

## The Effect of Explicit Consciousness-Raising of Autonomous Learning Activities on Iranian EFL Students' Achievement Test Scores

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### Abstract

This study set out to examine the effect of explicit consciousness-raising of autonomous learning activities on a group of students' General English achievement test scores following a mixed methods design. At the beginning of the study, four intact classes were selected based on their availability, of which one class was assigned to the experimental group and the others to the control groups, through random assignment. The treatment groups received a 10 session treatment on a number of autonomous learning activities to be done outside the classroom after the midterm exam which functioned as the pretest. At the end of the semester and after the treatment, all the four groups took the final exam (the posttest). An independent-samples t-test was conducted to compare the posttest scores for treatment and no-treatment groups, and one-way ANOVA was run followed by Tukey HSD as a follow-up measure to find out the probable differences between the groups. To check the probable significant differences between students' pretest and posttest scores, a set of paired-samples t-tests was run separately for the experimental group and control group 1. Then, the researchers conducted descriptive analysis related to the questionnaire items and checked the correlation of all the data taken from the tests and the questionnaire items. The results indicated that the treatment significantly led to better test scores in this context, where the eta squared statistic indicated a large effect size. In addition, the semi-structured interview data confirmed the results.

**Keywords:** Consciousness Raising, Autonomous Learning Activities, Treatment, EFL Learners, Achievement Test

### 1. Introduction

At the heart of the notion of autonomy are learners' ability and willingness to make choices independently (Kaur, 2017). In theory, we may define autonomy as "the freedom and ability to manage one's own affairs, which entails the right to make decisions as well" (Scharle & Szabo, 2000, p. 4). Kumaravadivelu (2006) takes into account two views of learner autonomy: narrow and broad. The former focuses on developing an ability in the student to learn how to learn whereas the latter extends beyond that to constitute an ability to learn to liberate as well. While the former regards learning to learn a language as an end in itself, the latter considers learning to learn a language as a means to an end, where the end is learning to liberate.

Autonomy is also defined as "the ability to take charge of one's own learning" where "to take charge of one's learning is to have and to hold the responsibility for all the decisions concerning all aspects of this learning" (Holec, 1981, p. 3). In this regard, Knowles' (1975) assertion is crystal clear: "... there is convincing evidence that people who take the initiative in learning (proactive learners) learn more things and learn better than do people who sit at the feet of teachers, passively waiting to be taught (reactive learners)...They enter into learning more purposefully and with greater motivation" (p. 14).

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Autonomy, has been a common focus for discussion about foreign language teaching for many years now (Holec, 1981; Little, 1991). This popularity is not astonishing, since the concept agrees well with several of our essential pedagogical preoccupations, particularly our view that language learning necessitates the active involvement of learners to become independent from their instructors in their use of language. An autonomous person is defined as one who can make and carry out the choices which control his/her actions. This capacity depends on two main components: ability and willingness.

Littlewood (1996) divides ability and willingness into two components each. The former depends on having both knowledge about the possibilities from which choices have to be made and the necessary skills for performing whatever options seem most acceptable. However, willingness is dependent on both motivation and confidence to take responsibility for the options expected. If a person wants to be successful in acting autonomously, all of these four elements are necessary to be present together.

To reinforce the argument for why teachers should seek to increase the autonomy of their students, Ushioda (2011, p. 227) believes that, autonomy, motivation, and identity are interrelated concepts, where motivated students, “with a social identity, situated in a particular context” are to promote autonomous learning into pedagogical practices that persuade them “to develop and express their own identities through the language they are learning - that is, to be and to become themselves”, and this is in line with Little’s (2004) belief that what the students learn becomes part of their identity.

Although based on recent empirical findings, language teachers and institutes are aware of the importance of promoting autonomous language activities, many of them practically do not value students' outside-class activities, and if they encourage them to do so, they do not depict a clear picture of the ways that the learners can benefit from in order to gradually become autonomous learners. Therefore, this study is to make students aware of the advantages of autonomous learning behaviors and their probable influence on their language learning. To do so, this research intends to explicitly raise students' consciousness of autonomous language learning activities, and it will check its effect on their achievement tests.

### *1.1. Objectives and Significance of the Study*

The present research is an attempt to investigate the effect of explicit consciousness-raising of autonomous learning activities on the students’ performance on achievements tests which include vocabulary and reading comprehension. Moreover, it intends to find which outside classroom autonomous learning activities can attract the students’ attention better than the others.

The present study holds significance in that it seems to be, to the best of the knowledge of the present researchers, one of the rare studies conducted on language learning autonomy in Iran. Since the design of the present study is mixed methods research, and considering its novelty in the Iranian EFL context, one of its advantages would be expanding the depth and breadth of the findings by using the strengths of different methods which in turn might lead to new insights about students’ awareness of their outside autonomous learning activities and the results would influence the present viewpoints of language teachers, curriculum designers, institutes, etc. The present study might persuade language teachers, language institutes and curriculum designers to increasingly emphasize to the learners the importance of self-initiating and of taking responsibility for one’s own learning, and to offer more occasions, equipment and tasks for learners to increase a metacognitive awareness of their continuous leaning. In this regard, there would be a demand on language teachers to help students become aware of their own learning processes.

## **2. Literature Review**

Recently, researchers have focused their attention on empirical studies on learner autonomy to develop their understandings of its nature and its pedagogical implications to the field. Following the Socio Cultural Theory, Kaur (2017) conducted a study on a group of Malay tertiary learners to

probe how far social sources, such as peers, impact their learning of vocabulary items in their preparation for the Malaysian University English Test (MUET). They found that “cultural tools such as the dictionary and guessing meaning from context are useful sources for learning” (p.61). Peers, as social sources, also play a significant role in improving the learners’ affective states, since tasks carried out in groups are valued and held in importance, in accordance with the Malay cultural trait which emphasizes group work and communal activities.

Considering pre-service foreign language teachers' perspectives on learning with technology, Sardegna and Dugartsyrenova (2014) referred to the role of wikis, asynchronous discussion forums and blogs as instances of some autonomous learning activities in increasing the knowledge sharing process and assisting learners to manage and smooth the path for critical thinking, language awareness, self-reflection, and self-assessment processes. Furthermore, according to a recent study in a blended Korean language course which explored students’ perceptions of language achievement and learner autonomy, Ahn (2017) depicted the noteworthiness of autonomous learning awareness and the necessity to cultivate a better realization (both for the teacher and the learner) of learner autonomy.

Moreover, Ahn (2017), Godwin-Jones (2011) and Mohamadpour (2013) stated that when learners possess self-efficacy and high motivation they are able to direct their own learning. Furthermore, Ahn (2017) concluded that such a management of learning, in addition to high level metacognitive processes, creates self-regulated students who are motivated to acquire knowledge successfully. It is worthy of note that some other researchers (Poon, 2013; Tabor, 2007; Vaughan, 2007) explained the necessity to manage learners’ expectations, particularly their opinion that less face to face interaction with their teachers leads to less learning. Their findings emphasized that learners must be motivated “to take more responsibility for and autonomy over their [own] learning” (Poon, 2013, p. 276).

In this regard, Kaur (2014), presupposing that autonomous learning behavior is the avenue to improvement in language ability enabling efficient learning, and improving students' ability in the four language skills, conducted a case study with the aim of probing how teaching practices affect autonomous learning behavior in vocabulary development. This study confirmed the crucial mediating variable of the teachers in developing autonomous learning behavior. The results emphasized positive effect of some of the practices such as preparing the proper pedagogical context, classroom based sufficient aid in materials, and learners’ interests and needs. Also it was mentioned that autonomous learning behavior requires mental readiness, taking greater charge and positive condition for learning, reducing students’ dependence on their teachers and appropriate learning atmosphere.

In a recent study by de Groot-Reuvekamp, Ros and van Boxtel (2018), teachers’ beliefs and behaviors changed during a professional development program where teachers’ instructional behavior seemed to have impacts on students learning gains. This study focused on taking benefit from user-friendly materials leading to autonomy as well as supporting teachers in their learning and teaching. The researchers emphasized that this type of autonomy leading to increased intrinsic motivation is a necessary factor for effective performance. In fact, first teachers received autonomy in their voluntarily use of equipment and materials appropriate for their teaching objectives based on the appropriate context of every session. This influenced both the teacher and the learners’ intrinsic motivation and their feelings of competency and led to successful learning at the end of the survey. Technically speaking, this feeling of competency is in line with self-determination theory of Deci and Ryan (2008).

In line with the afore-mentioned points, Nguyen and Walkinshaw (2018), considering insights from Vietnamese English language teachers trained in Inner-Circle countries, emphasized that teacher autonomy is generally related to internal capacity inherited in teachers’ skill to work within contextual restrictions. They stated that enhanced learner autonomy can be originated from the extent to which individual teachers can cope with institutional or pedagogical restrictions in the

learning context. Such conclusions have been found in the literature such as Little (1995, p.180) who asserted that “language teachers are more likely to succeed in promoting learner autonomy if their own education has encouraged them to be autonomous”.

In keeping with the empirical studies mentioned up to now, Tran and Duong (2018) regarded learners’ recent free and open use of popular applications, chat rooms and messengers in order to keep up communications provoking independence and proactivity in their learning. Meanwhile, they claimed that students appeared to hold reactive autonomy. Although they are able to manage their resources autonomously to take advantage of their learning objectives, they cannot take responsibility for it. They examined the variables enhancing EFL students’ support for or resistance to increasing learner autonomy according to a portfolio-based writing course followed by semi-structured interviews. Their findings depicted personal, academic, and external supporting and resisting factors as three major variables enhancing learner autonomy.

Having examined the effect of individual and group autonomous activities on Iranian EFL learners’ grammatical accuracy, Jafari, Ketabi, and Tavakkoli (2016, p. 65) found that autonomy, contrary to its meaning, can be “both self-directed and socially mediated learning”. They referred to the obtained increased reflection and autonomy due to the collaborative activities in which the paired learners attempted to negotiate meaning with a follow-up individual task as well as collaborative post-task activities. They concluded that instructors must be aware of the fact that “autonomous learning is a learnable skill in the same sense that other academic skills are” (p.66). They advised teachers to enhance the development of this skill by embedding it within their process of language teaching and assessment. In fact, learners need to be taught to “become effective autonomous learners in the same way that they do other generic and discipline-specific skills”.

Considering the impact of fostering learner autonomy through implementing cooperative learning strategies on inferential reading comprehension ability of Iranian EFL learners, Teimourtash and Yazdanimoghaddam (2018, p. 64) concluded that EFL learners in Iran are capable of making appropriate inferences when experiencing unpredictable problems in life. Focusing on investigating Iranian EFL teachers’ conceptions of learner autonomy, Rashidi and Muhammadineku (2019, p. 107) stated that instructors’ actual teaching practices were primarily traditional and teacher-centered with little, if any, inclusion of learner autonomy. It was found that instructors did not foster learner autonomy in their classes partly due to their lack of understanding of the notion of learner autonomy and partially owing to the very powerful effect of the traditional teaching environment on them.

The suggested autonomous learning activities practiced by the participants in the present study are based on a large – scale study (508 participants) by Spratt, Humphreys, & Chan (2002). They made a questionnaire the design of which was strongly influenced by Holec’s (1981, p. 3) definition of autonomy: "the ability to take charge of one’s own learning" where "to take charge of one’s learning is to have and to hold the responsibility for all the decisions concerning all aspects of this learning". As Spratt et al. (2002, p. 249) mentioned, "Holec sees ability and responsibility as operating in five main areas: determining objectives, defining contents and progressions, selecting methods and techniques to be used, monitoring the procedure of acquisition, and evaluating what has happened". Spratt et al. (2002) attempted to incorporate these notions of ability and responsibility in the five areas into the questionnaire.

Therefore, the autonomous learning activities listed in Section 4 of their questionnaire were the outcome of a brainstorming session by a focus group of students (of Hong Kong Polytechnic University) on all the activities they thought they could carry out that might help them learn English independently of their instructors. This brainstorming took place at the design stage of their questionnaire and the results were then incorporated into it.

The studies reviewed above reveals the need for further research in the area of learner autonomy and considering all the above-mentioned points, the present researchers intended to see

whether explicit consciousness-raising of autonomous learning activities to EFL learners would increase their performance on achievement tests.

### 3. Method

#### 3.1. Design

The present study follows the underpinnings and guidelines of mixed-methods research design taking advantage of Triangulation "to examine the convergence of evidence from different methods that study the same phenomenon or to corroborate findings from one method by examining the findings using a different method" (Ary, Jacobs, Sorensen & Razavieh, 2010, p. 561).

In the quantitative phase, the design of the study was Solomon four group experimental design which provides good control of the threats to internal validity. As illustrated in Table 1 below, it involves two pretest groups and two without a pretest groups; one of the pretest groups and one of the unpretested groups receives the experimental treatment, and then all the four groups take the posttest. Since control group 2 just receives the experimental treatment, and does not take the pretest, it is logically assumed as a control group, and not an experimental one.

Table 1: Solomon Four-group Design (adapted from Ary et al., 2010, p. 309)

| Group            | Pretest | Treatment<br>(Independent Variable) | Posttest |
|------------------|---------|-------------------------------------|----------|
| E (Experimental) | Yes     | Yes                                 | Yes      |
| C 1 (Control 1)  | Yes     | No                                  | Yes      |
| C 2 (Control 2)  | No      | Yes                                 | Yes      |
| C 3 (Control 3)  | No      | No                                  | Yes      |

In Solomon four group design, several comparisons can be made to determine the effect of the experimental treatment. If the posttest mean of the E group is significantly greater than the mean of the first control group, C1, and if the C2 posttest mean is significantly greater than that of C3, one can have evidence for the effectiveness of the experimental treatment. One can determine the influence of the experimental conditions on a pretested group by comparing the posttests of E and C1 or the pre-post changes of E and C1. One can also find the effect of the experiment on an unpretested group by comparing C2 and C3. If the average differences between posttest scores, E – C1 and C2 – C3, are approximately the same, then the experiment must have had a comparable effect on pretested and unpretested groups.

Solomon four group design actually involves conducting two experiments, one with pretests and one without pretests. If the results of these two experiments agree, as indicated previously, the investigator can have much greater confidence in the findings.

In the qualitative phase of the study, a questionnaire related to the autonomous learning behaviors was adapted from section 4 of the questionnaire developed by Spratt et al. (2002), and students of the treatment groups completed the questionnaire and then took part in an interview. All the items of the questionnaire and the interview questions were directly related to the autonomous learning behaviors (treatments received by the students).

#### 3.2. Participants

The participants of the study were four intact classes (113 students; 46 male, 67 female; ranging in age from 18 to 22) of General English for Students of Medical Sciences at Fasa University of Medical Sciences. One class was regarded as experimental group and the others as control groups (E = 28, C1 = 25, C2 = 24, C3 = 36). The researchers followed "convenience sampling". As Ary et al. (2010, p. 155) explains, such sampling involves "using available cases for a study". In fact, the researchers did not have the authority to employ any type of probability sampling since it is the

Education Department of the university that designates students as participants of different General English classes, based on their weekly programs during each semester.

### 3.3. Instruments

Based on the design of the study, the data collection instruments were achievement tests (pretest and posttest). The pretest was the midterm exam and the posttest, the final exam. In order to explore the reliability of the achievement tests, the researchers had access to the question bank of achievement tests of 17 General English classes from 2010 to 2015 at FUMS which had already been administered to more than 500 students. The Kuder-Richardson reliability values of all these tests were measured and the indexes obtained were above 0.7. All these achievement tests had already been analyzed by the Comprehensive Management and Taking Exam Software "Azemoodeh" licensed by Health Ministry of Islamic Republic of Iran. Based on the analysis, all the items with item difficulty ranging from 0.3 to 0.7, and item discrimination and correlation coefficient above 0.5 were selected. Weak choices were revised and tested again as a pilot study in 4 more classes with 88 students in 2016-2017 academic year. In this pilot study, the selected items were 132 questions for the pretest achievement test and 148 questions for the posttest achievement test. The above-mentioned process was repeated again and finally 140 items were selected for the present research pretest and posttest achievement test (70 items for each). Moreover, some TEFL professors of Shiraz University and some lecturers of Fasa University of Medical Sciences checked the content validity of the achievement tests.

The achievement test consisted of two parts, 40 multiple choice vocabulary questions, and 30 multiple choice reading comprehension questions (4-6 texts). It is worth mentioning that all General English students either had passed the prerequisite course (where they had been required to be tested on grammar items directly) or had already obtained a score above 50 on the English sub-test of the nation-wide university entrance exam.

Then, an adapted version of the questionnaire related to the autonomous learning activities was prepared. All the items of the questionnaire were directly related to the activities (treatments received by the students). The questionnaire employed a 5-point Likert format which offered choices from very much to never for each item and asked the students "As long as you have participated in this study, how often have you watched English TV programs..., sent e-mails in English..., read English books..., etc.". There was a one to one comparison between the above-mentioned suggested autonomous learning activities and the questionnaire items.

The researchers tried to expand the depth and breadth of the findings by conducting a semi-structured focus-group interview which encompassed 10 open-ended questions. The interview questions were in line with the suggested autonomous learning activities and the questionnaire items, where the researchers might have even received unpredictable responses to be coded for later analysis to gain fruitful and in-depth results.

### 3.4. Reliability and Validity

Using the SPSS Reliability procedures, Cronbach alpha was checked to confirm the reliability of the data obtained from the achievement tests and the questionnaire, and the obtained results were 0.84, and 0.75, respectively. For the interview phase, to check dependability or trustworthiness of the obtained results, the researchers followed code-recoding. According to Ary et al. (2010), code - recoding is used "to demonstrate that the methods used" will be "reproducible and consistent, that the approach and procedures used" will be "appropriate for the context and can be documented, and that external evidence can be used to test conclusions" (p. 501). In addition, some TEFL professors of Shiraz University and some lecturers of Fasa University of Medical Sciences checked the content validity of the questionnaire.

### 3.5. Data Collection Procedure

At the beginning of the semester, four intact classes of General English were selected. One class was assigned to the experimental group and the others to the control groups, through random assignment. Following Solomon four group design, the experimental group and control group 1 took the midterm exam as their pretest. Then, the experimental group and control group 2 received treatment for 10 sessions (about 15 minutes every session) on a number of autonomous learning activities to be done as extra practice outside the classroom. A list of the activities appears in Table 8 below. At the eleventh session all the four groups took the final exam (posttest). Finally, the collected data were entered into SPSS for statistical analysis.

### 3.6. Data Analysis

First, an independent-samples t-test was conducted to compare the pretest scores for the experimental and control group 1, to see whether there were any significant differences between the pretested groups. Next, to check whether there were any significant differences between the groups after the treatment, an independent-samples t-test was conducted to compare the posttest scores for treatment and no-treatment groups. In addition, a one-way ANOVA was run followed by Tukey HSD as a follow up measure to find out the probable differences between the groups. To check the probable significant differences between students' pretest and posttest scores, two paired-samples t-tests were run separately for the experimental group and control group 1.

Then, using SPSS, the researchers conducted descriptive analysis related to the questionnaire items and checked the correlation of all the data taken from achievement tests and the questionnaire items to see whether the use of autonomous learning activities correlated with the students' degree of achievement. For the interview episode, having recorded the interviews and analyzing their contents, the researchers followed data triangulation to investigate whether the data collected qualitatively confirms the data collected using quantitative procedures. In fact, the researchers wanted to find support for the obtained conclusions in more than one data source. And Ary et al. (2010) states that convergence of data analysis from these various sources lends credibility and dependability to the findings.

## 4. Results

As stated before, first, an independent-samples t-test was conducted to compare the pretest scores for the experimental group and control group 1.

Table 2: Independent-samples T-test for Pretest Scores

|         |                             | Levene's Test |      | t-test for Equality of Means |       |                 |                 |                       |   |       |
|---------|-----------------------------|---------------|------|------------------------------|-------|-----------------|-----------------|-----------------------|---|-------|
|         |                             | F             | Sig. | t                            | DF    | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |       |
| Pretest | Equal variances assumed     | .582          | .449 | 1.263                        | 51    | .212            | 3.391           | 2.685                 | -1.999                                    | 8.781 |
|         | Equal variances not assumed |               |      | 1.248                        | 46.22 | .218            | 3.391           | 2.717                 | -2.078                                    | 8.860 |

Based on the analysis conducted, there is no significant difference in pretest scores for the experimental group ( $M = 66.07$ ,  $SD = 8.73$ ) and control group 1 ( $M = 62.68$ ,  $SD = 10.80$ ;  $t(51) = 1.26$ ,  $p = .21$ , two-tailed). The magnitude of the difference in the means (mean difference = 3.39, 95% CI: -2 to 8.78) was fairly small ( $\eta^2 = .030$ ). Next, an independent-samples t-test was

conducted to compare the post test scores for the treatment groups (E and C2) and non-treatment groups (C1 and C3).

Table 3: Independent-Samples T-test for Post test scores for Treatment and Non Treatment Groups

|         |                             | Levene's Test |      | t-test for Equality of Means |        |                 |       |                       |   |        |
|---------|-----------------------------|---------------|------|------------------------------|--------|-----------------|-------|-----------------------|---|--------|
|         |                             | F             | Sig. | t                            | DF     | Sig. (2-tailed) | Mean  | Std. Error Difference | 95% Confidence Interval of the Difference |        |
| Pretest | Equal variances assumed     | 2.058         | .154 | 3.967                        | 111    | .000            | 8.920 | 2.249                 | 4.465                                     | 13.376 |
|         | Equal variances not assumed |               |      | 4.029                        | 110.88 | .000            | 8.920 | 2.214                 | 4.533                                     | 13.308 |

According to the results, there is a significant difference in post test scores for treatment groups ( $M = 72.90$ ,  $SD = 10.63$ ) and no-treatment groups ( $M = 63.98$ ,  $SD = 12.90$ ;  $t(111) = 3.97$ ,  $p < .001$ , two-tailed). The magnitude of the difference in the means (mean difference = 8.92, 95% CI: - 4.47 to 13.38) was large (eta squared = .124). Therefore, it can be concluded that the treatment had influenced the students' performance on the post-test largely, and since the mean score for treatment groups is greater than that of no-treatment groups, there should be a positive effect.

As a prerequisite to one-way ANOVA, test of homogeneity of variances was conducted (sig = 0.43). And, since the significance value is greater than .05, the assumption of homogeneity is not violated. Following the test of homogeneity of variances, to reach a better comparison between groups, a one-way ANOVA was run whose results appear in table 4 below.

Table 4: One-Way ANOVA on the Comparison of the Post-test Scores

|                | Sum of Squares | DF  | Mean Square | F     | Sig. |
|----------------|----------------|-----|-------------|-------|------|
| Between Groups | 2273.929       | 3   | 757.976     | 5.258 | .002 |
| Within Groups  | 15713.187      | 109 | 144.158     |       |      |
| Total          | 17987.115      | 112 |             |       |      |

As the significance value is less than .05, it can be concluded that there is a significant difference somewhere among the mean scores of the four groups on the posttest. Having reached a statistically significant difference, the researchers conducted a Post-hoc multiple comparisons using Tukey HSD test.



Table 5: Post-hoc Multiple Comparisons using Tukey HSD test

| (I) Classes  | (J) Classes  | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|--------------|--------------|-----------------------|------------|------|-------------------------|-------------|
|              |              |                       |            |      | Lower Bound             | Upper Bound |
| Experimental | Control 1    | 8.936*                | 3.304      | .039 | .32                     | 17.56       |
|              | Control 2    | 1.369                 | 3.340      | .977 | -7.35                   | 10.08       |
|              | Control 3    | 9.980*                | 3.025      | .007 | 2.09                    | 17.87       |
| Control 1    | Experimental | -8.936*               | 3.304      | .039 | -17.56                  | -.32        |
|              | Control 2    | -7.567                | 3.431      | .128 | -16.52                  | 1.39        |
|              | Control 3    | 1.044                 | 3.126      | .987 | -7.11                   | 9.20        |
| Control 2    | Experimental | -1.369                | 3.340      | .977 | -10.08                  | 7.35        |
|              | Control 1    | 7.567                 | 3.431      | .128 | -1.39                   | 16.52       |
|              | Control 3    | 8.611*                | 3.164      | .037 | .36                     | 16.87       |
| Control 3    | Experimental | -9.980*               | 3.025      | .007 | -17.87                  | -2.09       |
|              | Control 1    | -1.044                | 3.126      | .987 | -9.20                   | 7.11        |
|              | Control 2    | -8.611*               | 3.164      | .037 | -16.87                  | -.36        |

\*. The mean difference is significant at the 0.05 level.

Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the experimental group ( $M = 73.54$ ,  $SD = 10.17$ ) was significantly different from those of control group 1 ( $M = 64.60$ ,  $SD = 12.43$ ) and control group 3 ( $M = 63.56$ ,  $SD = 13.38$ ). Also, the mean score for control group 2 ( $M = 72.17$ ,  $SD = 11.32$ ) was significantly different from that of control group 3. All in all, the results confirmed the evidence of the effectiveness of the experimental treatment and since the mean score for the treatment groups was greater than the mean score for the no-treatment groups, it can be concluded that the results show a positive effect of explicit consciousness-raising of autonomous learning activities on students' achievement scores.

To take advantage of the information provided by the Solomon four group design, two more comparisons were made. To be more specific, two paired-samples t-tests were conducted separately to evaluate the impact of treatment on students' achievement scores from pre-test to posttest. The first paired-samples t-test was conducted to assess the impact of the explicit consciousness-raising of autonomous learning activities on achievement tests in the experimental group.

Table 6: Paired Samples T-test on the Pretest/Posttest Scores of the Experimental Group

|        |                    | Mean   | Std. Deviation | Std. Error Mean | Lower  |        | Upper  | t  | DF   | Sig. |
|--------|--------------------|--------|----------------|-----------------|--------|--------|--------|----|------|------|
|        |                    |        |                |                 | Lower  | Upper  |        |    |      |      |
| Pair 1 | Pretest – Posttest | -7.464 | 6.420          | 1.213           | -9.954 | -4.975 | -6.152 | 27 | .000 |      |

Based on the analysis conducted, there is a statistically significant increase in achievement test scores from pre-test ( $M = 66.07$ ,  $SD = 8.73$ ) to posttest ( $M = 73.54$ ,  $SD = 10.17$ ),  $t(27) = -6.15$ ,  $p < .001$  (two-tailed). The mean increase in achievement test scores is 7.47 with a 95% confidence interval ranging from -9.95 to -4.98. The eta squared statistic (.58) also indicates a large effect size.

Next, to control extraneous factors such as history and maturation, another paired-samples t-test was conducted to evaluate the students' achievement test scores in control group 1.

Table 7: Paired-samples T-test on the Pretest/Posttest Scores of Control Group 1

|        |                    | Paired Differences |                |                 |   |       | t      | DF | Sig. (2-tailed) |
|--------|--------------------|--------------------|----------------|-----------------|---|-------|--------|----|-----------------|
|        |                    | Mean               | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference |       |        |    |                 |
|        |                    |                    |                |                 | Lower                                     | Upper |        |    |                 |
| Pair 1 | Pretest – Posttest | -1.920             | 8.930          | 1.786           | -5.606                                    | 1.766 | -1.075 | 24 | .293            |

According to the results, there is no significant difference in achievement test scores from pre-test ( $M = 62.68$ ,  $SD = 10.79$ ) to posttest ( $M = 64.60$ ,  $SD = 12.42$ ),  $t(24) = -1.08$ ,  $p = .29$  (two-tailed). The mean increase in achievement test scores is 1.92 with a 95% confidence interval ranging from -5.61 to 1.77, and the eta squared statistic (.048) indicates a fairly small effect size.

To summarize the quantitative phase of the study, in Solomon four group design, several comparisons were made to determine the effect of the experimental treatment. The fact that the posttest mean score of the experimental group was significantly greater than the posttest mean score of the first control group, C1, and that the C2 posttest mean score was significantly greater than that of C3, provides evidence for the effectiveness of the experimental treatment. The effect of the treatment on the two unpretested groups by comparing C2 and C3 was also investigated. As the average differences between posttest scores of E – C1 and those of C2 – C3, were approximately the same, it can be claimed that the treatment must have had a comparable effect on pretested and unpretested groups.

As mentioned before, Solomon four group design actually involves conducting two experiments, one with pretests and one without pretests. Since the results of these two experiments agree, as indicated previously, the investigators could have much greater confidence in the plausibility of the findings. All in all, the findings of the quantitative phase of the study confirmed a noticeable positive effect for the explicit consciousness-raising of autonomous learning activities on achievement test scores of the participants of the study.

Since the present study enjoyed a mixed methods design, the researchers tried to expand the depth and breadth of the findings by conducting descriptive analysis of the data collected from the questionnaire items and a semi-structured focus-group interview which encompassed 10 open-ended questions directly related to the autonomous learning activities (treatments received by the students in the treatment groups). In what follows, the results obtained from the mentioned analyses are provided.

Table 8: Students' Engagement in Autonomous Learning Activities in the Treatment Groups

| Autonomous Learning Activities   | Never & Rarely % | Sometimes % | Often & Very Often % |
|--|------------------|-------------|----------------------|
| 1 Watch English TV programs, movies, cartoons, etc., and keep a record of their topics and the time you allocate to each in your notebook.                         | 25               | 42.3        | 32.7                 |
| 2 Send e-mails in English to your classmates, friends, etc.  | 53.8             | 28.8        | 17.3                 |
| 3 Read English books, newspapers, magazines, notices, etc. around you, and keep a brief written record of them and the time you allocate to each in your notebook. | 78.8             | 19.2        | 1.9                  |
| 4 Use the Internet in English (e.g. surf English sites, check weather reports, etc.)   | 40.4             | 40.4        | 19.2                 |
| 5 Listen to English radio programs, songs, etc., and keep a brief written record of them in your notebook.   | 19.2             | 36.5        | 44.2                 |
| 6 Practice using English with classmates and friends who know English (e.g. talk with them at university or on the phone in English).                              | 63.5             | 25          | 11.5                 |
| 7 Note down new information, words, meaning, etc. in English in your notebook.   | 32.7             | 30.8        | 36.5                 |
| 8 Take opportunities to speak in English with foreigners on the internet (e.g. chat rooms).  | 78.8             | 13.5        | 7.7                  |
| 9 Do assignments which are not compulsory (e.g. read grammar books on your own, do revisions not required by the teacher)?   | 78.8             | 19.2        | 1.9                  |
| 10 Keep your diaries in English (suggested time: 5 minutes every night).   | 75               | 11.5        | 13.5                 |

The questionnaire sought to measure the frequency of the students' engagement in autonomous learning activities in the treatment groups (52 students). The question asked was: "During the time you took part in this research, how often did you engage in the following autonomous learning activities?". The descriptive results for the autonomous learning activities are shown in Table 8 above.

As the table shows, there were 4 activities out of 10 that appeared to be widely practiced by the students in the treatment groups, items: 1 (75%), 4 (59.65), 5(80.7%) and 7(67.3%). In fact, the majority of the students (about 60 % or more) said they "sometimes", "often" or "very often" engaged themselves in the mentioned activities. These four items were: "watch English TV programs, movies, cartoons, etc., and keep a record of their topics and the time you allocate to each in your notebook", "use the Internet in English (e.g. surf English sites, check weather reports, etc.)", "listen to English radio programs, songs, etc., and keep a brief written record of them in your notebook", and "note down new information, words, meaning, etc. in your notebook".

Next, there were 2 activities that appeared to be somewhat practiced by the students in the treatment groups, items: 2 (46.1%) and 6 (36.5%). As a matter of fact, more than one third of the students to half of them (between 30% to 50%) said they "sometimes", "often" or "very often" engaged themselves in the mentioned activities. These items were: "send e-mails in English to your classmates, friends, etc.", and "practice using English with classmates and friends who know English (e.g. talk with them at university or on the phone in English)".

On the other hand, there were 4 activities out of 10, which appeared to be much less practiced, items: 3 (78.8%), 8 (78.8%), 9 (78.8%) and 10 (75%). In fact, the majority of the students (75 % or more) said they "never" or "rarely" engaged themselves in the mentioned activities. Then, it can be concluded that these items (i.e. "read English books, newspapers, magazines, notices, etc.

around you, and keep a brief written record of them and the time you allocate to each in your notebook”, “take opportunities to speak in English with foreigners on the internet (e.g. chat rooms)”, “do assignments which are not compulsory (e.g. read grammar books on your own, do revisions not required by the teacher)”, and “keep your diaries in English (suggested time: 5 minutes every night)”) had rarely influenced the students’ improvement from pretest to posttest, a claim confirmed by the interview results, where just a few of the participants stated their preference to practice the mentioned autonomous learning activities during the study.

The second phase of the qualitative data collection required the researchers to interview the students of the treatment groups. In fact, the purpose of holding such an interview was to provide the students with the opportunities to express their ideas and elaborate on their practical engagement in the suggested autonomous learning activities. Since all the items of the questionnaire and the interview questions were directly related to the autonomous learning activities (treatments received by the students), the researchers conducted a semi-structured focus-group interview which encompassed 10 open-ended questions.

Therefore, data analysis followed a relatively simple process whose results were in complete agreement with the outcomes obtained from the analysis of the data through administering the questionnaire. In fact, the students’ overall response and the percentage of their engagement in the suggested autonomous learning activities were to a great extent in line with the obtained results of the corresponding items of the questionnaire, describing three different groups of activities practiced by them. In accord with the results taken from the questionnaire section, there were 4 activities out of 10 that appeared to be widely practiced by the students in the treatment groups (items: 1, 4, 5 and 7). As seen, 2 activities appeared to be somewhat practiced by the students in the treatment groups (items: 2 and 6), and in keeping with the previous qualitative section, there were 4 activities out of 10, that appeared to be much less practiced (items: 3, 8, 9 and 10), where the majority of the students said they “never” or “rarely” engaged themselves in the mentioned activities.

Comparing the above-mentioned results obtained from the analysis of the questionnaire items with those obtained from the interview, one can conclude that in fact the above-mentioned 6 autonomous learning activities (items; 1, 2, 4, 5, 6 and 7) could attract the students’ attention better than the others and the learners preferred to engage widely or somewhat in them. Therefore, they could be the source of the students’ improvement in achievement tests and the significant difference made from pretest to posttest.

In what follows two comments from the interviewed students are provided to shed more light on what is presented in the above section. In fact, such viewpoints were quite frequent in other students’ comments in the semi-structured interview.

*Comment 1: Before participating in this study, I often watched movies, animations, etc. and depended a lot on the subtitles, and I thought they were just helpful for my listening ability. By the time, we became aware of the importance of such activities and following some strategies introduced by our teacher, I tried to learn purposefully. For example, for the first activity, at first, I recorded the topics in the suggested record notebook, but little by little, my phrases were substituted with a couple of sentences, and now I can write a paragraph and a half. When I face problems, I ask a roommate whose General English is a lot better than mine. I think I have gained more confidence and want to try some other strategies suggested by the teacher.*

*Comment 2: Firstly, my friend and I decided to practice English at the university self-service and also by sending messages in English. To tell the truth, we were really worried about the reactions of some other students, there. We were somehow ridiculed for the first days. But, little by little, their reactions seemed normal, and even a few others joined us. We tried to talk about different topics. We looked up the meaning of the new words. Sometimes we used pantomime to help each other understand the meanings. As we were aware of the benefits of these techniques, we briefly reported to ourselves what we had done – something that helped our grammar and writing,*

*too. We're happy that we took advantage of our own learning. This method made us aware of the possible outside class learning opportunities. Though we expected to see improvement in speaking ability and somehow vocab knowledge, it helped us improve our grammar and writing, too.*

These comments show the importance of “the freedom and ability to manage one's own affairs” (Scharle & Szabo, 2000, p. 4). In fact, the learners seemed to internalize their learning process as “the ability to take charge of one’s own learning” where “to take charge of one’s learning is to have and to hold responsibility for all the decisions concerning all aspects of this learning” (Holec, 1981, p. 3). Even the learners seemed to somehow come up with Kumaravadivelu’s (2006) viewpoint of narrow learner autonomy where it focuses on developing an ability in the student to learn how to learn, and Knowles' (1975, p.14) assertion of “proactive learners” according to which “people who take the initiative in learning ... learn more things and learn better than do people who sit at the feet of teachers, passively waiting to be taught (reactive learners)...They enter into learning more purposefully and with greater motivation”.

## 5. Discussion

The present study, in accordance with Sardegna and Dugartsyrenova (2014), emphasizes the role of autonomous learning behaviors in increasing the knowledge sharing process and assisting learners to manage and smooth the path for critical thinking, language awareness, self-reflection, and self-assessment processes. In addition, the findings are in agreement with Kaur’s (2014) insistence on the crucial mediating variable of the teachers in developing autonomous learning behavior where the results stresses positive effect of some of the practices such as preparing the proper pedagogical context, classroom based sufficient aid in materials, and considering learners’ interests and needs. Moreover, it can be indicated that autonomous learning behavior requires mental readiness, taking greater charge and positive condition for learning, reducing students’ dependence on their teachers and appropriate learning atmosphere.

In keeping with the literature (Ahn, 2017; Godwin-Jones, 2011; Mohamadpour, 2013), it can be stated that when learners possess self-efficacy and high motivation they are able to direct their own learning. Furthermore, it can be declared that such a management of learning in addition to high level metacognitive processes creates self-regulated students who are motivated to acquire knowledge successfully.

Moreover, following the results taken from the questionnaire and the interview episodes, and in accordance with Jafari et al. (2016), the positive influence of self-directed as well as socially mediated learning on learners’ autonomous language learning is confirmed. In fact, embedding such skills within the process of language teaching and assessment enhances the development of autonomous learning behaviors.

Furthermore, in accordance with the viewpoint of researchers such as Poon (2013), Tabor (2007) and Vaughan (2007), the present research confirms the importance of directing and modifying learners’ expectations, particularly their opinion that less face to face interaction with their teachers might lead to less learning. In other words, it can be restated that learners can be inspired to accept more responsibility for and autonomy on their own language learning.

In accord with de Groot-Reuvekamp et al. (2018), it can be claimed that taking benefit from user-friendly materials leads to autonomy, increased intrinsic motivation, and competency which are necessary factors for effective performance. Moreover, the results confirm Nguyen and Walkinshaw’s (2018) findings according to which enhanced learner autonomy can be originated from the extent to which individual teachers can cope with institutional or pedagogical restrictions in the learning context.

In keeping with Tran and Duong’s (2018) claim about learners’ proactivity viewpoint, it can be concluded that learners’ recent free and open use of popular applications, chat rooms and messengers keeps up communications and provokes independence in their learning. In other words, the learners are able to manage their resources autonomously to take advantage of their learning

objectives. Last but not least, the findings of this study are in line with Ahn (2017) on the value of autonomous learning awareness and the necessity to cultivate a better realization (both for the teacher and the learner) of learner autonomy.

## 6. Conclusion

The results obtained from the data analysis of mixed methods research in the present study yielded valuable insights. First, it was concluded that explicit consciousness-raising of autonomous learning activities had a large positive influence on the students' performance on achievement tests. In addition, it was found that reducing students' dependence on their teachers by free and open use of popular applications in order to keep up communications, their voluntary engagement in outside classroom autonomous learning activities, positive learning atmosphere, and learners' mental readiness led to higher motivation and self-regulation to acquire knowledge more purposefully and become more successful language learners.

In fact, reflecting on the quantitative and qualitative results derived from this research and considering the related literature, one can conclude that language institutes and curriculum designers should educate and persuade language teachers to increasingly remind the learners of the importance of self-initiation and of taking responsibility for their own learning. In other words, language institutes, curriculum designers, language educators and teachers should offer more occasions, equipment and tasks to learners to increase metacognitive awareness of their continuous learning and to become aware of their outstanding potential in their own learning process.

All in all, it can be concluded that not only is learner autonomy socially mediated but also it is self-directed, where collaborative as well as individual activities, in their nature, can be tools to foster learners' reflection and autonomous learning behavior. Teachers and language institutes are highly advised to prepare situations where the learners become aware of the positive effects of acting autonomously and observe its direct relation to their success in the process of language learning.

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