The Effect of Using Educational Mapping as a Game in Teaching English Language on University Students' Motivation

Saddam Riad Kobari*[a] Fayez Mahamid[b], & Mohamed Shaheen[a]

* Corresponding author:
Email: saddam.kobri1@gmail.com
a. Faculty of Graduate Studies, Al-Quds Open University, Ramallah, Palestine.
b. An-Najah National University, Nablus, Palestine.

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ABSTRACT

This study interrogated the effect of using educational mapping in teaching English language on university students' motivation. A quasi-experimental design (training program), along with a quantitative approach, was used. The study was implemented at Al-Quds Open University in Palestine. The participants comprised 36 master's degree students who were randomly divided into two equal groups: controlled (n=18) and experimental (n=18). The experimental group was taught by using educational mapping while the controlled group was taught by using common and traditional methods of teaching English language. The study questions were: 1) Are there statistically significant differences in students' means responses of English language motivation due to group? 2) Are there statistically significant differences in students' means responses of English language motivation due to gender? The data were analyzed by using SPSS, ANCOVA and MANCOVA. The results of the study showed that using educational mapping in teaching English language positively influenced university students' motivation. In addition, the results of the study indicated that there were no statistically significant differences in students' means responses of motivation according to the variable of gender. Thus, the study recommended using educational mapping as a game to foster students' motivation.

KEYWORDS

Educational mapping; English language motivation; university students

INTRODUCTION

Most of Arab learners face many problems in learning English language (Almehmadi, 2013). These problems are represented by: lack of English language self-efficacy, inability to present the ideas, transferring the stylistic features from their first language, writing long sentences, keeping repeating the same ideas around the topic, replicating phrases without targeting the main idea and having low motivation towards learning the language (Almehmadi, 2013). Besides, most of EFL learners experience fear and high level of anxiety while speaking, writing and summarizing, and they have low motivation towards learning English language (Aydin, 2008).

One of the prominent obstacles that encounters lecturers and teachers is dealing with diverse group of learners. That is, learners have various backgrounds; hence, their abilities, skills, motivation and confidence vary. Ahmed and Wais (2012) interrogated the factors that lead to low academic achievement. The study found that the lack of attention and motivation is a basic factor; the study advised lecturers and teachers to use educational games that can increase their motivation. Azriel et al. (2005) indicated that the language of playing is common among all people regardless of their knowledge, age and social backgrounds.

The researcher tried to convert the educational mapping into a game to test its effect on university students' motivation. Several studies showed the positive effect of using games in teaching. For example, Kramer (2000) found that games increase students' motivation, which enables them to participate and play their roles zealously; Kramer also stated that using games has many benefits. First of all, they develop many skills and abilities such as planning, thinking, training the parts of the mind, processing different kinds of information, concentrating, making decision, and grasping the impact of systems. Furthermore, they develop the emotional and social aspects by improving learners' ability and skills in various fields such as using fantasy, accepting loss, creativity, accepting the laws, discovering oneself and others, learning and working with others. Goehle (2013) stated that using games could foster students' engagement, interaction and enthusiasm. That is, using games in teaching helped students to trust their abilities and skills; hence, using games increased learners' enthusiasm and motivation to learn.

Educational Mapping

One type of graphic organizers is mapping; using mapping is very beneficial because it assists students to be encouraged and motivated while learning; that is, it helps learners to apply and use words correctly. Mapping increases the level of confidence that they have towards their abilities (Miao, 2007). Using mapping helps learners to organize the content of knowledge, which they are learning properly. That is, using mapping could help learners in writing research since it could help them to organize the literature review properly (Kotcherlakota et al., 2013). In addition, the structure of mapping aids learners to develop their learning skills; hence, using mapping increased students' level of confidence in their abilities (Hanewald, 2012).

Using mapping has several advantages. First, it can be used as a note-writing guide that develops teachers' abilities and skills. Second, it can be shown as an effective visual learning tool

that illustrates the relationships of concepts and words. Third, the structure of mapping motivates students to participate and take feedback. Fourth and last, it enriches the process of recalling words and understanding (Boyson, 2009). Moreover, Buzan and Buzan (2010) stated that mapping assists learners to be distinguished and creative, and it helps them a lot while summarizing texts, lectures and conversations. Thus, using mapping is vital for summarizing, organizing thoughts, explaining information, reading and writing since it connects different topics through a meaningful visualization; using mapping in teaching develops students' abilities in recalling and memorization. Besides, it also develops learners' involvement and engagement in learning; in addition, it positively increases their confidence (Spencer et al., 2013).

Grabe (2009) found that educational mapping is an effective teaching strategy that can increase students' motivation and curiosity to pay attention and participate while learning. Kotcherlakota et al. (2013) stated that using mapping helps learners to organize the content of knowledge that they are learning. Hanewald (2012) found that the structure of mapping aids learners to develop their learning skills. Farrand et al. (2002) indicated that mapping assists students to study and arouse their motivation to learn since the design of mapping provides effective elaborations. Mapping also can be considered as a helpful studying tool because it organizes the data properly. Goodnough and Woods (2002) indicated that learners found educational mapping as an enjoyable and encouraging aid because it could motivate them to share ideas, participate, answer questions and express themselves in various academic contexts. Mona and Adbkhalick (2008) found that mapping helps students to organize their understanding, motivating them to be productive. Brinkmann (2003) found that mapping could foster learners' creativity and motivation. It helps learners to categorize information properly; using mapping in teaching can largely arouse students' enthusiasm and attention since it illustrates the lesson simply. In addition, using mapping in teaching accounting course made the process of learning enjoyable and interesting by providing visual aids and illustrations, as well as using pictures, links and colors. Fiktorius (2013) stated that educational mapping is a powerful teaching aid that encourages students to participate by increasing their motivation. Using mapping assists learners to introduce new ideas and connect different ideas together. Goldberg (2004) stated that educational mapping is an effective teaching and learning aid that fosters students' engagement and involvement. Kobari (2018) found that using educational mapping as a game positively affected 11th grade students' achievement and attitudes.

However, the current research was conducted to test the effect of using educational mapping in teaching English language on university students' motivation. The current study aimed to answer the following questions: 1) Are there statistically significant differences in students' means responses of English language motivation due to group? 2) Are there statistically significant differences in students' means responses of English language motivation due to gender?

METHODOLOGY

Participants

The sample of the study comprised 36 students who were randomly divided into two groups: experimental (n=18) and control (n=18). The sample was selected as a stratified random sampling. The population of the study was master's degree students from Al-Quds Open University in Palestine; the number of master's degree students at Al-Quds Open University is about 800 students in the year 2022/2023. An English language motivation scale (Ratanawalee, 2012) was distributed to participants before and after the intervention. A two-group quasi-experimental design (training program) was used to answer the questions of the study. The performance of the two groups was measured before and after the intervention period.

Study instruments

English Language Motivation Scale

The instrument used in this study was a 5-point Likert Scale which was adapted from the original 7-point Likert Scale format of Gardner's Attitude/ Motivation Test Battery (AMI), 909 ranged from 'Strongly Agree' to 'Strongly Disagree' (Gardner, 1960). Some of the questions used in the questionnaire were adopted from Prapphal's Attitudes Testing (Prapphal, 1981) to gather information on participants' motivation. There were 20 questions in the questionnaire. The questionnaire consists of two main parts: instrumental motivation (items 1-10) and integrative motivation (items 11- 20), related to various variables of English language learning. The researcher validated the scale in the Palestinian context by using construct and content validity; the scale ended up with 18 modified items, and it was changed to a 4-likert scale after being reviewed by a committee of psychology and English language specialists. Moreover, the reliability coefficients of the scale was α=0.877.

Training Program

The slides of educational mapping were formulated according to the texts used from pre-intermediate English language book, which is taught at different local universities in Palestine. In addition, the project of designing the book co-founded by the Erasmus program of the European Union; the mapping slides were designed on the lessons extracted from the book. Besides, the mapping slides are divided into four parts. The first part covers language (grammar), the second part covers writing, and the third part covers vocabulary and reading comprehension. The training program consisted of 8 lectures, one lecture per a week; each lecture lasted for 180 minutes. Groups' members attended all the lectures, which were given by the researcher. The researcher taught the experimental group by using the educational mapping slide while the researcher taught the control group the same lessons by using traditional methods. Table 1 shows the training program.

Table 1. *Training-program lectures.*

Lecture	Content	Lessons
1st lecture (Units one and two)	Grammar	Sentences, Questions Transitive and intransitive verbs Regular and irregular verbs Present Simple and Wh-Questions
2nd lecture (Units three and four)	Grammar	Past Simple Passive voice (Present simple and past simple) Imperative
3rd lecture (Units five and Six)	Grammar	Present progressive, present perfect Comparative adjectives Superlative adjectives
4th lecture (Units one and two)	Reading comprehension and vocabulary	Greetings from around the world, Netiquette Food and Health, what is in your food? Cuisines and Countries, get healthy
5th lecture (Units three and four)	Reading comprehension and vocabulary	Wonders of the world, Jerusalem and Bethlehem full day tour, biomes Fashion ….are you interested? Palestinian Traditional customs: The story of place and memory
6th lecture (Units five and Six)	Reading comprehension and vocabulary	Learning and Technology A new Era of Entertainment Technology Palestine got home E-sports
7th lecture (Units one, two and three)	Writing Topics	Capitalization Commas Application and assessment
8th lecture (Units four, five and six)	Writing Topics	Giving Reasons (Because and so) Contrasting (But) Application and assessment

Study procedures

After selecting the population of the study (Masters' degree students from Al-Quds Open University), the researcher tested the two scales on 23 students as a pilot study. When the number of participants reached 36, they were divided randomly into two groups according to the time of the lecture. Some students chose to take the lecture on Sunday at 4p.m. while other students chose to take the lecture on Thursday at 2p.m. The researcher taught the experimental group by using the new method in teaching English language while the researcher taught the control group by using common traditional methods. Teaching the two groups lasted nearly for

two months during the summer course. The intervention period started on (1/7/ 2022) and finished on (1/9/2022). The performance of the two groups was measured before and after the intervention.

Data analysis

To test the effect of using educational mapping in teaching English language on university students' motivation, means and standard deviation of the control and experimental groups in the pre- and post-tests were used. ANCOVA, MANCOVA and SPSS program were used to analyze the statistical data. Analysis of covariance(ANCOVA) was used to test the differences in students' means responses of motivation on pre- and post-tests due to the study variables, as well as Multiple analysis of covariance (MANCOVA) was used to test the effect of the intervention on the scale dimensions and study variables.

Ethics

A permission to conduct this study was taken from the Faculty of Graduate Studies at Al-Quds Open University .Besides, informed consent was received before collecting the required data from the participants.

FINDINGS

Means and standard deviations were calculated for study variables (group and gender) on pre- and post-tests for motivation as shown in Table 2 and Fig.1 & Fig.2

Table 2. *Means and standard deviations for study variables on pre and post- tests for motivation scale.*

Dependent Variable	Variables	pre –test			post –test	
		No.	M	S.D	M	S.D
Instrumental motivation	experimental	18	1.71	0.22	3.80	0.23
	controlled	18	2.07	0.18	2.14	0.73
	male	13	1.89	0.34	3.04	1.35
	female	23	1.93	0.20	2.93	1.64
	Total	36	1.89	0.26	2.97	1.53
Integrative motivation	experimental	18	1.72	0.31	3.90	0.08
	controlled	18	2.30	0.23	2.48	0.15
	male	13	1.89	0.41	3.26	0.89
	female	23	2.08	0.39	3.16	0.47
	Total	36	2.01	0.40	3.10	0.78

Table (2) elaborates the means of motivation scale for the experimental and controlled groups. That is, regarding instrumental motivation, the mean of the experimental group in the pre-test was 1.71 while the mean of the controlled group was 2.07. Moreover, regarding the post-test results, the mean of experimental group was 3.80 while the mean of controlled group was 2.14.

Furthermore, regarding the integrative motivation, the mean of the experimental group in the pre-test was 1.72 while the mean of the controlled group was 2.30. Moreover, regarding the post-test results, the mean of experimental group was 3.90 while the mean of controlled group was 2.48.

To test the significance of these differences, ANCOVA test was calculated as shown in Table 3.

Table 3. *Analysis of covariance for total score of motivation scale according to group and gender.*

Dependent Variable	Source of Variance		SS	DF	MS	F	P
	Pre- test		0.258	1	0.258	3.038	.092
	Group		1.226	1	1.226	14.424	.001**
	Gender		0.007	1	0.007	0.082	.777
Motivation	Group Gender	*	0.028	1	0.028	0.325	.573
	Error		2.549	30	0.514	.085	

**P ≤ 0.01

Table (3) demonstrates that there were no statistically significant differences in the pre-test between the two groups (P=0.92). Moreover, regarding the post-test, there was a statistically significant difference according to group (P=.001**), and there were no statistically significant differences according to gender (P= 0.777).

Table 4. *Multiple analysis of covariance for motivation dimensions according to group and gender.*

Dependent variable	Source of variance	SS	DF	MS	F	P
Instrumental motivation (post)	group	11.900	1	11.900	122.050	.000**
Integrative motivation (post)		8.381	1	8.381	73.280	.000**
Instrumental motivation (post)	gender	0.029	1	0.029	0.294	.592
Integrative motivation (post)		0.014	1	0.014	0.125	.726
Instrumental motivation (post)	group * gender	0.010	1	0.010	0.101	.753
Integrative motivation (post)		0.008	1	0.008	0.074	.787
Instrumental motivation (post)	Instrumental motivation (pre)	0.247	1	0.247	2.529	.122
Integrative motivation (post)	Integrative motivation (pre)	0.105	1	0.105	0.916	.346

**$P \leq 0.01$

Finding of Table 4 illustrates that there were statistically significant differences in instrumental motivation and integrative motivation according to group (P=.000** and P=.000**) respectively. In addition, there were no statistically significant differences in instrumental motivation and integrative motivation according to gender (P=.592 and P=.726) respectively.
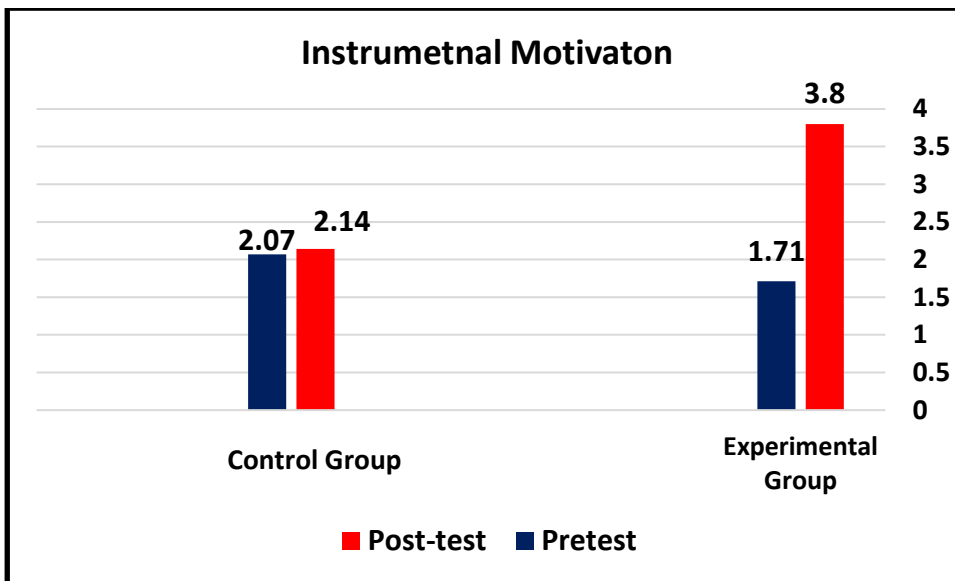
Figure 1. *The differences in Means of Instrumental Motivation between the experimental and controlled groups in the pre- and post-tests.*
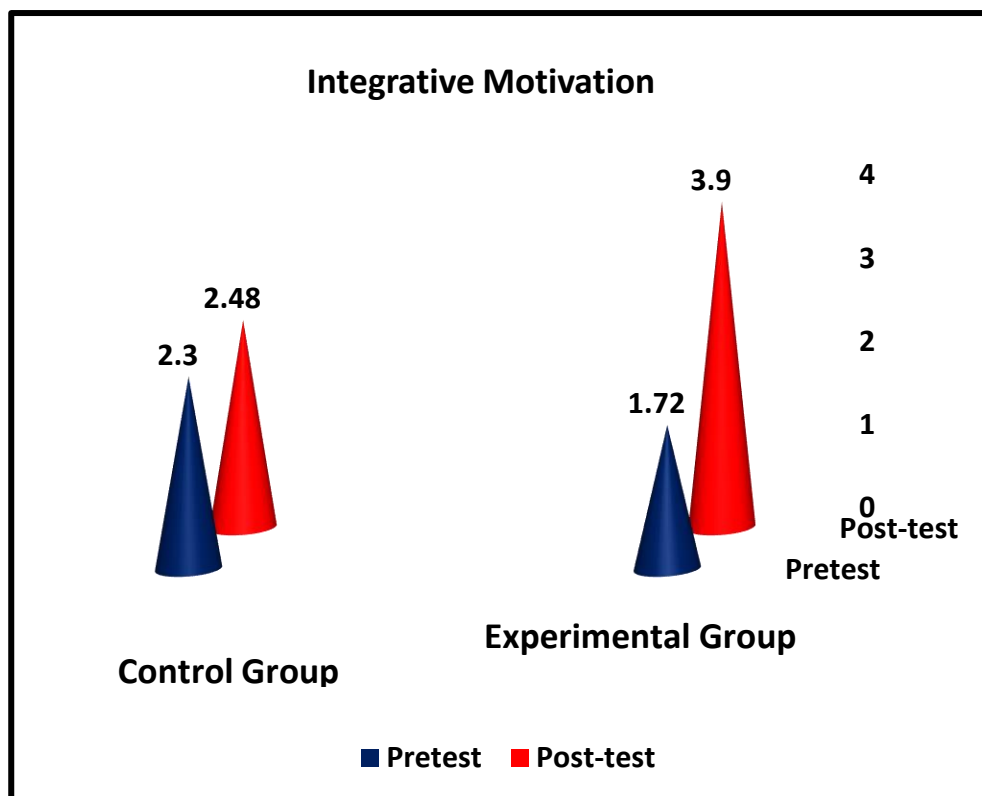

Figure 2. *The Differences in Means of Integrative Motivation between the Experimental and Controlled Groups in the Pre- and Post-Tests.*

DISCUSSION

The results of the pre-test demonstrated that there were no statistically significant differences between the experimental and control groups in students' means responses of motivation. However, the results of the post-test indicated that there were statistically significant differences between the experimental and control groups. The significant difference in

students' means responses of motivation in the post-test demonstrated the positive and significant effect of using educational mapping in teaching English on students' motivation. It also showed that the experimental group outperformed the control group; hence, using educational mapping in teaching English was more beneficial than using other common methods.

The findings of the current research confirmed the results of several studies. For example, Grabe (2009) found that using mapping is an effective teaching strategy that can increase students' motivation and curiosity to pay attention and participate while learning. In addition, Goehle (2013) stated that using games could foster students' engagement, interaction and enthusiasm. That is, using games in teaching helped students to trust their abilities and skills, hence, using games increased learners' enthusiasm and motivation to learn. Moreover, Miao (2007) indicated that using mapping is very beneficial because it assists students to be encouraged and motivated while learning. It helps learners to apply and use words and phrases correctly.

The researcher thinks that there are many reasons for these results. First of all, using educational mapping in teaching English was introduced as a game and new method. Therefore, it attracted their attention and helped them to concentrate. Then, they felt that they could understand the given topics since the structure of mapping could simplify the content by showing the major and minor ideas. When the students felt they understood the given topics; it helped them not to feel nervous, reduced their fears and created an enjoying learning atmosphere.

These interpretations came in line with several studies. Firstly, Kotcherlakota et al. (2013) stated that using mapping helps learners to organize the content of knowledge that they are learning. Secondly, Hanewald (2012) found that the structure of mapping aids learners to develop their learning skills. Thirdly, Stephen and Hermus (2007) indicated that using educational mapping is a powerful teaching tool that makes the process of teaching interactive, enjoyable and interesting since it connects ideas together.

In addition, the researcher thinks that the simple structure of mapping helped students to learn, memorize and recall words easily. Thus, it enriched their vocabulary and helped them to express themselves easily. Therefore, their skills and abilities to form sentences and answers were increased. Hence, they were encouraged to participate and answer questions. When the students noticed that their abilities improved, and they could play their roles as students effectively, their motivation was increased.

The interpretation and results of this study confirmed the results of several studies. First, Farrand et al. (2002) indicated that mapping assists students to study and arouse their motivation to learn since the design of mapping provides effective elaborations. Mapping also can be considered as a helpful studying tool because it organizes the data properly. Second, Goodnough and Woods (2002) stated that learners find educational mapping as an enjoyable and encouraging tool since it could motivate them to share ideas, participate, answer questions

and express themselves in various academic contexts. Third, Mona and Adbkhalick (2008) found that mapping helps students to organize their understanding, and it motivates them to be productive. Fifth, Brinkmann (2003) found that mapping could foster learners' creativity and motivation. It helps learners to categorize information properly; using mapping in teaching can largely arouse students' enthusiasm and attention since it illustrates the lesson simply. In addition, using mapping in teaching accounting course made the process of learning enjoyable and interesting by providing visual aids and illustrations, and using pictures, links and colors. Sixth, Fiktorius (2013) stated that educational mapping is a powerful tool that encourages students to participate by increasing their motivation. Using mapping assists learners to introduce new ideas and connect different ideas together. Seventh, Goldberg (2004) indicated that educational mapping is an effective teaching and learning aid that could foster students' engagement and involvement.

On the other hand, the development of the controlled group was not statistically significant. The researcher thinks that there are many interpretations and reasons can be provided. Obviously, the students did not find anything new when the traditional method was used in the lectures. That is, it did not attract their attention or concentration. They received it as a regular routine while they were learning; therefore, it did not encourage them to concentrate while learning. Moreover, the traditional method did not simplify the content as educational mapping did. Hence, it could not assist them to know the basic and minor ideas of the content; thus, it negatively affected their general understanding. When the general understanding is negatively affected, students can notice others' low interactions; hence, they will not be enthusiastic to participate.

When lectures lack enthusiasm, a boring learning atmosphere is created. The boring learning atmosphere does not encourage students to play their roles and participate effectively. Besides, the traditional method is not based on scaffolding, comparing it with using mapping as a game. That is, the traditional methods do not take into account the individual differences such as using educational mapping. Therefore, the results of using traditional methods in teaching made the students feel either depressed or bored. That is, if the level of the content is above the students' level, they will be depressed. On the other hand, if the level of the content is under the students' level, they will be bored. The traditional methods cannot deal with individual differences appropriately, however, using educational mapping in teaching English language allows the teacher to scaffold and assist students according to their level, leading to positive results. On the other hand, traditional methods do not activate all students' interaction since they do not simplify the content according to students' level as using educational mapping does. Therefore, the students will not be active and encouraged. When the students lack the suitable enthusiasm to participate, their motivation will decrease. Thus, the motivation of the control group was low.

However, according to the findings of the study, students' motivation was not affected by the variable of gender. That is, there were no statistically significant differences attributed to

gender in the post-test. The researcher thinks that there are many reasons for the results of the current study according to gender. First, using educational mapping in teaching English language influenced and improved the motivation of males and females nearly in the same way; that is, both males and females liked the method, and it affected their motivation approximately in the same way. Second, the sample of this study was master's degree students, and when they were encouraged to learn English language using this method, they were affected roughly in the same way.

Indeed, relying on scaffolding strategy enriched and developed the process of teaching; that is, it simplified the content, increased students' understanding, aroused enthusiasm and helped students to play their roles, participate, communicate and build their knowledge. The scaffolding strategy helped the lecturer to deal with the individual differences appropriately and activate all students regardless of their previous academic level. It created an enjoyable and challenging learning atmosphere that encouraged students to pay attention, concentrate, communicate and compete with each other.

CONCLUSION

The current study recommends using educational mapping as a game in teaching English language to foster university students' motivation. The researcher thinks that the simple structure of educational mapping helped students to learn, memorize and recall words easily. Thus, it enriched their vocabulary, and they felt that they could express themselves. Therefore, their skills and abilities to form sentences and answers were increased. Consequently, they were encouraged to participate and answer questions. When the students noticed that their abilities improved and they could play their roles effectively, their motivation was increased. Hence, the study suggests conducting future research to investigate the impact of using educational mapping on students' writing, reading, speaking and listening skills.

Limitations of the Study

The main limitations of the study were:

Objective limitations

Using Educational mapping as a game in teaching English Language.

Time and place limitations

a- Time of the study: the study was conducted in the summer semester of the academic year 2022 -2023.

b- Location of the study: the study took place at Al-Quds Open University in Ramallah.

Procedural limitations

a- Methodology: the researcher used the quasi-experimental design (training program).

b- Sample: the researcher used stratified random sampling. The participants of the study were Master's degree students from Al-Quds Open University; that is, the sample was 36 students.

c- Tools: the researcher used an English language motivation scale

d- Validity and reliability: the researcher tested content and construct validity; besides, the researcher tested the reliability of the scale by finding Cronbach's Alpha.

e- Statistical programs: the researcher used SPSS, ANCOVA and MANCOVA to analyze the data.

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