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إدارة: البحوث والنشر العلمي ( المجلة العلمية)

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**Using a brain learning theory-based program  
to develop negotiation skills of Faculty of Education  
English Majors at Assiut University**

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## Abstract

The present research aimed at investigating the effectiveness of using a brain learning theory-based program to develop negotiation skills of Faculty of Education English Majors at Assiut University. The pre-post quasi-experimental design with one research group of thirty three 3rd year English majors was adopted to answer the question of the research and verify its hypotheses. A negotiation skills test and a rubric were designed and used to assess the participants' negotiation sub-skills before and after teaching the program. Results of the research revealed a statistically significant difference between the mean scores of the research group's total score on the pre and post administration of the negotiation skills rubric at the level of (0.01), in favor of the post administration, which indicated the positive effect of the program. Implications, recommendations and suggestions for further research were also included.

**Key Words :**Brain learning theory, Negotiation Skills.

## مستخلص البحث

هدف البحث الحالي إلى تنمية بعض مهارات التفاوض لدى طلاب شعبة اللغة الإنجليزية بكلية التربية جامعة أسيوط وذلك باستخدام برنامج قائم على نظرية التعلم المستند إلى الدماغ. وللإجابة عن سؤال البحث والتحقق من صحة الفروض، تم استخدام المنهج شبه التجريبي ذا المجموعة التجريبية الواحدة التي تكونت من ثلاث وثلاثون طالب وطالبة بالفرقة الثالثة، شعبة اللغة الإنجليزية (عام). كما تم تصميم اختبارا لمهارات التفاوض بالإضافة إلى مقياس أداء متدرج لتقييم مستوى الطلاب في بعض المهارات الفرعية للتفاوض قبل وبعد تطبيق البرنامج. وأوضحت نتائج البحث وجود فرق دال إحصائيا عند مستوى دلالة (٠.٠١) بين متوسطي درجات الطلاب مجموعة البحث في القياسين القبلي والبعدي للدرجة الكلية لمقياس الأداء المتدرج لمهارات التفاوض وذلك لصالح التطبيق البعدي مما يؤكد فاعلية البرنامج المقترح. كما تم عرض بعض التطبيقات التربوية بالإضافة إلى التوصيات والمقترحات لأبحاث مستقبلية.

**الكلمات المفتاحية:** مهارات التفاوض - التعلم المستند إلى الدماغ

## Introduction

The ability to speak skillfully is considered a basic tool to communicate successfully while using a foreign language. Speaking is one's basic tool to express his/her own thoughts, ideas, feelings and share them with others. No one can infer what we are thinking about or what is in our minds unless we start to show up and speak. Thus, speaking is God's gift which makes us human.

The use of English as a second language (ESL) or foreign language (EFL) in oral communication is, without a doubt, one of the most common but highly complex activities necessary to be considered when teaching the English language especially because we —live in a time where the ability to speak English fluently has become a must, especially who want to advance in certain fields of human endeavor (Al-Sibai, 2004, p.3).

Although speaking is now the most emphasized skill in the field of foreign language teaching, it is considered the most difficult one to develop in classroom conditions. Shabani( 2013) maintained that what makes speaking more challenging than other skills is that the speaker needs to have a quick access to all the relevant knowledge required to produce the appropriate language in short time, whereas in other skills the learner may have enough time to match the input with the existing knowledge.

We speak more than we write to communicate with others in our daily life. Therefore, to a language teacher, teaching speaking well and helping learners to be skillful and competent speakers of English is often a valued issue in the field of ESL/ EFL. Various teaching methods and approaches have been used in teaching and learning English as a foreign language over years. Some of which focused on grammar, others focused on fluency, others on comprehension and some others paid more

attention to the learner himself for being the basic element in the learning process e.g. (The Grammar Translation Approach, The Direct Method, The Audio-lingual Method, and Communicative Language Teaching). Moreover, many strategies have been used to develop different speaking skills such as cooperative learning, role play, task-based learning, project-based learning, problem solving and so on. The present research will use Eric Jensen's 7 brain-based learning stages assuming, as Jensen (2008) suggested, that it is better to learn according to the way the brain is naturally designed to learn.

Additionally, there is a strong relationship between language, as means of human communication, and the brain which controls our thinking and behavior as thinking is considered the basic controller of language arranging and producing process. So, we can say that there is a cause-effect relationship between thinking and producing the language (Alhalaq, 2007, p. 19) .

Jensen ( 2008, p. 4) stated that brain-based education is best understood in three words: engagement, strategies, and principles. Brain-based education is the engagement of strategies based on some principles derived from understanding the nature of the brain and how it better works. So, a program designed in light of brain-based learning is suggested in this thesis to develop some speaking skills based on the following **12 principles by (Caine& Caine, 1991, pp. 79-87):**

1. The brain is a parallel processor.
2. Learning engage the entire physiology.
3. The search for meaning is innate.
4. The search for meaning occurs through patterning.
5. Emotions are critical to patterning.
6. The brain processes wholes and parts simultaneously.

7. Learning involves both focused attention and peripheral perception.
8. Learning involves both conscious and unconscious processes.
9. We have two types of memory: spatial and rote.
10. We understand and remember best when facts and skills are embedded in natural, spatial memory.
11. Learning is enhanced by challenge and inhibited by threat.
12. Each brain is unique.

These principles of brain-based learning propose that effective learning could occur only through practicing real life experiences. Learning becomes more expressive when the brain supports the processes in search of meaning and patterning. (Ozden& Gultekin, 2008).

Equipped with an array of diverse teaching approaches, EL (English Language) teachers can tap into the best of brain-compatible learning and neurodevelopmental applications, providing innovative ways to reach students (Lombardi, 2008). In Light of the above, a seven-stage-strategy proposed by Jensen (2008) based on the previously mentioned 12 principles was suggested to be used to help develop Faculty of Education 3rd year English majors' speaking skills. The seven stages are 1) pre-exposure, 2) preparation, 3) initiation and acquisition, 4) Elaboration, 5) Incubation, 6) verification and confidence check, and 7) celebration and integration.

### **Statement of the Problem**

Third year English majors at Faculty of Education, Assuit University, have low level in negotiation skills; the current research is an attempt to investigate the effect of a suggested program based on brain learning theory to develop English majors' negotiation skills.

## Objectives

### The present research aimed at:

- 1- Developing some negotiation skills of 3rd year English majors at Faculty of Education, Assiut University using a suggested brain-based learning program.
- 2- Identifying the effect of a suggested brain-based learning program on developing 3rd year English majors' negotiation skills.

## Question

What is the effect of a program based on brain learning theory on developing negotiation skills of 3rd year English majors at Faculty of Education, Assiut university?

## Hypothesis

There would be a statistically significant difference between the mean scores of the research group's negotiation skills in the pre-post administration of the negotiationskills test, in favor of the post administration.

## Literature Review and Related Studies

Being a still recent field of research, research on brain-based learning attracted many researchers whether in Egypt or worldwide. Through a comprehensive review of literature, the researcher tried to include some relevant studies which applied brain-based learning on improving different learning skills and showed possible positive effect among different learners.

Some studies utilized brain-based learning theory as a research framework; for example, a qualitative research by Ditullio ( 2018) entitled "An examination of planning and implementing brain-based strategies in the elementary classroom", aimed at exploring to what extent teachers know about brain-based learning theory in their teacher

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preparation programs. The research utilized a semi-structured, face-to-face interview method and found that teachers often unknowingly implement brain-based learning strategies although they had little knowledge of brain-based learning theory; this knowledge would not increase unless they had engaged in professional development specific to brain-based learning.

Similarly, a research by Correar ( 2018) connected English language teaching with the 12 brain/mind learning principles. In his research, the researcher presented every principle followed by some general practical suggestions related to English language teaching as examples; suggesting that there is a connection between the 12 brain/mind learning principles and English language teaching.

Furthermore, the results of a research by Deepa ( 2019) entitled "brain based strategies in English language teaching" showed that English language teaching techniques has the brain-based teaching strategies that enhances the learning process. The research also resulted in some English language teaching methods and techniques that come under brain-based learning e.g. role-play, dramatization, storytelling, audio-lingual method, total physical response, cartoons, teaching through arts, and communicative language teaching.

A research by Chelbi( 2016) aimed at investigating EFL learners' motivation and English speaking skill development using Cooperative Learning activities at the Department of Letters and English at Constantine University. With a sample of third year students, results provided by the pre and posttests determined the effect that Cooperative Learning activities had on the experimental group as contrasted with the control group who performed the tasks individually. A post questionnaire was administered at the end of the experiment to the experimental group, so as to survey to what extent Cooperative Learning activities could be useful in bolstering up the learners' motivation. Overall, the comparison



of the pre and posttests' results of both groups revealed that the students who worked cooperatively to perform the tasks assigned to them outscored the students who worked individually to solve a given task.

Moreover, a research by Samah( 2016) aimed at investigating the effect of teaching some self-regulated strategies to Egyptian university students on improving their speaking proficiency and reducing their speaking anxiety. The researcher adopted a one group pre-posttest quasi experimental design. Forty 3rd year EFL university students were selected and tested using a pre-post speaking test and speaking anxiety scale before and after being exposed to the self-regulated strategy treatment. Paired- samples t-test revealed significant differences between the pre-test and post-test of speaking proficiency as well as speaking anxiety in favor of the posttests. Additionally, a negative correlation was shown between speaking proficiency and speaking anxiety. It was concluded that teaching self-regulated strategies to university students was effective in developing their speaking proficiency and reducing their anxiety considerably.

As the afore-mentioned studies clarified, numerous teaching approaches, strategies and techniques had been used with the aim of developing EFL learners' speaking skills and came to many desirable results. The current research attempted to differently create a positive brain-friendly learning environment where all students are active and engaged based on the core principles of brain learning theory and Eric Jensen's seven stages of brain based planning that was used in organizing the lessons of the suggested program.

## Design

The pre-post quasi-experimental research design was adopted in the present research with one research group which functioned as the experimental group and received training on some specific speaking skills in light of the suggested program and was subjected to a pre-post

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speaking test to assess their performance levels using a speaking rubric. The descriptive methodology was also adopted throughout the theoretical background and literature review part of the research.

## Participants

Thirty three male and female pre-service teachers of 3rd year English majors at Faculty of Education, Assiut University were randomly selected for the present research. At first, the preliminary research instruments were piloted to only 20 students, who were not of the research group, in order to assure their validity for the present research. They were taught a sample lesson and their feedback on both the content and procedures of the lessons was really encouraging . In addition, the speaking pre-posttest was administered to the same group to ensure its validity, reliability and time suitability.

## Procedures

**To answer the question of the study and achieve its objectives, the researcher :**

1. reviewed some literature pertinent to developing speaking skills and brain-based learning strategies.
2. prepared a preliminary list of some speaking skills required for third year English majors at Faculty of Education, Assiut University and submitted it to a jury to edit.
3. modified the list according to the jury's feedback.
4. prepared a suggested program( an instructor's guide & a student's book) based on brain learning theory to develop Faculty of Education English majors' speaking skills.
5. submitted the suggested program to a jury to edit; then, modified it according to the jury's feedback.

6. prepared the Research tools; the speaking pre- post oral test and the speaking rubric.
7. submitted the research tools to a jury to edit and ensure their validity and reliability; and mad the necessary modifications accordingly.
8. piloted the research materials and instruments on a group of 20 third year English majors at Faculty of Education, Assiut University to ensure their validity and reliability and made proper changes.
9. selected the research group from third year English majors at Faculty of Education, Assiut University.
10. pre administered the research tools to the research group.
11. taught the study group using the content of the brain-based learning theory program.
12. post administered the research tools to the research group.
13. collected data and analyzed them statistically using SPSS.
14. analyzed the results and offered recommendations and suggestions for future research.

## **Materials and Instruments**

**To achieve the objective of the research, the following materials and instruments were designed and used:**

### **a -Research materials**

A suggested program based on brain learning theory consisting of:

- A student's book.
- An instructor's guide.

### **b- Research instruments**

- A negotiation skills checklist.

-A pre-post speaking skills test.

-A speaking skills rubric.

### **Structure of the program**

#### **The program consisted mainly of:**

A- A student's book whose content was collected and designed in a way that might help the students develop their negotiation skills and enjoy their learning. In the lessons, the students could practice and develop the required skills. At the end of the unit, there was an evaluation lesson to assess the students' development.

B- An instructor's guide which described in detail the procedures of teaching the lessons of the student's book. Each lesson in the program had a timetable that could be a guide for teaching each stage in the lesson in accordance with Eric Jensen's 7 brain-based learning stages.

### **Validity of the program**

To ensure its validity, the program was subjected to a number of jury who ensured the validity of its content and its suitability to the students' level, the objective of the research and for the skills intended to be developed. They also suggested some modifications which the researcher did, such as adding extra activities in some lessons

### **Piloting the program**

The program consisted of three units. So, to pilot the program, one lesson from each unit was taught to a pilot group of 20 students from 3rd year English majors at Faculty of Education, Assiut University who gave some encouraging comments related to the content, procedures, time, activities, and evaluation techniques of the lessons. This procedure undertook a four-hour session and helped the researcher add some modifications and be sure that the program was then ready to be implemented.

## **The pre-post negotiation skills test**

### **Test objectives**

A pre-post negotiation skills test was designed in order to evaluate Faculty of Education, Assiut University 3rd year English majors' mastery of some negotiation skills. A speaking skills rubric was also designed in order to assess and grade the students' performance on the pre-posttest in light of it.

### **Test piloting**

The test was piloted on a sample group of 20 students from 3rd year English majors at Faculty of Education, Assiut university to ensure the clarity and suitability of test tasks to the students' level and estimate the appropriateness of the time allotted for each task. After making some changes on the test based on the piloting, the test was administered to a number of jury and the researcher made the modifications based on their feedback; such as adding more instructions at the beginning of the test and adding a transcript (responses I expect from the participants) at the end.

### **Test scoring**

A speaking rubric was designed and used to score the test. The total score of the pre-post negotiation skills test was 30 points. Each one of the six sub-skills had a score ranging from 1-5 on the rubric based on the students' performance on the test tasks.

### **The negotiation skills rubric**

In order to score the test, a negotiation skills rubric was designed and used. It had 5 levels of mastery: level 5(Advanced), level 4 (Competent), level 3( Satisfying), level 2( Developing) and level 1( Beginning). The sub-skill that was assigned (5) means that the student is at the advanced level of the skill; while the sub-skill that was assigned (1) means that s/he is at the beginning level of that skill.

## Validity and reliability of the speaking skills rubric

### Internal consistency validity

In order to find out the correlation between the degree of each performance item with the total score of the negotiation rubric, Pearson Correlation Coefficient between each performance item and the total score of its skill was used as the tables below clarifies:

#### Internal Consistency of the negotiation skills rubric

Negotiation Skills	
Item	Correlation with item skill
1	0.481*
2	0.566**
3	0.538*
4	0.630**
5	0.490*
6	0.596**

\*\* Significant at (0.01) level, \* significant at (0.05) level

### Reliability of the negotiation skills rubric

To find out whether the rubric was reliable, the value of the Alpha Cronbach Coefficient was calculated and was found to be (0.827) which was considered a high value (greater than 0.7) which indicated that the rubric was highly reliable and its results could be trusted. The rubric was piloted on a group of 20 students and its reliability was calculated using the Alpha Cronbach Coefficient.

### Inter-rater reliability of the negotiation skills rubric

Inter-rater reliability was also used to assess the rubric's reliability; the researcher and another rater- who met the criteria- worked together to rate the participants' performance on the speaking skills rubric. Scoring

reliability among raters was estimated using Cohen's kappa ( $\kappa$ ). Viera & Garrett (2005) describe a heuristic interpretation of rater agreement represented by various kappa values:  $\kappa < 0$  is worse than chance;  $0 < \kappa < 0.2$  is slight agreement;  $0.2 < \kappa < 0.4$  is fair agreement;  $0.4 < \kappa < 0.6$  is moderate;  $0.6 < \kappa < 0.8$  is substantial agreement;  $0.8 < \kappa < 1$  indicates almost perfect rater agreement.

Skills		Cohen's kappa ( $\kappa$ )
Negotiation Skills		
1	Active listening	0.847
2	Defending views with convincing evidence	0.874
3	Monitoring understanding of the target topic	0.856
4	Building on previous utterances	0.909
5	Repairing communication breakdown	0.838
6	Giving feedback on stated viewpoint	0.921

As the table above shows, all Cohen's kappa were greater than (0.80). As a result, the rubric was deemed reliable.

## Findings

To test the hypothesis which states: "there would be a statistically significant difference between the mean scores of the research group's negotiation skills on the pre-post administration of the negotiation skills test, in favor of the post administration". The table below clarifies results of paired sample "t" test of the difference between the mean scores of the research group's negotiation skills on the pre and post administration of the rubric.

**Paired- sample T-test results of the differences between the mean scores of the research group on negotiation skills on the pre-post administration of the negotiation test**

Skills	Pre		Post		T*	Sig.
	Mean	SD.	Mean	SD.		
Negotiation Skills						
18	Active listening	2.38	0.85	4.38	0.50	17.06 0.01
19	Defend views with convincing evidence	2.29	0.75	4.47	0.56	16.09 0.01
20	Monitoring understanding of the target topic	1.76	0.65	3.73	0.47	23.42 0.01
21	Building on previous utterances	1.97	0.84	4.32	0.53	19.54 0.01
22	Repairing communication breakdown	1.88	0.65	4.12	0.55	21.91 0.01
23	Giving feedback on stated viewpoint	1.79	0.72	3.94	0.58	20.85 0.01
Total score		12.06	3.78	24.96	1.86	25.27 0.01
Degrees of freedom (df) for all t values = 32						

**The analysis of the above table shows that :**

- 1- there was a statistically significant difference between the mean scores of the research group's negotiation skills on the pre-post administration of the negotiation skills test at the level of (0.01), in favor of the post administration.
- 2- the value of "t" amounted to (25.27) for negotiation skills as a whole which is a significant value at the level of (0.01).



3- there was a statistically significant difference at 0.01 level between the mean scores of the research group on the pre-post testing of negotiation sub-skills: (active listening, defending views with convincing evidence, monitoring understanding of the target topic, building on previous utterances, repairing communication breakdown, giving feedback on stated viewpoint), in favor of the post administration; and "t" value amounted to (17.06, 16.09,23.42,19.54, 21.91, 20.85) respectively which are significant values.

Additionally, to find out effect size value, both "Eta squared" and "Cohen's d" were used as shown in the coming table:

**Effect size of the suggested brain learning theory based program on developing negotiation skills of the research group**

**Skills Effect size**

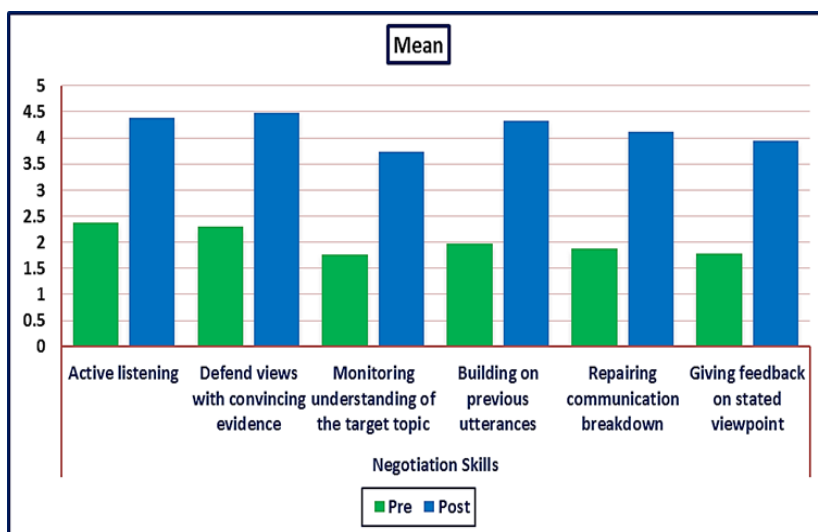
Skills	Effect size			
	Cohen's d	Eta squared		
Negotiation Skills				
18	Active listening	2.97	0.901	Large
19	Defend views with convincing evidence	2.80	0.890	Large
20	Monitoring understanding of the target topic	4.08	0.945	Large
21	Building on previous utterances	3.40	0.923	Large
22	Repairing communication breakdown	3.81	0.938	Large
23	Giving feedback on stated viewpoint	3.63	0.931	Large
Total score		4.40	0.952	Large

**The table above shows that:**

1- all effect size values of negotiation skills were large; effect size values for the total score of negotiation skills was( 4.40) using Cohen's d and (0.952) using Eta squared.

2- effect size values of negotiation sub-skills: (active listening, defending views with convincing evidence, monitoring understanding of the target topic, building on previous utterances, repairing communication breakdown, giving feedback on stated viewpoint) were (2.97, 2.80, 4.08, 3.40, 3.81, 3.63) respectively using Cohen's d and (0.901, 0.890, 0.945, 0.923, 0.938, 0.931) respectively using Eta squared which are large values. This development in the research group's performance on negotiation sub-skills on the post administration of the speaking rubric can be attributed to the program based on brain learning theory taught to them and that whereby ensures the effectiveness of **the program as shown in the figure below:**

**Difference between the mean scores of the research group's negotiation skills on the pre-post administration of the negotiation skills test**



## Discussion of the results related to Hypothesis IV

The results of the fourth hypothesis indicated that there was a statistically significant difference between the mean scores of the research group in negotiation skills on the pre and post administration of the negotiation skills test at the level of (0.01), in favor of the post administration. The research group's mean scores in negotiation skills were (12.06) on the pre testing and (24.96) on the post testing which can be considered a good and acceptable development on the participants' performance.

The development on the participants' performance in negotiation skills may also be attributed to the content, activities, methods and evaluation techniques used in teaching the brain based suggested program to them. Participants of the research were provided many contexts in which they were asked to negotiate certain matters with one or more colleague to reach an agreement or a win-win-solution for all parties. They engaged in the tasks enthusiastically and achieved a better level of performance by the time.

## Conclusion

Despite many difficulties encountered both in teaching and assessing negotiation skills, the results of the research were really encouraging as they showed a considerable development of the participants' skills. This was asserted by the statistically significant difference between the mean scores of the research group on the pre-post administration of the negotiation test and rubric, in favor of the post administration.

Many factors may have contributed to the positive effect of the brain learning theory based program on developing 3rd year English majors negotiation skills. As one important principle of brain-based

learning, the brain learns best when there is an encouraging environment that is challenging and free of threat. Students were given a chance to engage in different activities and express their ideas, opinions and feelings freely. They were permitted to meet any physical needs such as moving, drinking water or even eating inside the class setting. Light, ventilation and organization of seats all was paid a great attention when choosing the teaching hall. This brain-friendly environment may be one reason beyond the positive effect of the program.

Additionally, the program targeted giving more space for all participants to speak as much as possible and manage their own learning to get the most of it. Although they had done much of the work throughout the speaking sessions, the role of the instructor wasn't that eliminated. She was the planner of the lessons, organizer of a brain-friendly learning environment, mentor of the groups in speaking activities, facilitator who provided answers and prompts when needed and, finally, supportive to her students by giving positive comments and nonjudgmental feedback after fulfilling each task. These different roles may have played an important role in achieving the program objectives as well.

## **Implications**

**Some pedagogical implications could be obtained based on the findings of the present research as follows:**

1. developing speaking skills makes the students feel more confident when using the foreign language either inside or outside their classrooms.
2. instructors who apply brain-based learning on their language classes has to deal with each student's brain as different and unique and, thus, use the best methods that fit his/her learning style.

3. best language learning takes place when a brain-friendly-environment is created where all students' needs are met.
4. using diverse speaking activities and technique helps students become more social and overcome their fears by the time.
5. brain-based learning can help shy and poor level students gain more confidence of themselves and be more willing to take part in different conversations.

## **Significance**

### **Results of the present research may help in:**

1. equipping English majors with solid knowledge of a number of brain-based learning strategies that can help develop their speaking skills.
2. offering an oral speaking test and a rubric that can help assess English majors' level of speaking proficiency.
3. designing speaking courses in light of the findings of brain-based learning.
4. providing EFL instructors with an instructor's guide of how to use brain-based learning strategies on their speaking sessions.
5. encouraging other researchers to do more research in language learning in general and English language speaking in particular using brain-based learning strategies.

## **Recommendations**

### **In light of the results discussed above, the researcher proposed some recommendations:**

- 1- there should be a separate two-hour-session for the speaking course apart from another two-hour-session listening course for English section students so as to provide sufficient time for all students to take part in various speaking activities.

- 2- there should be a speaking content or even an outline of the most needed speaking skills at each level accompanied with a series of topics available to be taught to English section students ranging from the easiest to the most complicated throughout the four academic years.
- 3- speaking course should be taught in labs not halls.
- 4- the maximum number of the students at a speaking session should range from 20-30; so that they have the chance to participate.
- 5- instructors should pay considerable attention to creating an encouraging learning environment which is brain-friendly.

### **Suggestions for further research**

**Based on the results of the present research, the following topics are suggested for further research:**

- 1- researching the effect of a suggested brain-based learning program on developing secondary school students' self-regulated motivation for improving speaking English as a foreign language.
- 2- researching the effect of a suggested brain-based learning program on developing fluency in speaking English among secondary school students.
- 3- researching the effect of a suggested brain-based learning program on developing critical thinking skills and creativity among learners in different educational stages.
- 4- researching the effect of a suggested brain-based learning program on developing preparatory stage students' speaking skills.

- 5- researching the effect of a suggested brain based learning-program on developing secondary stage students' social emotional learning.
- 6- researching the effect of brain-based learning strategies on developing creative writing skills among English majors at Faculty of Education.

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