0.593$, speaking skill $r=0.868$, and reading skill $r=0.767$. Additionally, the pre-test correlation coefficient of listening skill was $r=0.419$, writing skill $r=0.554$, speaking skill $r=0.840$ and reading skill $r=0.627$, and the significance level of the relationship's linearity in all three correlation coefficients was significant at the level of $p<0.05$. According to the data obtained, the linear assumption for all three variables is established.

MULTI-COLLINEARITY

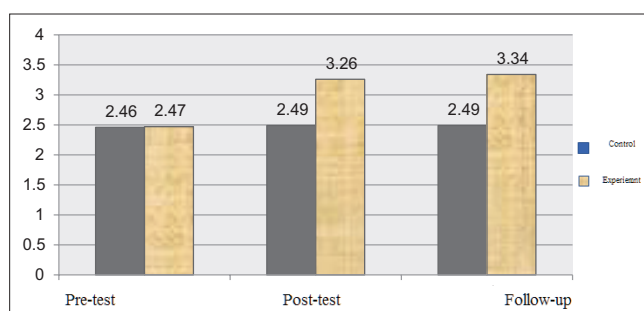
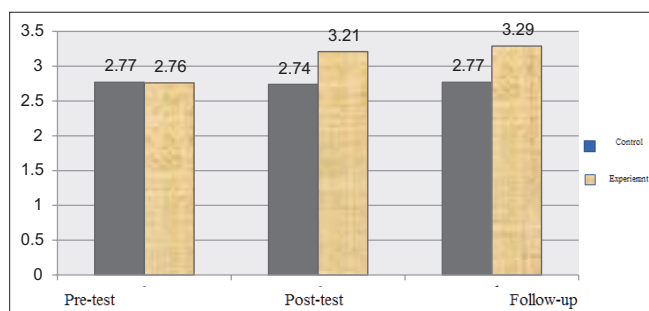
When the auxiliary variables (covariates) have a high correlation of $r=0.80$, we face conditions called multicollinearity and in fact the correlation coefficients should be less than 0.80. This is an important phenomenon that should be avoided in

Table 4. Mean and standard deviation of speaking skill scores in experimental and control groups at pre-test, post-test, and follow-up

| Variable | Group | Pre-test | | Post-test | | Follow-up | |
|----------|--------------|----------|------|-----------|-------|-----------|------|
| | | Mean | SD | Mean | SD | Mean | SD |
| Speaking | Control | 2.46 | 0.85 | 2.49 | 1.04 | 2.49 | 0.94 |
| | Experimental | 2.47 | 0.79 | 3.26 | 0.601 | 3.34 | 0.78 |

Table 5. Mean and standard deviation of reading skill scores in experimental and control groups at pre-test, post-test, and follow-up

| Variable | Group | Pre-test | | Post-test | | Follow-up | |
|----------|--------------|----------|------|-----------|------|-----------|------|
| | | Mean | SD | Mean | SD | Mean | SD |
| Reading | Control | 2.77 | 0.93 | 2.74 | 0.96 | 2.77 | 0.90 |
| | Experimental | 2.76 | 0.82 | 3.21 | 0.81 | 3.29 | 0.89 |

**Figure 3.** Speaking means for the experimental and control groups in pre-test, post-test and follow-up**Figure 4.** Reading means for the experimental and control groups in pre-test, post-test and follow-up

analysis of multivariate tests (Garson, 2012). In the present study, pre-tests of listening, writing, speaking and reading skills were considered as auxiliary variables (covariates).

The correlation between the pre-tests of the variables of listening, writing, speaking and reading skills is given in Table 6. Given the obtained correlations, one can state that the multi-collinearity assumption between the auxiliary variables (covariates) is observed for all variables (the value of the correlation coefficient is less than 0.8). Thus, as all the assumptions are observed, it is possible to perform covariance analysis.

One of the assumptions of the multivariate analysis of covariance is examining the homogeneity of variance-covariance matrices, for which purpose, box test has been used. The results are presented in Table 7:

According to the results obtained in Table 7, it is observed that the value of $F=1.106$, $Box, M=4.328$, and $P=0.371$ on

the assumption of variance-covariance equality of the variables in two groups in the population are calculated. The significance of the Box test in the test above is greater than 0.05, so it is concluded that the variance-covariance matrix is homogeneous.

According to the results of Table 8, it is seen that for the listening skill, $F = 0.573$ and $P = 0.565$, for the writing skill, $F = 0.271$ and $P = 0.763$, for speaking $P = 0.900$ and $F = 0.1006$, and for the reading, $F = 0.024$ and $P = 0.976$. In all cases, the level of significance calculated for Levene's test is greater than the significance level of the test (0.05), which results in confirmation of the homogeneity of the variances.

Among the other important assumptions is the normality of research data. Kolmogorov-Smirnov test was used to examine the normal distribution of research data. We select the null hypothesis so that the data are normal and we use the Kolmogorov-Smirnov test at 5% level, the results of which are presented in Table 9.

As is seen, for all the variables, the significance level of the test is higher than 0.05, so the assumption of the normality of the data is confirmed. Another way is to look at the value of Z-Kolmogorov-Smirnov in the table. If the value is less than +1.96 and greater than -1.96, with 95% confidence we conclude no difference between the observed and the expected frequencies. In other words, the distribution of population is normal. Thus, by confirmation of normality, we use Pearson's parametric test to test the relationship between the variables and F test for the mean tests of the parametric tests.

Another important homogeneity of multivariate covariance analysis is the coincidence of regression coefficients. It should be noted that the homogeneity test of regression coefficients was evaluated through pre-test interaction of listening skills, writing skills, speaking skills and reading skills with the post-test.

According to Table 10, for each dependent variable, the interaction between the pre-tests with the variable is not significant showing the homogeneity of the regression coefficients (in all cases, the value of the significant level of the calculated is more than 0.05).

According to Table 11, for each dependent variable, the interaction between the pre-tests with the independent variable is not significant showing the homogeneity of the re-

gression coefficients (in all cases, the value of the significant level of the calculated is more than 0.05).

Thus, the assumption of homogeneity of regression coefficients is established as well. Considering the establishment of multi-variable covariance analysis assumptions, one can use F-test of multivariate covariance (MANCOVA).

Testing the Hypotheses

1. Does language learning through FC method have a significant effect on listening skills, writing skills, speaking skills and reading skills?

According to the results in Table 12, it is seen that the significance level of each of the tests, Pillai's trace, Wilkes Lambda Test, Hotelling's T Test, and Largest root test for MANCOVA on the mean post-test scores of listening, writing, speaking and reading among the respondents of control and experiment group with the pre-test controlled is less than 0.05. Thus, one can conclude a significant difference between the mean scores of listening, writing, speaking and reading skills of the experimental and control groups.

Table 6. Matrix of correlation coefficients between pre-test of covariates

| Variables | Listening | Writing | Speaking | Reading |
|-----------|-----------|---------|----------|---------|
| Listening | 1 | | | |
| Writing | 0.482 | 1 | | |
| Speaking | 0.465 | 0.492 | 1 | |
| Reading | 0.400 | 0.486 | 0.439 | 1 |

Table 7. Box test results on the presumption of variance-covariance equality of the research variables in the two groups

| Variables | F | Box statistic | Sig. |
|-----------|-------|---------------|-------|
| | 1.106 | 4.328 | 0.371 |

Table 8. The results of Levene's test about the presumption of the equality of components of two groups in the population

| Variable | F | First degree of freedom | Second degree of freedom | Sig. |
|-----------|-------|-------------------------|--------------------------|-------|
| Listening | 0.573 | 2 | 228 | 0.565 |
| Writing | 0.271 | 2 | 228 | 0.763 |
| Speaking | 0.106 | 2 | 228 | 0.900 |
| Reading | 0.024 | 2 | 228 | 0.976 |

Table 9. Results of the Kolmogorov-Smirnov test on the presumption of the distribution of the components of the research

| Variable | Control group | | Experimental group | |
|-----------|--------------------|-------|--------------------|-------|
| | Kolmogorov-Smirnov | | Kolmogorov-Smirnov | |
| | Statistic | Sig. | Statistic | Sig. |
| Listening | 1.03 | 10.90 | 1.09 | 0.117 |
| Writing | 1.25 | 0.088 | 1.025 | 0.102 |
| Speaking | 0.619 | 0.838 | 0.652 | 0.922 |
| Reading | 0.727 | 0.666 | 0.789 | 0.363 |

Thus, it is concluded that MANCOVA is generally significant. The results of the analysis show that FC language learning method has a significant effect on listening, writing, speaking and reading skills.

Then, using one-variable covariance analysis in MANCOVA text on the mean of the post-test scores, the components listening, writing, speaking and reading were evaluated among the respondents of the test and control groups with the pre-test controlled and the research hypotheses were tested.

In doing so, MANCOVA was used and the results of AVOVA in the text of MANCOVA on the mean post-test of listening, writing, speaking and reading skills of the experimental and control groups with the pre-test controlled were calculated and was given separately for each of the hypotheses as follows:

- 1-1. The FC method has a significant effect on development of English listening skill of the high school students in Ahwaz.
- 1-2. The FC method has a significant effect on development of English writing skill of the high school students in Ahwaz.
- 1-3. The FC method has a significant effect on development of English speaking skill of the high school students in Ahwaz.
- 1-4. The FC method has a significant effect on development of English reading skill of the high school students in Ahwaz.

The results of Table 13 showed the results of MANCOVA for examining the difference between mean of the post-test scores for listening, writing, speaking and reading skills among the experimental and control groups with the pre-test controlled. According to the calculated results, the significance level of the test is less than 0.05 ($p < 0.05$) only for the difference in the score of speaking and reading skills in the control and experimental groups for the post-test. Thus, the hypotheses 1-1 and 1-2 were rejected and hypotheses 1-3 and 1-4 were confirmed, so FC language learning method has a significant effect on speaking and reading skills.

Question 2: Is the effect of FC language learning method continuous on listening, writing, speaking and reading skills?

According to the results in Table 14, it is seen that the significance level of each of the tests, Pillai's trace, Wilkes Lambda Test, Hotelling's T Test, and Largest root test for MANCOVA on the mean follow-up scores of listening, writing, speaking and reading among the respondents of control and experiment group with the pre-test controlled

is less than 0.05. Thus, one can conclude a significant difference between the mean scores of listening, writing, speaking and reading skills of the experimental and control groups.

Table 10. The results of the testing the presumption of homogeneity of the slopes of the regression line of the variables in two groups in population

| Variable | Source of change | Stages: Pre-test-Post-test | |
|-----------|------------------------------|-------------------------------|-------|
| | | F (Interaction) | Sig. |
| Listening | Interaction * Pre-test group | 2.325 | 0.151 |
| Writing | | 1.742 | 0.301 |
| Speaking | | 2.408 | 0.098 |
| Reading | | 1.415 | 0.358 |

Table 11. The results of the test of Homogeneity analysis of slope regression line of the variables in two groups

| Variable | Change source | Stages: Pre-test and follow-up | |
|-----------|------------------------------|-----------------------------------|-------|
| | | F (Interaction) | Sig. |
| Listening | Interaction * Pre-test group | 2.041 | 0.241 |
| Writing | | 1.618 | 0.269 |
| Speaking | | 1.920 | 0.168 |
| Reading | | 1.701 | 0.235 |

Table 12. The results of MANKOVA on the mean of the post-test scores of listening, writing, speaking, and reading skills of the experimental and control groups with pre-test

| Test | Value | DF assumption | DF error | F | Sig. (p) | Eta square | Power |
|--------------------|-------|---------------|----------|-------|----------|------------|-------|
| Pillai's trace | 0.65 | 8 | 298 | 17.92 | 0.000 | 0.325 | 1 |
| Wilkes Lambda Test | 0.403 | 8 | 296 | 21.30 | 0.000 | 0.365 | 1 |
| Hotelling's T Test | 1.35 | 8 | 294 | 24.85 | 0.000 | 0.403 | 1 |
| Largest root test | 1.24 | 4 | 149 | 46.49 | 0.000 | 0.555 | 1 |

Table 13. The results of ANOVA in MANCOVA text on the mean post-test scores of listening, writing, speaking and reading skills of experimental and control groups with pre-test controlled

| Dependent variable | Change source | Sum of squares | Degree of freedom | Mean squares | F | Sig. (p) | Eta square | Power |
|--------------------|---------------|----------------|-------------------|--------------|--------|----------|------------|-------|
| Listening | Pre-test | 92.90 | 2 | 46.45 | 51.74 | 0.000 | 0.407 | 1 |
| | Group | 0.244 | 1 | 0.244 | 0.272 | 0.603 | 0.002 | 0.081 |
| | Error | 135.54 | 151 | 0.898 | | | | |
| Writing | Pre-test | 108.63 | 2 | 54.317 | 63.69 | 0.000 | 0.458 | 1 |
| | Group | 0.278 | 1 | 0.278 | 0.326 | 0.569 | 0.002 | 0.088 |
| | Error | 128.76 | 151 | 0.853 | | | | |
| Speaking | Pre-test | 73.39 | 2 | 36.69 | 49.52 | 0.000 | 0.369 | 1 |
| | Group | 5.977 | 1 | 5.977 | 8.067 | 0.005 | 0.051 | 0.806 |
| | Error | 11.89 | 151 | 0.741 | | | | |
| Reading | Pre-test | 100.67 | 2 | 50.33 | 63.504 | 0.000 | 0.457 | 1 |
| | Group | 2.044 | 1 | 2.044 | 2.579 | 0.011 | 0.027 | 0.458 |
| | Error | 119.69 | 151 | 0.793 | | | | |

Then, using one-variable covariance analysis in MANCOVA text on the mean of the follow-up scores, the components listening, writing, speaking and reading were evaluated among the respondents of the test and control groups with the pre-test controlled and the research hypotheses were tested.

1-1. The Effect of FC method on development of English listening skill of the high school students in Ahwaz is continuous.

1-2. The Effect of FC method on development of English writing skill of the high school students in Ahwaz is continuous.

1-3. The Effect of FC method on development of English speaking skill of the high school students in Ahwaz is continuous.

1-4. The Effect of FC method on development of English reading skill of the high school students in Ahwaz is continuous.

The results of Table 15 showed the results of MANCOVA for examining the difference between mean of the follow-up scores for listening, writing, speaking and reading skills among the experimental and control groups with the pre-test controlled. According to the calculated results, the significance level of the test is less than 0.05 ($p < 0.05$) only for the difference in the score of speaking and reading skills in the control and experimental groups for the follow-up. Thus, the hypotheses 1-1 and 1-2 were rejected and hypotheses 1-3 and 1-4 were confirmed, so FC language learning method has a continuous effect on speaking and reading skills.

Table 14. The results MANKOVA on the mean scores of follow-up scores for listening, writing, speaking and reading skills for the experimental and control groups with pre-test

| Test | Value | DF assumption | DF error | F | Sig. (p) | Eta square | Power |
|--------------------|-------|---------------|----------|-------|----------|------------|-------|
| Pillai's trace | 0.664 | 8 | 298 | 18.50 | 0.000 | 0.332 | 1 |
| Wilkes Lambda Test | 0.387 | 8 | 296 | 22.49 | 0.000 | 0.378 | 1 |
| Hotelling's T Test | 1.45 | 8 | 294 | 26.72 | 0.000 | 0.421 | 1 |
| Largest root test | 1.358 | 4 | 149 | 50.58 | 0.000 | 0.576 | 1 |

Table 15. The results of ANOVA in MANCOVA text on the mean follow-up scores of listening, writing, speaking and reading skills of experimental and control groups with pre-test controlled

| Dependent variable | Change source | Sum of squares | Degree of freedom | Mean squares | F | Sig. (p) | Eta square | Power |
|--------------------|---------------|----------------|-------------------|--------------|-------|----------|------------|-------|
| Listening | Pre-test | 93.95 | 2 | 46.979 | 56.68 | 0.000 | 0.429 | 1 |
| | Group | 0.246 | 1 | 0.246 | 0.297 | 0.587 | 0.002 | 0.084 |
| | Error | 125.15 | 151 | 0.829 | | | | |
| Writing | Pre-test | 114.01 | 2 | 57.005 | 62.20 | 0.000 | 0.452 | 1 |
| | Group | 0.082 | 1 | 0.082 | 0.090 | 0.7665 | 0.001 | 0.060 |
| | Error | 135.38 | 151 | 0.916 | | | | |
| Speaking | Pre-test | 72.14 | 2 | 36.07 | 47.65 | 0.000 | 0.387 | 1 |
| | Group | 7.235 | 1 | 7.235 | 9.55 | 0.002 | 0.060 | 0.867 |
| | Error | 114.29 | 151 | 0.757 | | | | |
| Reading | Pre-test | 100.53 | 2 | 50.26 | 62.62 | 0.000 | 0.453 | 1 |
| | Group | 2.54 | 1 | 2.54 | 3.170 | 0.017 | 0.031 | 0.424 |
| | Error | 121.19 | 151 | 0.803 | | | | |

CONCLUSION

The security of English language teaching and learning is so significant; especially in the countries, people speak by different languages. Thus, various methods are used for English language teaching in different countries. Among the methods used to teach English in Iran, can cite the traditional methods of group exploration and so on. The FC teaching method also has been added over the years to teaching methods in the world's educational community, requiring student homework and, finally, learning to be reinforced in the classroom.

The current study examined the effect of FC method on the progress of basic communication skills in English language students of high school students in Ahwaz. The results showing that the FC method has a significant effect on the development of two basic skills of reading and speaking. This effect can indicate that FC provides a suitable space for the exchanging student ideas. The study showed that the development of speaking skill needs more activity in classroom space and the participation of classmates in a face-to-face communication. This communication skills develops in-group activity or at least in a community. On the other hand, developing reading skill calls for discussion and consolidating learning. Indeed, the students studied at home and eventually consolidated it in the classroom, so the skill has drastically improved. Finally, the FC method will propose to develop speaking and reading skills versus traditional methods for other skills development.

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