Enhancing Preparatory School Pupils' Motivation to Learn EFL

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Abstract

The present study was conducted to investigate the effect brain-based learning on developing preparatory school pupils' motivation towards learning EFL. The study used the pre-post tested one group design. The participants were 30 first year preparatory stage pupils from Dr. Mustafa Musharraf Preparatory School in Cairo. To achieve the aim of the study, a motivation scale was designed to measure the pupils' motivation towards learning English. It was administered to the participants before and after the experiment. The motivation scale was administered before the implementation of the program to identify the participants' entry level of motivation. Then, the proposed program based on brain-based learning was implemented. After that, the motivation scale was administered for the second time to measure the participants' level of motivation after studying the designed program. The mean scores of the pre-post administrations of the motivation scale were statistically treated. The results indicated that there was a statistically significant difference at 0.01 in the pre- and post-administrations of the motivation scale in favor of the post-administration. In light of this finding, it is recommended that the use of brain-based learning should be exploited to enhance pupils' motivation towards learning EFL.

Key words:

Brain-based learning, learning motivation, preparatory school pupils

المستخلص

أجريت هذه الدراسة للتحقيق في تأثير التعلم المعتمد على الدماغ على تنمية الدافعية لتعلم اللغة الإنجليزية كلغة أجنبية لطلاب المدارس الإعدادية. استخدمت الدراسة تصميم المجموعة الواحدة، وتكونت عينة البحث من ٣٠ تلميذة من الصف الأول الإعدادي في مدرسة الدكتور مصطفى مشرف الإعدادية بالقاهرة. ولتحقيق هدف الدراسة، تم تصميم مقياس الدافعية لتعلم الانجليزية القبلي البعدي لقياس دافعية التلميذات لتعلم اللغة الإنجليزية كلغة أجنبية. وقد تم تقديم المقياس للتلميذات قبل التجربة وبعدها، حيث تم اختبارهن قبل تطبيق البرنامج لتحديد مستوى الدافعية لتعلم الإنجليزية كلغة أجنبية لدى التلميذات. وبعد ذلك تم تنفيذ البرنامج المقترح القائم على التعلم القائم على الدماغ، ثم تم اجراء المقياس البعدي لقياس التطور في مستوى الدافعية لتعلم الإنجليزية كلغة أجنبية لدى التلميذات عينة البحث. وقد تم معالجة متوسط درجات المقياس القبلي البعدي إحصائيًا، وأشارت النتائج إلى وجود فرقا إحصائيًا عند ٠.٠١ في الاجراء القبلي والبعدي لصالح المقياس البعدي. في ضوء هذه النتيجة، يوصى باستخدام التعلم القائم على الدماغ لتنمية الدافعية لتعلم الإنجليزية كلغة أجنبية. لدى تلاميذ المرحلة الإعدادية.

الكلمات المفتاحية:

التعلم القائم على الدماغ، الدافعية لتعلم الإنجليزية كلغة أجنبية، تلاميذ المدارس الإعدادية

Introduction

Motivating EFL students has been given much more attention during the past decades and the importance of motivation has been regarded by many educational psychologists as a basic factor which influences students' success or failure in any educational process especially in learning a foreign language. This has encouraged many teachers, educators and researchers to investigate the role of motivation in learning-teaching process of English as a foreign language.

According to Ellis (2012, p. 75) motivation is believed to influence the pace of learning as well as the eventual achievement. In addition, motivated learners can be easily spotted inside a classroom or outside. They are keen to learn, eager to rehearse what they learn with their classmates or outside the classroom with other people. Their efforts to learn usually remain steady for an extended period. In other words, motivation is not just a desire to begin something, it also explains how much effort one is going to employ and for how long that effort will be sustained. Brumen (2011, p. 717) states that motivation was earlier thought to be unchanging and quantifiable, however, current research in the field have brought more different aspects of motivation. It suggests that it is flexible and adapts to changing contexts, times and situations.

Bernaus and Gardner (2008, p. 395) assure that motivation is a key predictor of success in learning a language. According to Chalak and Kassaian (2010, p. 27), learners' failure or success is explained by the degree of their motivation. Wink (2013, p. 112) motivation has a substantial effect on foreign language acquisition. So, researching and examining the role of motivation in learning English as a foreign language has received significant attention by linguists and educators.

On the other hand, brain-based learning (BBL) refers to a learning technique which relates to the characteristics the brain is naturally designed to learn (Jensen, 2008, p. 18). It is a teacher facilitated methodology which utilizes learner's cognitive endowments as it is derived from BBL principles (Thomas and Swamy, 2014, P. 62). Traditionally, teaching techniques concentrated primarily on what

teachers do or capable of doing in the classroom with no consideration regarding the learners' attributes. Conversely, learner-centered methods to teaching and learning focus mainly on what learners can do to optimize their learning rather their teachers. Respress and Lutfi (2006, p. 24) state that in traditional teaching methods, students tend to learn through a basic curriculum designed with homogenous learning styles with no attention to students' different learning styles and inclinations. This results in lack of engagement, boredom, and low achievement.

In contrast to traditional methods of teaching and learning which hinder learning by ignoring brain's natural learning processes, learner-centered approaches such as BBL, reinforce learning as they address learners' whole personal qualities. They are holistic approaches toward learning. Jensen (2005, P. 96) maintains that Brain Based Learning (BBL) favors the brain's natural operational principles in order to achieve maximum attention, understanding, meaning and memory.

Research in the field of BBL provided educators with strategies and techniques which assist communication between the parts of the brain responsible for storing and processing information (Willis, 2007, p. 1). Brain research indicates that the brain does not act as a computer as some educators formerly assumed. On the contrary, the brain requires to use various strategies to create meaning (Slavkin, 2004, p. 13). The brain regularly rewires itself to access new experiences and memories. There are 100 billion of brain cells (neurons). These billions of neurons alone cannot make the brain intelligent. This happens when the neuron's dendrites (long tentacles that resemble tree branches) connect to another neuron's dendrites that learning occurs. These connections are the pathways for new learning (Wolfe, 2001, p. 15).

Being a teacher of English, the researcher noticed that motivating EFL learners is not given due attention in the Egyptian schools despite its great importance. Teachers concentrate mainly on teaching language skills and neglect developing learners' motivation. Moreover, some researchers reported the poor level of motivation towards learning English in the Egyptian context, such as (Safein, 2012 and Ibrahim, 2019). Therefore, the researcher decided to conduct the current research to

investigate the effect of BBL on developing preparatory school pupils' motivation towards learning English.

Context of the Problem

The Problem of the research was recognized and documented by the researcher through the following:

First: The experience of the researcher

In the light of the researcher's experience as a teacher of English, it was observed that first year preparatory stage pupils have poor level of motivation towards learning English which was obvious through their performance in class.

Second: The Pilot Study

To make sure of what he observed, the researcher prepared a questionnaire and interviewed a group of English language teachers (n= 9) in two preparatory schools (Dr. Mustafa Musharraf school and Dr. Magdy Yacoub school). Most of the teachers confirmed that first-year preparatory stage pupils have poor level of motivation towards learning English despite its importance for learners in different educational stages in general and for preparatory stage pupils in particular. In addition, most of the teachers assured that they used regular instruction in teaching English. They also mentioned that they did not care much about developing learners' motivation as they were usually obliged to finish the long and demanding syllabus they had to teach before the end of the term. Furthermore, some teachers believed that textbooks did not provide activities which aid in developing learners' motivation towards learning English.

Third: Previous Research

The problem of the research was further supported by reviewing past related research. Previous research on motivation towards learning English in the Egyptian context such as (Ibrahim, 2019 and Safein, 2012) reveal the persistence of the actual problem of poor level of motivation among EFL learners in Egypt.

Statement of the Problem

Based on the review of literature and the results of the pilot study, the problem of the research can be stated as follows:

Preparatory school pupils seem to have low level of motivation towards learning EFL.

Questions of the Study

The present study attempts to answer the following question:

How effective is the designed BBL program in developing first year preparatory school pupils' motivation towards learning EFL?

The following sub-questions merge from the main question:

- What is the proposed BBL program to develop first year preparatory school pupils' motivation towards learning EFL?
- What is the effect size of the BBL program on developing first year preparatory school pupils' motivation towards learning EFL?

Hypotheses of the Study

In order to answer the questions of the study, the following hypothesis was formulated:

There is a statistically significant difference at ($\alpha \leq 0.01$) between the mean scores of the participants on the pre- and post-administrations of motivation scale in favor of the post-administration.

Variables of the Study

The variables of the study are as follows:

1. The independent variable: The proposed BBL program.

2. The dependent variable: First year preparatory school pupils' motivation towards learning EFL.

Aim of the Study

This study aims at developing preparatory school pupils' motivation towards learning EFL through using a BBL program.

Significance of the Study

Significance of the present study lies in the fact that there are very few researches on using BBL to develop motivation towards learning EFL in the Egyptian context. The current research is, hence, an attempt to overcome the shortcomings in developing EFL learners' motivation, which is considered essential in EFL teaching and learning. Moreover, it confirms the necessity of providing EFL first year preparatory stage pupils with activities and opportunities to raise their awareness of developing their EFL skills.

Review of Literature

Origin of Brain-Based Learning

Brain-based leaning (BBL) emerged in 1980s as a whole new field based on what scientists were learning about the brain and how it might interface with education (Jensen, 2008, p. 3). Neuroscience disclosed important information about the brain and how it learns. It revealed unprecedented revolution of knowledge about the brain, including how it processes, interprets and stores information. The new BBL theory calls for shifting the focus to the learning process (Sousa, 1998, p. 1). Sousa (2010, p. 2) illustrates that researchers and practicing educators exerted great efforts to establish a legitimate scientific area of study that overlaps psychology, neuroscience and pedagogy which resulted in the rise of educational neuroscience.

Neuroscientists and educators had their role to play in the increasing amount of research done in this field. Their research studies provided a wealth of resources on brain activity and how it learns. Some of the well-known researchers in this field are: Geoffrey Caine and Renata Caine (1995; 2010), Eric Jensen (1998, 2006, 2008, 2009). Patricia Wolfe (2001, 2009), Michael Sla-kin (2002), Carol Lyons, (2003) David Sousa (2003, 2005, 2006, 2007, 2008, 2011) Kathy Nunley (2003) and Usha Goswami (2004). These researchers have launched a transformation of brain-based theories into BBL practices.

Definitions of Brain-Based Learning

Haley (2010, p. 8) states that BBL emphasizes how the brain learns naturally and is based on what is currently known about the actual

structures and functions of the brain at several developmental stages. Haley adds that brain-compatible teaching is not the only solution to solve all of education's problems, so educators need to understand certain principles and use effective strategies in meaningful ways. According to Mehta (2009), BBL is an interdisciplinary field that integrates neuroscience, psychology and education in order to create developed teaching methods and curricula. Jensen (2005, p. 57) argues that BBL could be used to create strategies which are based on the current available research. Jensen adds that BBL can be seen as techniques derived from research in neurology and cognitive science used to reinforce teacher's instruction as well as student learning. Educators ought to combine the findings of brain research and other fields to optimize their teaching techniques.

Importance of Brain Based Learning

Brain research indicates that it is essential for educators to become knowledgeable about and understand the general categories of BBL techniques as a way to enhance student learning. Jensen (2005, p. 9) argues that understanding human learning mainly depends on understanding the brain. Wolfe (2001, p. 2) clearly states that understanding the brain enables educators to design instruction to match how it learns best. In addition, Jensen (2008, p. 409) reckons that educators ought to be professional enough to say that they know why they do what they do. This conceptual framework also assists teachers in becoming highly qualified and maximizing achievement for learners.

Similarly, Erlauer (2003, p. 7) suggests that teachers should have at least general knowledge of how the brain physically works. That knowledge could help teachers understand the needs or reactions of learners and might also provide a physiological basis for particular instructional decisions. According to Willis (2012, p. 12), when teachers are aware of the way the brain functions at the level of neural networks, neurotransmitters and synapses, they have tendency to share that knowledge with learners. In consequence, they inspire learners to create a growth mind-set for learning. This gives learners the opportunity to realize their ability to change their brains, which makes them responsible

for and have confidence in the learning process. Therefore, students do well in classrooms where teachers have the added tools from their neuroscience understanding.

The Brain and Language

The study of the relationship between language and the brain is called neurolinguistics. Although this is a relatively recent term, the field of the study dates back to the nineteenth century (Yule, 2010, p. 157). Uster (2008, p. 36) states that language skills and the linguistic abilities are centered in the hemisphere in most people, and that Broca's and Wernicke's areas are particularly important interconnected structures in that part of the brain. In addition, the Broca's which is located in the frontal lobe of the left hemisphere processes grammatical structures and word production, whereas Wernicke's area, which is located in the temporal lobe of the left hemisphere, links language and thought. That means, it works for syntax production and comprehension.

According to Yule (2010, p. 162-163) Broca's area stores grammar, vocabulary, and syntax of one's native language, whereas Wernicke's area is considered the center of sense and meaning in the native language. According to Obler and Gjerlow (1999, p. 28), most people have language represented in the left hemisphere. Friederici (2011, p. 361) illustrates that the language center is located in a small area of the brain called the perisylvian region. The perisylvian region surrounds a fissure known as the sylvian fissure that separates the temporal lobe from the parietal and frontal lobe. These parietal and frontal lobes are located in the left hemisphere where the understandings of speech sounds are found.

The left-brain hemisphere, particularly the Borca's area, is responsible for the production of speech (Yule, 2010, p. 158). In addition, Zull (2002, p. 198) assures that Broca's area is the place where spoken language is assembled before it is being actually spoken. Zull further gives an example of people with damage to this area of the brain. Those people generally can understand language but cannot produce coherent sentences or phrases. Hagoort et al. (2009, p. 372) proposes further functions for Broca's area as it has been introduced to have a more

specific role in language processing, facilitating linguistically prompted operations of syntactic movement and processing hierarchical structures.

Principles of Brain-Based Learning

In order to coordinate how the brain naturally learns with brain compatible strategies, (Caine and Caine 1991, 1994, 1997; Christison, 2002; Deveci, 2014; Klinek, 2009; Jensen, 2005) summarize the theoretical foundations of BBL into the following set of principles:

1. The brain is a parallel processor.

2. Learning engages 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 parts and wholes simultaneously.

7. Learning involves both focused attention and peripheral perception.

8. Learning always involves conscious and unconscious processes.

9. We have at least two types of memory systems; spatial and rote learning.

10. Humans understand and remember best when facts and skills are embedded in natural, spatial memory.

11. Complex learning is enhanced by challenge and inhibited by threat.

12. Every brain is uniquely organized.

Brain-Based Instructional Techniques

Based on research and experience, Caine et al. (2005, p. 6) contend that effective teaching involves three fundamental elements. The previously mentioned principles suggest that there are three fundamental components or basic elements to effective teaching that greatly affect each other. These critical elements are relaxed alertness (the optimal

emotional climate for learning), orchestrated immersion in complex experience (the optimal opportunity for learning), and the active processing of experience (the optimal way to consolidate learning).

A. Relaxed Alertness

Providing relaxing teaching/learning atmosphere which creates ideal emotional and social environment for learning. Teaching environment, which is relaxed yet challenging with minimal threats, provides effective learning practices (Gulpinar, 2005, p. 302). Learners' interest in the material taught optimizes their learning, and relaxed brain triggers learning. Therefore, teachers should do their best to eliminate fear in learning environment (Gozuyesil and Dikicl, 2014; Thomas and Swamy, 2014).

B. Orchestrated Immersion in Complex Experience

The concept of immersion is multidimensional where information and skills are interlinked. It is based on the fact that meaningful learning involves multiple experiences that challenge learners and motivate them as well (Jack, 2010, p. 36). According to (Lucas, 2004), making learning contextual and related to student interests; structuring learning around real problems; and assisting learning with humor are also helpful in orchestrated immersion (p. 179).

C. Active Processing

Active Processing is "the art of digesting, thinking about, reflecting on, making sense of experience and of consolidating learning" (Caine et al., 2005, p. 179). According to (Jensen, 1998, p. 40-41), active processing embraces the concept that powerful learning and adaptive decision making require more action and effort by learners as experience needs to be processed. The teacher provides many opportunities to engage learners' interests and deepen their thinking. Jensen adds that active processing ranges from systematic practice and creative rehearsal (for memorization) to the deeply probing and ongoing questions that test the limits of a learner's capacities to call on executive functions and respond within a real-life context.

Assessment of Brain-Based Learning

One of the critical components of active processing phase is evaluation, (Caine & Caine, 1991, p. 141). According to Jensen (2000, p. 230), reliable evaluation in BBL consists of five components: the context, the physical environment, the process, the organization and emotions. These areas of evaluation involve mental, physical and emotional processes as well as past, present and future. Opposite to traditional evaluation procedures, such a kind of evaluation does not involve the evaluation activities that exist at the end of each unit or the subject. The evaluation in this procedure is ongoing and cumulative. The goal of the evaluation activities is to find out the interests and the weak and strong learning styles of the students. In order to achieve this goal in evaluation, the procedure should not be threatening, but should have motivating factors for learners (Deveci, 2014, p. 7).

In the brain-based classroom, providing effective feedback is a critical part of the assessment process. According to Jensen (2005, p. 55), the feedback should be corrective and positive enough to tell learners what the desired change is. Jensen assures that providing enough good-quality, accurate feedback could be an influential variable for improving learning. In addition, Erlauer (2003, p. 134) states that educators can make instant, interactive feedback part of the learning process so that students can avoid learning and practicing something that is incorrect. This also has implications in assigning homework. Erlauer argues that students should not be allowed to practice skills they have not been taught.

Learning Motivation

Motivation is a complex concept and researchers in the field of Second Language Acquisition (SLA) have been exploring it. "Motivation, like the concept of gravity, is easier to describe (in terms of its outward, observable effects) than it is to define" (Dornyei, 2011, p. 7). In addition, Dornyei states that motivation explains why people decide to do something, how hard they are going to pursue it and how long they are willing to sustain the activity. According to Ortega (2009, p. 168)

motivation refers to the desire to initiate L2 learning and the effort employed to sustain it. Carreira (2012, p. 191) defines motivation as the tendency to exert effort to achieve goals.

Ellis (2012, p. 75) illustrates that motivation is also believed to affect the pace of learning as well as the eventual achievement. In addition, motivated learners can be easily spotted inside a classroom or outside. They are keen to learn, eager to rehearse what they learn with their classmates or outside the classroom with other people. Their efforts to learn usually remain steady for an extended period. In other words, motivation is not just a desire to begin something, it also explains how much effort one is going to employ and for how long that effort will be sustained. Brumen (2011, p. 717) states that motivation was earlier thought to be unchanging and quantifiable, however, current research in the field has brought forth interesting aspects of motivation. This suggests that it is fluid and remains in a state of flow; it is subject to changing contexts, times and situations.

Motivation and EFL Learning

Motivating EFL learners has gained much more attention during the past decades. The importance of motivation has been considered by many educational psychologists as a critical factor which affects learners' success or failure in any educational process especially in learning a foreign language. This has urged many teachers, educators and researchers to investigate the role of motivation in learning-teaching process (Al-Ta'ani, 2018, p. 89). According to Dornyei (2011, p. 117), motivation has been widely accepted by both educators and researchers as one of the key factors that influences the rate and success of foreign language learning.

According to (Gardner and Lambert, 1972; Gardner, 1985, 2010; Dornyei, 2005; Bernaus and Gardner, 2008) motivation is a key predictor of success in learning a language. Learners' failure or success is explained by the degree of their motivation (Chalak and Kassaian, 2010, p. 27). According to Wink (2013) and Ellis, (2012) motivation has a substantial effect on foreign language acquisition. So, researching and

examining the role of motivation in learning English as a foreign language has received significant attention by linguists and educators.

In the Egyptian context, Boraie, Kassabgy and Schmidt (1996) investigated what spurs EFL adult learners in Egypt to exert the effort required and pay the fees to join private EFL courses in a country where access to public education is free at all levels? A questionnaire was developed, based on current work on motivation in second and foreign language contexts and more general models from cognitive and educational psychology, and was administered to a sample of 1,554 adult learners at the Center for Adult and Continuing Education (CACE) at the American University in Cairo, with 1,464 questionnaires used for the analyses. Factor analysis and multidimensional scaling were used to identify the components of EFL motivation for this population. The results suggested that there were three basic dimensions to motivation for learning foreign languages, which could be labelled as Affect, Goal Orientation and Expectancy. In general terms, these were probably universal and neurobiologically based, although the analysis suggested a specific Egyptian orientation with respect to the precise definition and content of each dimension.

Additionally, Ibrahim (2019) conducted a study on using task-based learning approach for developing EFL speaking skills and motivation towards it among primary stage pupils. The participants of the study were 60 primary five pupils (boys and girls) in a private school in Cairo Governorate, Victory College School. The participants were nominated randomly (two intact groups). The two classes represented the experimental group and the control group. Each group consisted of 30 pupils. Only the participants of the experimental group received instruction through the proposed strategy based on task-based learning approach for developing EFL speaking skills during the academic year 2018/2019 which was taught by the researcher, whereas the control group received regular instruction by the regular classroom teacher. The instruments were 7 speaking lesson plans based on task-based learning, pre-post speaking exam and motivation scale. The results indicated that

task-based leaning had positive effect on developing EFL speaking skills and motivation towards learning English among primary stage pupils.

Types of Learning Motivation

Several research studies (e.g., Anderman, 2010; Brophy, 2004; Cook, 2008; Deci and Ryan, 2000; Ellis, 2012;) have given due attention to studying the types of learning motivation. They have outlined learning motivation into four main types: intrinsic, extrinsic, instrumental and integrative.

Intrinsic and Extrinsic Motivation

Intrinsic motivation is related to an internal desire to do something. Deci and Ryan (2000, p. 233) define intrinsically motivated activities as the ones for which there is no apparent reward except the activity itself. According to Brophy (2004, p. 10) intrinsically motivated people are those who freely choose and want to do something. This means that the only incentive for undertaking this kind of actions comes from one's enjoyment and interest in a particular activity.

Self-determination theory by Deci and Ryan (2000, p. 227) focus on three innate psychological needs which need to be satisfied in order for an individual to feel intrinsically motivated. Those needs are: autonomy (in deciding what to do and how to do it), competence (abilities and skills by which people manage to control our environment) and relatedness (relationships people develop through interaction with others). This assumption has significant implications for students engaged in the learning process. Specifically, students are more likely to experience intrinsic motivation in an environment that promotes the satisfaction of these needs than in the one which neglects them (Brophy, 2004, p. 57).

On the other hand, those who are extrinsically motivated perform a certain action not because they truly enjoy it, but because of a reward that is available in their environment (Brumen, 2011, p. 36). Extrinsic goals can vary from short-term goals (good grades, prizes from the teacher and parents, participation in competitions, etc.) to long-term ones (possibility of winning scholarships, better job opportunities, higher social status, etc.). Certain studies carried out in the 1970s and 1980s showed that

rewards can lead to a decrease in intrinsic motivation among people who are already doing something because of their own reasons (Brophy, 2004, p. 99).

Instrumental and Integrative Motivation

According to Ellis (2012, p. 75) instrumental motivation is the effort made by learners to learn L2 for some functional reasons, such as passing an exam, getting a better job or getting a place at university. Gardner (1983, p. 2003) defines instrumental motivation as "Learning for perceived utility". Gardner explains that learners of such type learn another language with the purpose of some pragmatic gains, instead of social implication with the target language community. More specifically, learners are instrumentally motivated when they have the desire to learn a language to pass an exam, to use it when visiting a foreign country and to get a well-paid job (Cook, 2008, p. 138). Hong (2017, p. 21) considers instrumental motivation as a means to get social and economic rewards through second language learning.

On the other hand, Cook (2008, p. 137) states that integrative motivation is the desire to learn second language/foreign language to communicate with the people of the second language society and mix up in their culture. Gardner and Masgoret, (2003) maintain that integrative motivation refers to "an openness to identify at least in part with another language community" (p. 126). According to Ellis (2012, p. 75) integrative motivation refers to learning a particular language because learners are interested in the people and culture represented by the target language. For instance, it is due to integrative motivation, many English speaking Canadians have tendency to learn French.

Brain-Based Learning and Motivation

There is a strong correlation between motivation and BBL. According to Ozden and Gultekin (2008, p. 6), information entering the brain is divided into several parallel paths, each of which gives little difference of treatment based on the pathway taken and the information that has particular interest to a part of the brain as it activates that side more strongly than the rest. Degan (2011, p. 75) maintains that extrinsic

motivation is often an attempt by someone to motivate a student to do a specific job. In terms of learning and creativity, it is clear that there is a correlation between creativity and intrinsic motivation. Moreover, when students organize information in their minds, the way in which the patterns are shaped is so profoundly induced internally that they want to do something.

Jensen (2008, p. 113) argues that most students have intrinsic motivation, and that the ability to activate student motivation depends on the learners themselves and on the level of the teacher's own skills. In addition, there are many factors that contribute to increasing the level of motivation, only some can be controlled, with the teacher's skills in coordinating an appropriate environment with less threat and great challenge. The emotions caused by stress or threat may drive or hinder student movement. Jensen (2005, p. 79) proposed six strategies to activate students' motivation: remove threat, set daily goals that facilitate some student choices, guide students' emotions through the productive use of plays, kinesthetic activities, etc., train them to direct their emotions, provide an appropriate curriculum, interrelated activities and feedback. Therefore, the lack of motivation is considered an unrealistic feature, where the problem lies in learning conditions and not in the learner, so the task of the teacher is to evoke the natural motivation of students.

Related Studies

Akyurek and Afacan, (2013) studeied the effect of BBL approach on attitudes and motivation levels in 8th grade students' science classes. The pre/post-test control group research model was used in this study. The research was conducted with one experimental group and two control groups in 2011-2012 academic years. Totally 57 students, 19 in experimental group, 19 in each control groups participated in this research. The result of the study revealed that BBL approach had a significant difference between the experimental and the control groups in favor of the experimental group.

Uzezi and Jonah (2017) investigated the effect of Brain-Based Learning strategy on students' academic achievement, attitude,

motivation and knowledge retention in Electrochemistry. The study used a pretest-posttest quasi-experimental design. A total of 87 Senior Secondary Two students from two intact classes from North-Eastern part of Nigeria. One of the classes served as the experimental group that used Brain-Based Learning while the other was the control group that used Lecture-Based Teaching approach. Data were collected through achievement test, attitude and motivation scales. The data collected were analyzed with means, independent t-test, and Analysis of Covariate which were used to compare the groups' scores. The findings indicated that the Brain-Based Learning approach used in the experimental group was more effective in increasing achievement, attitude and motivation of students towards chemistry than the Lecture-Based Teaching approach used in the control group. It was identified that the difference between retention test scores were also statistically significant in favor of experimental group.

Oghyanous, (2017) investigated the effect of brain-based teaching on young EFL learners' motivation. The initial participants of the study were 90 learners within the age range of 13-16 who were selected based on convenience sampling. Theses 90 young EFL learners were given a Flyers test the scores of which were used to choose 60 homogeneous learners whose scores fell within the range of +/-one standard deviation from the mean. The 60 selected learners were then divided into an experimental and a control group. A motivation questionnaire for children developed by Muris (2001) was administered to the participants in both groups before and after the treatment after being translated into Persian and piloted for reliability check. To implement brain-based teaching in the experimental group, the researcher taught the lessons based on the three techniques of Brain Based Teaching Approach (BBTA). The three techniques used were Relaxed Alertness (RA), Orchestrated Immersion (OI) and Active Processing (AP) in line with Thomas and Swamy (2014). The results of statistical analyses indicated that brain-based teaching approach had a significant effect on students' intrinsic motivation to learn English.

Safein (2017) conducted a study on implementing the brain-based learning approach to improve listening skills of business students,

vocabulary retention, motivation and establish positive attitudes with regards to their brain dominance and learning styles. To achieve these aims, listening skills test, vocabulary retention test, adapted form of Robert Gardner Motivation Scale, were developed and used. The sample of the study consists of thirty-six students from College of Business Administration at Sadat Academy in Egypt. The findings indicated that BBL is an effective approach for developing listening skills, consolidating vocabulary recalling and retention. It also helps maximize motivation towards learning language skills.

As a teacher, the researcher thinks that to reach accelerated language learning, it is imperative that teachers try to find ways to tap into what motivates learners and help them to stay motivated. It is observed in real classrooms that learners who are just beginning would be highly motivated and very keen to learn English on their first few classes or lessons. However, after some time and usually once they attain good level of communication in English, their level of motivation would decrease, their rate of language acquisition would decline and slow down, and sometimes their behavior and attitude towards the class or language may change as well. Meanwhile, some learners remain highly motivated to learn English and continue to do well. It is quite difficult to encounter such a situation.

The researcher reckons that every teacher knows that motivation is an essential key in language learning but the question is how many teachers actually take the time to deeply think about it and ask deeper questions about what motivates learners. Dornyei (2011, p. 166) assures that teachers are one of the most determinant factors of L2 learners' motivation. L2 teachers play the most influential roles to help their learners engage and persist in the long process of language learning. Teachers can play the role of initiator, facilitator, motivator, ideal model of the target language speaker, mentor, consultant and mental supporter. These roles are assumed to influence each learner's motivation.

Design of the study

This study adopted the quasi-experimental design. It used the one group pre-posttest test experimental design in which only one group of participants was used in the implementation process.

Participants of the study

A group of 30 first year preparatory stage pupils was randomly selected from Dr. Mostafa Musharrafa Preparatory School in the first semester of the academic year 2020 /2021. All participants were girls as the preparatory stage at this school was devoted for girls only. There were three classes at the first-year prep stage; however, the researcher selected class 1B because the class teacher was experienced and qualified enough to teach program. She had a degree in TEFL, 20 years of experience and above all, she was enthusiastic to teach the program.

Instruments of the study

The Motivation Scale

Aim of the Motivation Scale:

The motivation scale used in the present study aimed at measuring first year preparatory stage pupils' motivation towards learning English before and after the implementation of the BBL program.

Design of the Motivation Scale

Having reviewed a number of studies on Motivation in general and motivation towards learning English in particular (e.g., Gardner, 2004; Ibrahim, 2019; Onada, 2012; Peng, 2002; Safein, 2017; Uzezi and Jonah, 2017), the researcher designed the motivation scale taking into consideration the following points:

- Using clear items
- Using simple and direct items
- Focusing on learning English

Validity of the Motivation Scale:

To ensure the validity of the motivation scale, it was submitted to eight EFL specialists in the field of curriculum and EFL instruction to decide the following:

- Relevance of the motivation scale items to the objectives of the research.
- Clarity and linguistic correctness of the motivation scale items.
- Suitability of the motivation scale items to the level of pupils.

The jury members suggested the following:

- Putting the items in a 3-point scale instead of 5-point scale to be easier for the pupils.
- Deleting some repeated and irrelevant items and editing the wording of others.
- Translating the items into Arabic so that pupils can understand them.

Description of the Final Form of the Motivation Scale

The motivation scale was modified according to the jury members' comments and suggestions. The final form of the motivation scale contained 14 items. Pupils were asked to respond to each item in terms of 3= completely agree 2= agree to some extent 3= disagree.

Reliability of the Motivation Scale

To establish the reliability of the motivation scale, it was administered to a sample of 20 pupils other than the sample of the research. Then, the same scale was administered to the same group after two weeks under relatively the same conditions in terms of time and place. Pearson correlation coefficient between the two administrations was (0.95). Thus, it indicated that the motivation scale was reliable.

Time of the Motivation Scale

While piloting the motivation scale, the time needed to complete it was specified. The average time needed for completing the motivation scale was fifteen minutes. This time was estimated in the following way:

$$\frac{\text{Total time taken by all pupils}}{\text{Number of pupils}}$$

So, the time of the motivation scale =300/20 = 15 minutes

Administration of the Motivation Scale

After ensuring the reliability and specifying the time of the motivation scale, it was administered to the participants. It was administered two days prior to the experiment. The post motivation scale was administered three days after the experiment. Post motivation scale conditions were relatively the same as those of the pre-motivation scale in terms of place and time.

Calculation of Pupils responses on the Motivation Scale

As for pupils' responses on the scale, they were calculated as follows:

For the Positive Items:		
Completely agree	**Agree to some extent**	**Disagree**
3	**2**	**1**
For the Negative Items:		
1	**2**	**3**

The overall responses were calculated through summing pupils' scores on all positive and negative items.

Teacher's Guide

A teacher's guide was developed to aid English language teachers during the teaching process. It included an introduction to the program which included a definition of BBL, the principles it is based upon and the general aims of the BBL program.

Aim of the Program

The main aim of the proposed program was to enhance preparatory school pupils' motivation to learn EFL through brain-based learning.

Learning Objectives of the Program

By the end of the program, pupils were expected to Have a high level of motivation towards learning EFL.

Content of the BBL Program

The BBL program was designed to enhance first-year preparatory stage pupils' motivation towards learning English through the use of BBL. It was made up of ten lesson plans to be taught in twenty sessions. The lesson plans were based on the BBL principles, strategies and lesson stages.

Activities and Tasks of the Program

The activities used in the program were adopted from the following resources:

- The first year preparatory stage English student book, workbook and teacher's guide.
- Online educational websites.
- Evaluation Techniques

The evaluation system in the proposed BBL program was based on the following:

Initial Evaluation:

The initial evaluation was conducted to determine the pupils' level of motivation before implementing the program.

Formative Evaluation:

Formative evaluation was done for the purpose of measuring gradual progress in pupils' level of motivation. In addition, it helped in providing necessary feedback on their overall performance. The formative evaluation was accomplished in the following processes:

A. Teacher's reflection: a teacher's reflection report was written after each session to record pupils' performance and progress during the program.

B. Monitoring pair and group work: the teacher quickly assessed and highlighted each group member's actions and contributions by observing group and pair activities.

C. Projects: pupils were asked to work on projects to present the information they learned to the class.

Summative Evaluation:

The summative evaluation was conducted through the post-administration of the motivation scale at the end of the experiment. The main purpose of the summative evaluation was to investigate the effect of BBL program on enhancing first year preparatory school pupils' motivation to learn EFL.

Statistical Analysis

Verifying the Hypothesis of the Research

The research hypothesis states that there is a statistically significant difference between the mean scores of the participants on the pre- and post-administrations of the motivation scale in favor of the post-administration.

For testing this hypothesis, the dependent paired samples t-test was used to compare the mean scores of the participants on the pre- and post-administrations of the motivation scale. Table 1.1 presents the mean scores, standard deviation and level of significance on the pre- and post-administrations of the scale.

Table 1.1

T-test results comparing the mean scores of the participants on the pre- and post-administrations of the motivation scale (N =30, df=29)

Assessment	Std. Deviation	Mean	t-value	Sig.	Effect Size
Pre	.86037	14.533	37.355	Sig. at 0.01	0.97
Post	3.29681	35.400			Large

Table 4.9 indicates that there is a statistically significant difference between mean scores of the participants in the pre- and post-administrations of the motivation scale in favor of the post administration. Therefore, the hypothesis is accepted. Since the participants share all the

same variables saved by the designed BBL program, the significant development in their learning motivation can be attributed to the effect of the BBL program.

To assure that this significance is attributed to the effectiveness of the designed program, the effect size was calculated by Eta Square. The effect size represents evidence that the results are really significant according to Mansour (1997). The value of the amount of effectiveness was found to be (0.964), a high value showing the effectiveness of the program in developing EFL speaking skills.

To assure that this significance is attributed to the effectiveness of the BBL program, the effect size was calculated by Eta Square. The value of the amount of effectiveness was found to be 0.973, a high value showing the effectiveness of the program in developing learning motivation.

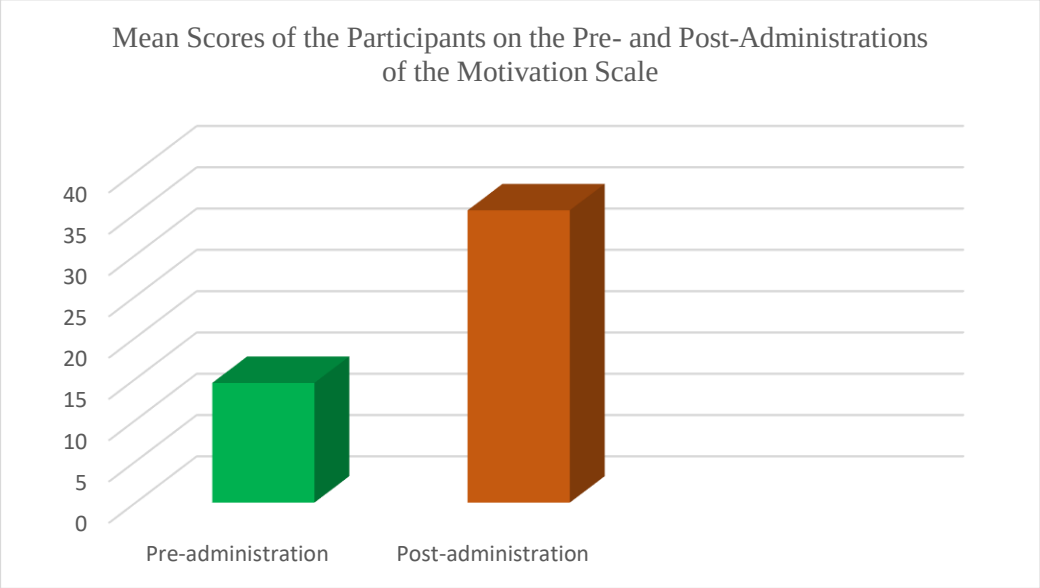

Figure 4.9. *The difference between the mean score of the participants on the pre- and post-administrations of the motivation scale.*

In addition to the above-mentioned results, it was also observed that although the BBL program had a large effect size on developing the participants learning motivation, the degree of this effect size varied from

one type of motivation to another. This variation can be illustrated in the following table.

Table 1.2

T-test results comparing the mean scores of the participants on items related to different types of motivation (N =30, df=29)

Item	Type of Motivation	Ass.	Mean	Std. Deviation	t-value	Sig.	Effect Size
I enjoy learning English at school.	Intrinsic	Pre	1.333	.3457	24.233	Sig.at 0.01	0.95
		Post	2.933	.2537			Large
I watch and listen to English outside the classroom.	Intrinsic	Pre	1.100	.3446	22.494	Sig.at 0.01	0.94
		Post	2.766	.2478			Large
I feel confident when asked to speak in my English class.	Intrinsic	Pre	1.333	.3457	17.588	Sig.at 0.01	0.92
		Post	2.954	.4497			Large
I try to speak English outside the class.	Intrinsic	Pre	1.244	.3455	26.492	Sig.at 0.01	0.96
		Post	2.966	.1825			Large
I like to study English because it helps me use the computer and internet.	Instrumental	Pre	1.066	.2537	13.573	Sig.at 0.01	0.87
		Post	2.266	.4497			Large
I read English stories and magazines	Instrumental	Pre	1.066	.2537	12.535	Sig.at 0.01	0.84
		Post	2.166	.3790			Large

to improve my grades in English.							
Learning English will help join the college I want in the future.	**Instrumental**	**Pre**	**1.100**	**.3457**	**13.403**	**Sig.at 0.01**	**0.86**
		Post	**2.333**	**.2537**			**Large**
I like to study English because it is it is an international language.	**Integrative**	**Pre**	**1.076**	**.2537**	**13.857**	**Sig.at 0.01**	**0.87**
		Post	**2.443**	**.4301**			**Large**
Studying English at school will help me make more English-speaking friends.	**Integrative**	**Pre**	**1.100**	**.30513**	**15.746**	**Sig.at 0.01**	**0.89**
		Post	**2.200**	**.40684**			**Large**
Learning English helps me better understand English speaking people.	**Integrative**	**Pre**	**1.333**	**.3457**	**12.794**	**Sig.at 0.01**	**0.84**
		Post	**2.100**	**.30513**			**Large**

Tables 4.10 indicates that the BBL program had a huge effect size on items related to developing the participants' intrinsic motivation i.e., (0.95, 0.94 & 0.92), whereas it had large effect size on items pertaining to developing their instrumental i.e., (87, 84 & 86) and their integrative motivation i.e., (87, 89 & 84).

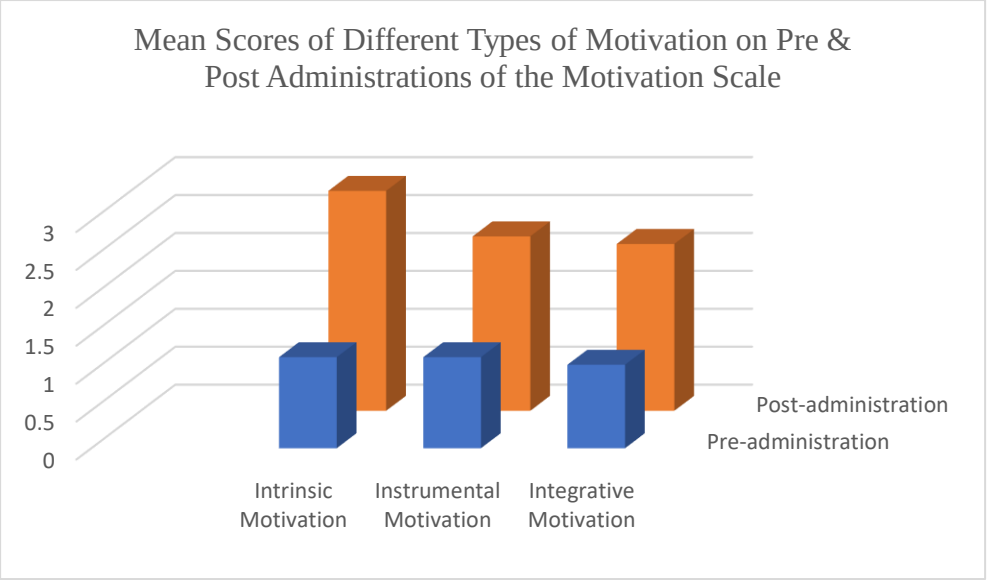

Figure 4.10 *The difference between the mean scores of participants on items related to different types of motivation.*

Discussion of Results

The statistical analysis illustrated above indicated the achievement of the research's main aim, which was developing first year preparatory school pupils' learning motivation. The results presented above indicated that pupils' motivation towards learning English developed considerably after the implementation of the research program which emphasizes the significant effect of the program.

This significant development could be attributed to the following factors:

- Lesson plans were designed according to BBL strategies and principles to develop the pupils' motivation towards learning English.
- Various learning resources were used (visual aids, clips, charts, mind-maps, puzzles, crosswords, games, power point presentation, music etc.) keeping in mind the principles of BBL.
- Pupils were involved in preparing the teaching aids with the teacher; they showed great interest and creativity.

- Most of the activities and projects were student driven where the teacher acted only as coach.
- Due attention was given to motivation and participation in the BBL class.
- The teaching process in the classroom was engaging, relevant and appealing to various learning styles.
- Making sure that pupils work together by forming small groups; making pupils discuss with the class what they learned together and having them look for solutions by providing them with problem situations.
- Attention was given to the pupils' feelings during the BBL classes which made them feel they are important.

The program provided a rich environment which is meaningful and challenging for all types of learners (Light music, seating arrangement, practical experiences, meaningful curriculum through problems, projects, simulations, choices, bulletin board and white board, natural flowers and plants). All that helped pupils collaborate, discuss, reflect, present, plan topics, share ideas and feelings.

Pupils' interaction through working in small groups provided a less anxiety-producing context in terms of thinking, discussing and creating in a group rather than as a whole class. This relaxed non-stressful atmosphere helped pupils to have more fun, be more motivated and interested in doing their tasks and to gain more confidence.

During the implementation of the program, pupils were encouraged to work in groups and discuss the topics jointly, a fact that might have affected developing their learning motivation. This could be attributed to the motivating environment of the BBL program in which learners were given ample opportunities to express their thoughts, opinions and reactions freely without embarrassment, fears or anxiety.

Finally, the results of the preset study are consistent with the results of some previous research such as (Ali, 2017; Carreira, 2012; Ibrahim, 2019; Kim, 2011; Kitjaroonchai and Kitjaroonchai, 2012; Jutarat, 2016; Morib and Gobe, 2006; Wang, 2008; Wimolmas, 2012; Muftah and Shameem, 2013; Mohammed, 2015) which confirmed that motivation

plays a very vital role in developing EFL skills. Moreover, the results of the preset study support previous studies which assured the positive impact of BBL on developing motivation to learn English such as (Bas, 2010; Brumen, 2011; Oghyanous, 2017; Safein, 2017). Furthermore, the findings of the preset study indicate that BBL has a huge effect size on developing the participants' intrinsic motivation. These results are in line with the findings of previous studies such as (Degan, 2011; Brumen, 2011; Oghyanous, 2017) which assured that BBL had a positive impact on developing learners' intrinsic motivation.

Conclusion

The preset study found that the effect of the intervention on pupils' learning motivation was statistically significant. The significant differences are due to exposing participants to the BBL program. The significant difference was at 0.01 between the mean scores of the participants in the pre- and post-administration of the motivation scale. These results indicated that the participants' motivation towards learning English was significantly increased at the 0.01 level after studying the BBL program.

Such development in pupils' learning motivation can be attributed to training through the BBL program and applying some effective BBL strategies during the seven stages of BBL lessons. BBL reinforces learning by enabling pupils' cognitive features, as well as enriching their positive feelings, interests, and reducing fear, stress and anxiety. Consequently, pupils feel more relaxed, passionate and openly engage in the programs' tasks and activities.

Furthermore, incorporating activities such as role-play and real-life situations helped learners to become more motivated and more effective in BBL classes. In addition, utilizing some authentic materials such as realia and videos aided in preparing pupils for the real world of communication. That is, they practiced English in a relatively authentic context. When pupils were provided with intriguing and varied resources of language input e.g., videos, games, chants etc., they were motivated to

manipulate language skills to communicate and interact confidently and enthusiastically which had significant effect on their learning motivation.

Recommendations

Based on the findings of the preset study, the following recommendations are presented:

- BBL approach should be incorporated in teaching English in different educational stages in order to develop pupils' motivation towards learning English.
- Developing learners' motivation should be given more attention in Egyptian EFL classes.
- Curriculum designers are recommended to enrich English textbooks with BBL strategies and techniques which reinforce learning motivation.
- Pre-service and in-service teacher training programs should focus on the importance of BBL in developing learners' motivation and provide teachers with guidance on how incorporate its strategies and techniques in their daily lessons.
- Due attention should be given to reinforcing learners' motivation in order to be developed at pre-college levels especially at primary and preparatory stages. Therefore, educators should take into account manipulating various strategies when teaching English to achieve this purpose.
- Teachers should take part in designing some of the content of the course books they teach based on strategies and principles of BBL. Thus, they can vary their teaching strategies and techniques, and consequently, learners will be more engaged and motivated to learn English.

Suggestions for Further Research:

The preset study presented the following suggestions for further research:

1. Further research is needed to investigate the effect of BBL on developing learners' motivation towards developing each language skill i.e., listening, speaking, reading and writing.

2. Further research is needed to investigate the effect of BBL on developing motivation towards learning English in the primary and secondary stages.

3. Further research is needed to investigate the effect of BBL on learning motivation for learning other school subjects.

4. Further research is needed to investigate the effect of other teaching approaches on developing pupils' motivation towards learning English.

5. Further research is needed to investigate effect BBL on learners' attitudes towards learning English as a foreign language.

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