



**The Effectiveness of Using Brain-Based Learning Strategies in  
Developing EFL Writing Organization Sub-Skills for prep**

**عنوان البحث : 3 Pupils**

**Atef Abdelhameed Hamed Youssef**

**الباحث :**



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of Education Curriculum & Instruction Dept.*

**The Effectiveness of Using Brain-Based Learning Strategies in Developing EFL Writing  
Organization Sub-Skills for prep 3 Pupils .**

**A Research Submitted in Partial Fulfillment of the Requirements for the M.A Degree in  
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**ABSTRACT**

**The Effectiveness of Using Brain-Based Learning Strategies in Developing EFL Writing Organization Sub-Skills for prep 3 Pupils .**

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The current study aimed to investigate the effectiveness of using some strategies of brain-based learning in developing EFL writing organization sub-skills for Grade 3 pupils. The participants of the study were 64 students, divided into two groups: an experimental group (n=32) and a control group (n=32). The experimental group was taught using brain-based learning, while the control group received regular instruction. This study adopted a quasi-experimental design. The study instrument was an EFL writing organization sub-skills test for Grade 3 pupils, administered to the study participants before and after the treatment. The treatment was implemented during the first semester of the academic year 2023-2024. The data obtained were statistically analyzed. The results revealed that using strategies of brain-based learning was effective in developing EFL writing skills among third-year preparatory school students. Thus, it is recommended that teachers and curriculum designers pay attention to brain-based learning and its effective role in developing EFL writing organization sub-skills for prep 3 pupils.

**Keywords:** *Brain-based Learning*, EFL writing Organization Sub-skills



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### المستخلص العربي

عنوان البحث : أثر استخدام استراتيجيات التعلم المستند الى الدماغ على تنمية مهارات تنظيم الكتابة لتنظيم الكتابة لدى طلاب الصف الثالث الإعدادي

هدفت الدراسة الحالية إلى التعرف على أثر استخدام استراتيجيات التعلم المستند الى الدماغ على تنمية المهارات الفرعية لتنظيم الكتابة في اللغة الانجليزية لدى طلاب الصف الثالث الإعدادي بمدرسة الحسين الخاصة بإدارة المرج التعليمية محافظة القاهرة . بلغ عدد الطلاب المشاركين في الدراسة ٦٤ طالب تم تقسيمهم إلى مجموعتين مجموعة تجريبية عدد ( ٣٢ ) ومجموعة ضابطة عدد ( ٣٢ ) كانت أدوات ومواد الدراسة تشمل قائمة لبعض مهارات الكتابة في اللغة الإنجليزية كلغة أجنبية واختبار لبعض مهارات الكتابة كلغة أجنبية بالإضافة إلى دليل المعلم . تم التدريس للطلاب في المجموعة التجريبية بالاستخدام التعلم المستند إلى الدماغ في حين تلقى الطلاب في المجموعة الضابطة تدريساً باستخدام الطرق المعتادة وتم تنفيذ التجربة خلال الفصل الدراسي الأول من العام الدراسي ٢٠٢٣ - ٢٠٢٤ . تم تحليل البيانات إحصائياً وظهرت النتائج أن استخدام التعلم المستند إلى الدماغ كان فعالاً في تطوير بعض مهارات الكتابة باللغة الإنجليزية كلغة أجنبية لدى طلاب الصف الثالث الإعدادي في مدرسة الحسين الخاصة بإدارة المرج التعليمية , محافظة القاهرة .

الكلمات المفتاحية : التعلم المستند إلى الدماغ - مهارات تنظيم الكتابة .



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### 1.1. Introduction

English is an essential language. It is the world's most spoken language and plays a vital role in our daily lives. Learning English is a great way to gain a better cultural comprehension. Nowadays, English is being taught as a second language all around the world. Therefore, students need to be able to read in English in order to comprehend what is written. Learning English is essential for students. It broadens their knowledge, enhances their emotional skills, and enhances their overall well-being. Furthermore, the usage of English as a global language has grown over time because English is a powerful tool of communication in most countries. There are four important skills that students can use in their daily lives. These skills are classified into two types. Oral (listening, speaking) and written (reading, writing).

Writing is one of the most complex skills to learn and teach. Due to the complexity of writing itself, students often face difficulties in learning this skill. These complexities make the teacher's role more challenging and create difficulties in teaching writing. Furthermore, writing is considered one of the most essential skills in the English language. It allows students to express and explore ideas, thoughts, and views, making them visible. Writing encourages students to think, learn, and share. Unfortunately, most students find writing tasks difficult and need effective methods to make these tasks easier. Writing is one of the four important language learning skills - Listening, Speaking, Reading, and Writing (Agustina & Nur, 2018).

Additionally, writing is an important aspect of communication. It enables learners to connect with others and deliver their intended messages properly (Mekhane & Khelef, 2016). Writing skills are the core of communication. This is evident when we write to share our thoughts and let others understand what is on our minds. Good writing skills allow students to express their feelings clearly and require less time for the reader to understand their messages. Students can also share thoughts and information through writing, which helps them express how they feel and think. Writing skills can boost students' chances of success (Kabigting et al., 2020).



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Writing, as one of the English productive skills, is very crucial in communication. This language skill becomes an important skill for providing personal links without having to meet each other (Graham et al., 2013). It is also one of the essential language skills since it is tested in the most standardized assessment, particularly to measure the academic success of the students' knowledge and writing proficiency (Harmer, 2004; Tan, 2011). Besides, the students' writing is a reflection of the power of their language (Triana et al., 2020). Therefore, writing as a productive skill plays a crucial role in language learning.

To improve writing skills, students should follow a process that includes generating ideas, organizing them, and getting them on paper. Writing is a crucial element in language learning, highlighting its importance for education and language development. Any language program must consider the multidimensional nature of writing (Umaemah, 2016). EFL teachers should strive to find effective strategies and mechanisms to improve EFL writing skills. Promoting writing skills is essential for EFL teachers to support their students' success .

Brain-based learning is considered one of the most effective strategies for making connections between the human brain and the teaching process. Brain-based learning represents the human brain, its parts, and functions. It explains how the brain learns and incorporates the principles of brain-based learning strategies to improve writing skills (Mayer, 2017).

There is a basic and fundamental relation between BBL and intelligence as every student has one, two or three kinds of intelligence which is related to his/her learning process. One of the core brain-based principles is to differentiate the rule, not the exception at school. In order to be able to provide differentiated instruction according to BBL's principles, multiple intelligences should be clearly determined (Jensen, 2016; Kagan, 2014; Lojova, 2008; Mayer, 2017). Simply, BBL can be determined as an approach in education based on the question that is trying to answer what is good for the brain, and it is defined as it is aligned with how brains naturally learn, it is learning with the brain in mind. Brain-Based Learning is the use of research in neuroscience on how the brain works



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to gain an understanding of how students learn and develop in a classroom. New technologies have allowed scientists to observe the brain functions. And have provided new knowledge about the different ways in which the human brain naturally learns best.

Brain-Based Learning focuses on meaningful learning rather than the traditional methods which concentrate on memorization (Tufekci and Demirel 2009). Jensen (2016) asserted that BBL helps the students have the ability to learn easily in sequenced ways as BBL includes several strategies and principles that are crucial for enhancing students' engagement and academic achievement.

### Context of the problem

As a teacher of English for ten years, it was observed that there was deficiency in EFL Organization Sub-skills for prep 3 Pupils. In addition to reviewing previous studies related to EFL writing skills confirmed that there are problems in EFL writing Organization Sub-skills. Examples of these studies are the studies of El Nagger (2016); Fareed (2016); Sayed and Hassanein (2016); Ali, Sharaf and Abdeldayem (2017); Hammad (2020) and Mostafa (2020).

To document the study problem, a pilot study was conducted to find out the difficulties which preparatory school students face in EFL writing Organization Sub-skills for prep 3 Pupils. It consisted of an English writing test (Appendix A). The researcher administered the test to a group of third year, preparatory school pupils to measure some of their writing skills' level at preparatory School in El Marg Educational Directorate, Cairo Governorate.

The results of the pilot study were consistent with the aforementioned previous literature. The results of the pilot study provided additional evidence that the students have a problem with their writing skills. The students aren't able to write an organized paragraph. They do not have the ability to follow logic order related to any topic. Their final writings are very weak especially the students of prep 3 who must master these skills.

This could be due to a lack of opportunities to learn those skills in the classroom. Additionally, The results revealed that more than 70% of 3<sup>rd</sup> preparatory pupils have a relatively low level of writing skills. This could be due to a lack of effective ways to learn those skills in the classroom .



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### 1.2. Statement of the problem

The weaknesses of prep 3 pupils in EFL writing organization sub-skills That is why the current study attempted to investigate the effects of brain-based learning (BBL) and redundancy on improving preparatory school pupils ' EFL writing Organization Sub-skills.

### 1.3. Questions

The present study was an attempt to answer the following questions:-

1. What are the EFL writing Organization Sub-skills required for preparatory school pupils?
2. To what extent do third year preparatory school pupils master these skills ?
3. What is the effectiveness of using brain-based learning strategy (BBL) on developing EFL writing Organization Sub-skills for preparatory 3 Pupils?

### 1.4. Significance of the Study

The current study could be useful for the students, teachers, curriculum designers and researchers as follows:

#### 1.5 For EFL Students

The study could enhance students' EFL writing Organization Sub-skills and Interaction by using effective learning strategies which depend on brain-based learning (BBL) which motivates the students and has great results .

##### 1.5.1. For EFL Teachers

It provides them with new effective strategies in teaching writing skills, namely brain-based learning (BBL) that enable them to improve and enhance their students' EFL writing Organization Sub-skills.

##### 1.5.2 For Researchers



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The results of this study can be used as a starting point for the researchers to gain insight and make use of brain-based learning strategy (BBL) in their future research to develop students' EFL writing Organization Sub-skills.

### 1.6. Participants of the study

A group of sixty four third year preparatory school pupils randomly selected from Al-Marj Educational Administration - Al-Husseini Private School, in the academic year 2023-2024. They were divided into two groups: an experimental group (N=32) and a control one (N= 32). The experimental group pupils were taught using brain-based learning strategy (BBL), while the control group pupils received regular instruction.

### 1.7. Delimitations of the study

The present study was delimited to:-

- Sixty-four third year preparatory school pupils in Al-hussien school in El Marg Educational Directorate, Cairo Governorate.
- Some EFL writing Organization Sub-skills like setting the beginning , middle , and the end of the paragraph definitely. Also setting the topic sentence and conclusion clearly.
- The first semester of the academic year (2023-2024).

### 1.8. Instruments and materials

In order to fulfill the aim of the present study, the researcher prepared and used the following instruments:

- 1- An EFL writing Organization Sub-skills checklist.
- 2- An EFL writing Organization Sub-skills test.
- 3- A teacher's guide.

### 1.9. Definitions of Terms

#### 1.10.1. EFL writing Organization skills

Zaker (2015:16) defined EFL writing skills as the pupils' ability to express thoughts and ideas in writing. Writing skills began when students are young but continue to develop until adolescence.





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Zarei et al. (2017:20) also defined writing skills as an interactive process between writer, reader, and text to convey a certain message. Writing increase language acquisition, with students' experiment of sentences and words to interact or share their ideas effectively and to reinforce the vocabulary and grammar they are learning in class.

In the current study, EFL writing organization skills are operationally defined as the ability of preparatory stage learners to effectively communicate their ideas, thoughts, opinions, and feelings through written expression. This includes the capability to structure and present these elements in a cohesive, logical, and well-organized manner within their compositions. These skills encompass the student's capacity to create a unified narrative or argument that flows logically and is easy for the reader to follow and understand.

### 1.10.2. Brain-Based Learning Strategy (BBL):

Tafi and Kadkhodaie (2016:11) defined Brain-Based Learning (BBL) as a teacher facilitated and learner centered strategy that utilized learners' cognitive endowments and can effectively reach all pupils' individual needs.

Additionally, Jensen (2016:15) defined BBL as the ability to learn easily in sequenced ways as BBL includes several strategies and principles that are crucial for enhancing students' engagement and academic achievement.

Achor & Gbadamosi (2021:12) also defined Brain-Based Learning Strategy as the ability of creating meaningful learning and lasting experience in the mind of pupils. In addition to that, it helps pupils to practice which makes information constant. Moreover, Brain-Based Learning shed lights on employing stories that engage many areas of the brain.

In the current study, Brain-Based Learning (BBL) strategy is operationally defined as a teaching approach that leverages principles of neuroscience to enhance the learning process. This strategy includes activities and techniques designed to engage and stimulate various parts of the brain, thereby aiding pupils in overcoming learning difficulties. Specifically, for developing EFL writing skills among preparatory school pupils, BBL involves methods such as interactive writing exercises, sensory-based learning activities, and cognitive skill-building tasks. These methods are



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intended to help pupils organize their thoughts, express their ideas coherently, and produce well-structured written compositions.

### Review of Literature

#### 2.1.1. Nature of EFL Writing Skills

Writing is one of the most important skills in English. Students can use their writing skills to express and investigate ideas, thoughts, and views, as well as make them visible and noticeable. Writers are encouraged to think, learn, and share as a result of their work. Unfortunately, the majority of the students found writing tasks difficult for them to deal with. They require some ways to make the work of writing easier for them and it is one of the four skills of English language (listening, speaking, reading and writing) (Agustina & Nur,2018).

Writing is a very essential skill in the classroom teaching process, in addition to its communicative role and it is a major language skill that, in order to improve requires the most help from teachers (Vakili & Ebadi, 2019). Razali (2017) also emphasized writing as an integrative skill, a major, productive, and complex learning process. Thus, writing can be defined as an effective learning process, starting from generating ideas and collecting necessary information until the final text is published. Hyland (2018) mentioned that writing is a way of communicating, confronting, and thinking because the author's thoughts and writing are combined when the author begins to write. In terms of writing attitude, it is related to the students' feelings and beliefs, including their writing abilities and written language tasks.

According to Yildirim (2014), the learners of English writing skill may not generate complex sentences and higher in quality. Many of them still produce less lexically complex sentences and more error filled. This is caused by having less varied in vocabulary of some learners than their more skilled peers (Irmanda et al., 2021). In addition, it was found in the research that most learners of writing do not quite the organization of thoughts, mastery of needed vocabulary is still less, and they still lack of idea in construction as well as the grammar use (Akbar & Picard, 2019; Patak et al., 2021; Pongsapan & Patak, 2021).



## 2.1.2. Major Problems in EFL writing skills in general and Organization Sub-skills in particular

Most of EFL students make mistakes and face difficulties in various stages of their writing process.

### 2.1.2.1. Grammar

According to Eckelberry (2016), grammar is the rules of writing and speaking and comprehending at least its basics which is essential for every learner. As stated by Duigu (2002), Grammar is the infrastructure of the writing, and if that is weak, then a clever superstructure of ideas will simply make the whole essay collapse and in order to write comprehensively, learner should have at least four essentials such as the tenses, the correct use of parts of speech, the use of the passive and correct clause structure.

### 2.1.2.2. Vocabulary

The lack of vocabulary is a major cause of bad writing style that learners may face in their writing. Duigu (2002) suggests that most students have perfect ideas, but do not have enough vocabulary in English to express them. In some cases, some students also use incomprehensible, incorrect vocabulary, but more commonly students in this situation are likely to write in a much easier style for academic purposes.

### 2.1.2.3. Spelling

Spelling is considered one of the main difficulties that learners may face in their writing assignments. This complexity is due to the lack of spelling-sound correspondence which means that there is more than one way to spell a sound. This problem is called homophones (words that sound the same but spelt differently) such as: threw and through, they are immediately differentiated in writing. Pairs of words that sound identically like: sun and son, sew and so (Harmer, 2004).

### 2.1.2.4. Punctuation

Using the right punctuation marks is an important skill for every writer. It helps them to understand what they write in English. In addition to that, the reader will track what the writers want to say Eckelberry (2016). In other words, excessive and unnecessary use of punctuation marks in a sentence makes it very hard to read. A variety of languages use these signals in different



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ways and for different objectives, not only that the way punctuation marks are used might be different between the varieties of the same language (Barkho, 2016).

**A. Apostrophes:** serve two functions showing ownership, for examples, john's dog forming contractions, for example, I'd (would) have gone.

**B. Comma:** serves as a great clarifier. It separates elements in a sentence to help the reader make sense of what is written. It is used in several ways: to separate items, introductory material, to indicate a natural pause, to set off extra information.

**C. Semicolon:** serve an important purpose. When writers have two complete thoughts, they can use a semicolon rather than Fan-Boys to provide the proper separation, for example, I went to the club early last night; Kathy wasn't there yet.

### 2.1.2.5. Style

The writer uses specific way to express himself through writing. The good writing style is the one that is written in clear way and accessible style in order to help readers to comprehend without any misused words, faulty sentences or poor paragraph (McClain & Roth, 1999). Duigu (2002) stresses that there are two types of problems related to style: one is the effect of personal writing habits; the second is the result of cultural differences between the mother tongue on the one hand, and English for academic purposes, on the other.

Organizational skills are some of the most important proficiencies you can have as an employee. Being organized will allow you to meet deadlines, minimize stress and carry out your duties more efficiently. To learn how improving your organizational skills can affect your work performance, you need to know what this skill set entails.

### 2.1.3. The Importance of EFL Writing Skills

EFL writing skills are very important in the learning process and in all phases of learning as they reflect a person's thoughts, beliefs and feelings, improve a writer's ability to provide useful knowledge, help EFL students benefit from writing as they receive input, enhance a basic and complicated position to readers, allow EFL students to see what they are thinking and assist them in comprehending how a fact is disciplined (El Sourani, 2017). Abdel-Haq, Atta and Hammad (2020) asserted that EFL writing skills are crucial skills for EFL students as they help EFL learners



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express one's individuality, communicate effectively, generate logical and persuasive arguments, reflect on and re-evaluate his or her ideas, provide and receive criticism; and prepare for school and work place. Furthermore, Walsh (2010) pointed out that unless students know how to express themselves in writing, they will not be able to communicate well with their teachers or just with anyone in normal daily situations else. Much of professional communication is done in writing: proposals, memos, reports, applications, preliminary interviewers, e-mails, and more are part of the daily life of a college learner or successful graduate. Writing has a unique position in language teaching since its acquisition involves practice and knowledge of other three language skills, such as listening, reading, and speaking. Moreover, it requires mastering other skills, such as metacognitive skills. Learners need to set an objective for their writing, plan it carefully, think over its layout and logical structure, revise it.

### 2.1.4. The EFL Writing Approaches:

There are five main approaches used in EFL instruction: the Controlled-to- free approach, the communicative approach, the paragraph pattern approach, the product approach, and the process approach. Nalliveetil and Mahasneh (2017) considered these various approaches to writing as perspectives or teaching orientations teachers are likely to adapt in an eclectic way accommodating their practices to the constraints of their teaching situations and their beliefs about how students learn to write. When the focus is on language structure, writing is understood as a product in which language knowledge is attained through imitation and manipulation of models, According to RajKumar (2013), there are many essential approaches for teaching writing skill, though all of them may not be perceived to bear equal degree of gravity for teaching writing skills. They are:

- **Controlled-to-free approach:**

This approach is based on the assumption that learners must be taught to write something in the order of simple to complex principle. There the teacher is advised to provide certain key sentences composed in distinct structures. The students do copying at fist and gradually they are led to more and more complex tasks and finally reach at the stage of composing a whole paragraph. The higher the control, the lesser are the mistakes and errors committed. Having got the level of maturity uplifted, students may be involved in writing compositions freely.

### The free writing approach:



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This approach of writing lays special emphasis on being able to construct free compositions. Here, the learners are suggested to focus on fluent expression of contents rather than clinging to strict grammaticality, mechanics and linguistic accuracy. Instead, these shaded aspects do not seem so serious to impair the conveyance of communicative messages. Further, they are supposed automatically getting to improvement in the succeeding phases of writing practice. Here, what is more pertinent than the contents which carry up almost whole of the expected meaning? Due to its focus on fluency more than accuracy and mechanics, this approach can also be termed as speed-up approach. This approach of writing focuses on fluent writing for meaning rather than on the grammatical accuracy and structural mechanics.

### **The paragraph pattern approach:**

This approach basically stresses on organization instead of maintaining grammatical accuracy and content fluency. Here, the learners are expected to unscramble sentences out of scrambled words. Similarly, disordered sentences are to be arranged properly to compose a paragraph. They are suggested to supply the best title as well. The basic construct functioning behind this approach of writing is that individual learners have their personal preferences and practices to perceive a phenomenon in question.

### **The communicative approach:**

This approach of writing lays special emphasis on the communicative goal of writing. As a matter of fact, writing is the graphic representation of spoken language and it is fundamentally geared to various forms of communication. For this reason, the writer should be filled with a keen feeling of actual communication by keeping the prospective readers abreast in mind. Here, the writer has to formulate a complete mind mapping of the concerned factors like readers, topic, purpose, context, message, possible obstacles and expected impressions in the targeted audience.

- **The product approach:**

The product approach to teaching writing skill primarily focuses on the finished product. Here, the learners do not strive for getting through the various consecutive processes during their learning endeavor. As per the implication of this approach, the students are expected to make an optimum modeling for practice with the help of all the resources that are recommended or supplied to them. Such carefully devised resources or materials would be available for them in the form of



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substitution tables, gap filing exercises, paragraph/essay models and outlines, tips for parallel writing, etc. Conversely, the contents (what aspects) and organizations (how aspects) are almost neglected or slightly touched despite their immense role for a complete writing (Tickoo, 2007).

### The process approach

As signaled by the title of this approach, it focuses on the internal procedures in reverse to the product approach. The fundamental tenet of this approach is that good writing should be logical, creative, recursive experimental and open-ended. Most of these activities are executed in the classroom as a laboratory. The cognitive role is set to premium than the affective and kinesthetic skills on the part of the learners. Perhaps by asserting to the various procedural and psychological facets of the process approach, many educators seem to be backing up this with their own arguments in the recent days.

Hadfield (2011) illustrated process writing by dividing the activities into several steps; as to:

- a. Brainstorm ideas about what to write.
- b. Choose ideas and group them under suitable headings.
- c. Order the ideas and plan the structures as introduction, arguments for, arguments against, conclusion.
- d. Write notes to expand each idea later on.
- e. Write a fist rough version of the draft.
- f. Get it checked by other learners for feedback.

#### 2.2.1. Nature of Brain-Based Learning (BBL)

Brain-Based Learning (BBL) provides valuable insights into the underlying neural mechanisms that govern these processes (Jailani, 2021). By understanding the brain's structure, functioning, and flexibility, school psychologists can introduce interventions and educational strategies that align with the biological foundations of learning and development (Wilcox et al., 2021). The BBL approach can greatly benefit intervention strategies to support students' learning and well-being (Baratali & Zardeini, 2023). By identifying the neural processes associated with specific learning difficulties or behavioural challenges, school psychologists can provide interventions to target



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these underlying neural mechanisms (Sanetti & Collier-Meek, 2019). The BBL offers valuable insights into how children's brains acquire, process, and retain information (Li & Lan, 2022).

Understanding brain functions associated with attention, memory, motivation, and emotional regulation can guide educators in designing instructional strategies that capitalise on these processes (Drigas & Karyotaki, 2019). Brain-Based Learning (BBL) focuses on meaningful learning rather than the traditional methods which concentrate on memorization. It is not easy for the brain to learn or understand something illogic or meaningful. According to Olaoluwa and Ayantoye (2016, p 449), BBL is based on the biology of human brain, it deals with how the brain learns, assimilates, thinks, and remembers. Understanding how the human brain works and learns and then connecting it to the teaching and learning process. Teachers must understand how to teach using what scientists have discovered about the brain to learn in a way compatible with their brain. Applying the ideas and methods found through research on the brain is necessary for teaching in a way that is in harmony with the brain (Ferreira & Rodríguez, 2022). Understanding how the brain functions, what influences the brain, and the educational consequences of these insights have changed over time (Tan & Amiel, 2022).

According to Jensen (2016), BBL helps the students have the ability to learn easily in sequenced ways as BBL includes several strategies and principles that are crucial for enhancing students' engagement and academic achievement. Brain-Based Learning which has been successfully adapted to distance education, covers different learning styles with a balanced and inclusive approach, supports cooperative and active learning, offers students multiple experiences with different materials and activities, Brain-based learning (BBL) is an educational approach that is based on the idea that how we learn is influenced by how our brain works. The goal of brain-based learning is to take advantage of the brain's natural learning processes to create more effective and efficient learning experiences. Scholars have presented perspectives on how the BBL should be utilized in education (Caine et al., 2016; Jensen & McConchie, 2020; Tileston, 2011).

### 2.2.3. The principles of Brain-Based Learning (BBL)

One of the influential models of BBL was presented by Caine and Caine (1994) which focus on 3 principles of brain-based learning (BBL) emotional climate, instruction, and consolidation. In detail, the BBL focuses on helping learners to be relaxed and alert which are the emotions that





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the brain functions best in learning. The learning activities should contribute to social interaction and emotional connection. This is to let them be eager to search for the meaning of the subject matter and enhance their self-efficiency in learning. The instruction principle emphasizes orchestrated immersion in the complex experience. The learning activities should allow students to comprehend both small details and a larger picture of what they learn. They should also be designed to let learners understand the patterns creating optimal opportunities for learning. The detail of Canine’s BBL model could be seen in the following figure:

**Figure ( 1 ): Principles of Brain-based Learning (BBL)**

**Brain-based learning (BBL)**

Emotional climate	Instruction	Consolidation
↓	↓	↓
Engage social interaction	Engage abilities to receive both detail and larger view	Engage capacity to learn form memorizing isolate facts and biographical events
Engage emotional connection	Engage capacity to recognize master essential patterns	Engage abilities to focus attention and learn from peripheral contexts
Engage their innate searching meaning	Engage the psychology in learning	Engage conscious and unconscious processing
Reduce treat and enhance self-efficiency	Acknowledge and engage the development and shift	Engage individual styles and uniqueness

adopted from (Caine et al., 2005)

**2.2.4. Strategies and Stages of Brain-Based Learning (BBL)**

There are many effective teaching and learning strategies for Brain-Based Learning including hypothetical thinking reversing, using different symbol systems, utilizing analogies, analyzing views/data, completion, mental maps, field trips, memory-supporting strategies, grouping, rhyming, acrostic, images and drama (Ramakrishnan & Annakodi, 2013). These strategies can also



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be used to improve learning skills by using the ways in which students feel most comfortable neurologically (Connell, 2009).

Brain-Based Learning environment should promote positive emotions and experiences; less stress. Different teaching methods can be used for Brain-Based Learning to promote meaningful learning such as cooperation, discussion, utilizing technology, problem-based learning, storytelling, peer teaching, written and verbal information, drama, making or listening music, by breaking down difficult information into smaller and understandable pieces for students (Triana, Zubainur and Bahrin, 2019).

Brain-based education is the engagement of strategies based on understanding of the various mechanisms of brain functions, to enhance students' achievement (Marope, 2016 & Mayer, 2017). Duman (2006) emphasized the importance of enriching instruction and learning environment using brain-based strategies to accelerate learning. Such strategies include manipulative, active learning, field trips, guest speakers, and real-life projects that allow students to use many learning styles and multiple intelligences.

According to Marope (2016), these brain-based strategies such as: movement, music, personal stories, humor, metaphors, colors, brainstorming using project presentations should be used in different levels and content areas in class, Tate (2013) added that teachers, as growers of dendrites and synapses should know how students comprehend and retain information. These strategies include brain storming, discussion, graphic organizers, visuals, humor, role play, movement, music, storytelling, manipulatives and technology. All the aforementioned strategies revolve around the following three fundamental instructional methods related to the BBL:



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### Method

#### Design of the study

This present study used the quasi- experimental design to investigate the effect of using some brain-based learning strategies To develop some EFL writing Organization Sub-skills For EFL preparatory school Students. A group of third year preparatory school students participated in the study. The participants of the current study were divided into two groups: the control group that received regular instruction and the experimental group that was taught by using Brain-based learning strategies. A pre-post test was administered to the groups before and after the treatment.

#### 1) Pre-testing

The pretested students to ensure the participants homogeneity in their entry levels in EFL writing Organization Sub-skills before treatment.

#### 2) Treatment

The researcher taught the experimental group using brain-based learning strategies whereas the control group received regular instruction. The treatment lasted for 6 weeks ( 11 sessions) during the 1<sup>st</sup> semester of the academic year 2023-2024

#### 3) Post-testing

By the end of treatment, the researcher posttested both groups using the EFL writing Organization Sub-skills test. This was done to investigate the effect of brain-based learning strategies on developing 3<sup>rd</sup> year preparatory school students' EFL writing Organization Sub-skills..

*Table (1): The t-value and level of significance in the pre-administration (Experimental/Control) of the EFL EFL writing Organization Sub-skills Test.*



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Sub skills	Group	No	Mean	S. D	D. F	F. Value	Sig.	t-value	Level of sig.
Organization skills	Control	33	7.19	1.48					Not. Sig.
	Experimental	35	6.81	1.25	66	0.27	Not sig.	1.129	at 0.05 level

\* The tabular value of t-test at the level of (0.05) and 66 D.F is (1.98).

From the previous table, it can be clarified that the two groups were independent and homogeneous. The homogeneity of the two groups was illustrated using the value and significance of the coefficient (F) in the previous table, and the absence of a statistically significant difference at the level of (0.05) between the mean scores of the research participants, the experimental and control research groups, in the pre-administration of the EFL writing Organization Sub-skills Test.

### 3.2 Variables of Study

**Dependent Variables:** EFL writing Organization Sub-skills.

**Independent Variable:** Brain-based learning strategies

#### 3.4.1. EFL writing Organization Sub-skills checklist:

##### 3.4.1.1. Aim of the checklist:

This EFL writing Organization Sub-skills checklist was designed by the researcher to determine the most important EFL writing Organization Sub-skills necessary for third year preparatory stage students (see Appendix B ).

##### 3.4.1.2. Source of constructing the EFL writing Organization Sub-skills checklist:

The EFL writing Organization Sub-skills and sub-skills of the checklist were determined by reviewing the following sources:

- a. The procedural objectives and standards included in the teacher's guide of third year, preparatory school students.



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- b. The previous literature and related studies concerned with developing EFL writing Organization Sub-skills for EFL preparatory school pupils.
- c. The directives of the Ministry of Education for preparatory school students EFL writing Organization Sub-skills.

### Results and Discussion

#### 4.1. Results of the study

Data were treated statistically in order to verify the study hypotheses :

In order to verify the study hypotheses :

1. There is a statistically significant difference at the (0.05) level of significance between the mean scores of the experimental and control groups in the content skill on the post administration of the EFL writing test in favour of the experimental group.
2. There is a statistically significant difference at the (0.05) level of significance between the mean scores of the experimental and control groups in the organization skill on the post administration of the EFL writing test in favour of the experimental group.
3. There is a statistically significant difference at the (0.05) level of significance between the mean scores of the experimental and control groups in the mechanics skill on the post administration of the EFL writing test in favour of the experimental group.
4. There is a statistically significant difference at the (0.05) level of significance between the mean scores of the experimental and control groups in the grammar and vocabulary skill on the post administration of the EFL writing test in favour of the experimental group.

, data were treated statistically.

##### 4.1.1. Verifying the First Main Hypothesis

The research hypothesis states that "There is a statistically significant difference at the 0.01 level between the mean scores of control and the experimental groups on the post administration of the EFL writing Organization Sub-skills Test in favour the experimental group. By using t-test to compare the mean scores of the participants of experimental and control groups in the post



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administration of the EFL writing Organization Sub-skills test and determining the statistical significance of the difference between them. The results were as shown in the following table:

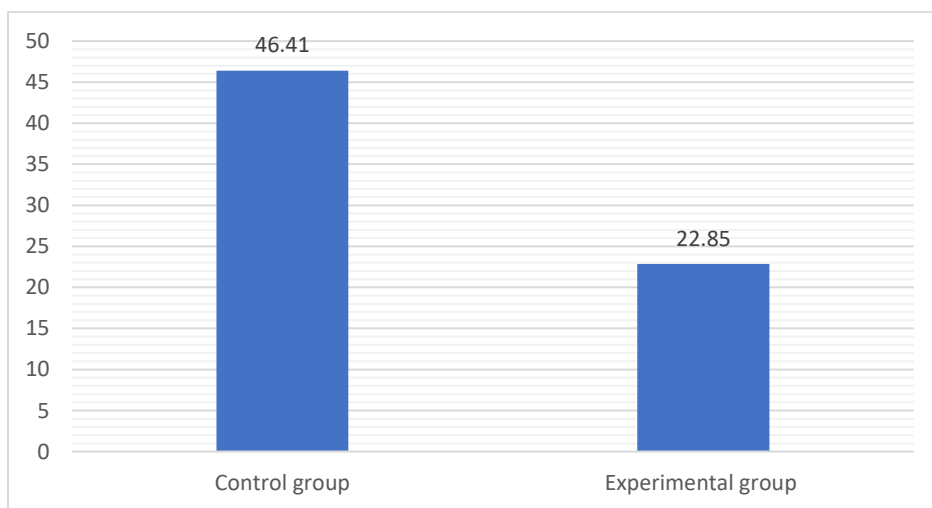
**Table ( 1): t- test differences between the participants' mean scores in the post administration of the EFL writing Organization Sub-skills Test.**

Group	No	Mean	S. D	D. F	t-value	Sig	Level of sig.
Control	33	22.85	2.95	66	33.23	sig.	0.01
Experimental	35	46.41	2.81				

\* The tabular value of t-test at the level of (0.01) and 66 D.F is (2.62).

In light of the results of the previous table, it is clear that the calculated t-value of is 33.23, exceeding its tabular value of 2.62 at a degree of freedom 66 at a level of statistical significance (0.01), these results indicate that there is a real difference between the mean scores of the research participants in the experimental and control groups, in the post administration of EFL EFL writing Organization Sub-skills Test in favor of the experimental group. This finding of the research can be clarified using the following statistical representation:

**Figure ( 5 ): The graphical representation of the research participants' mean scores on the post-administration of the EFL writing Organization Sub-skills Test.**





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Accordingly, it was confirmed that there was a statistically significant difference at the ( $\alpha \leq 0.01$ ) level between the mean scores of the research participants of the experimental group that was taught using some Brain-based learning strategies and the control group that received regular instruction in the post-administration of the EFL writing Organization Sub-skills Test in favour of the experimental group and The percentage of improvement in performance is estimated at 47.12 %.

In order to calculate the effect size of using some Brain-based learning strategies to develop EFL Writing skills for Preparatory stage students. The statistical significance alone was not sufficient to determine the importance of the research. Thus, the practical significance and the educational importance of the research results should be clarified by determining the value of the ETA square and its significance and the value of the effect size and its significance, in order to determine the contribution of the independent variables in the development of the dependent variable while isolating the influence of other extraneous variables from the results of the experiment. The results are illustrated as follows:

**Table ( 2 ): The effect size of using some Brain-based learning strategies to develop EFL writing Organization Sub-skills**

Group	D. F	t-value	Sig.	$\eta^2$ value	Effect size
Control				value	Sig. Value Level
Experimental	66	33.23	0.01	0.94	Sig. 8.18 Large

Based on the previous results, it becomes clear that the value of the ETA square for the results of the participants of the experimental groups in the EFL writing Organization Sub-skills Test exceeds the value indicating the educational importance of the statistical results in educational and psychological research, which is estimated at (0.15), this indicates the positive effect of using some Brain-based learning strategies on developing Writing skills.



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Further, the effect size also reached (8.18), which is a large (high) level of influence, as the size of the effect is considered large if its value is greater than or equal to (0.8), which also indicates the practical and educational significance of the results of the research and the high effect of the independent variables on the development of the dependent variable. Thus, teaching through Brain-based learning strategies to Enhance EFL writing Organization Sub-skills for Preparatory stage students was greatly effective. The results of the research hypothesis are consistent with results of previous studies, which are concerned with the development of EFL writing Organization Sub-skills.

### 4.2. Discussion of Results

The results of the study on writing post-test showed that brain-based learning strategies had a large effect on developing the experimental group students' EFL writing Organization Sub-skills. The results revealed that there was a significant difference between the experimental and the control groups' mean scores in the post-test EFL writing Organization Sub-skills in favor of the experimental group .

The experimental group students exhibited in EFL writing Organization Sub-skills. These skills were improved obviously. Such improvement and development are due to using brain-based learning strategies.

Using brain-based learning strategies encouraged the students to read and understand at the various writing levels. They were provided with plenty of opportunities that enhanced self-esteem and interaction among them. In addition, brain-based learning strategies, created an excellent environment that helped students enhance and develop their EFL writing Organization Sub-skills. brain-based learning strategies also created a more-student- centered environment writing class where students practice writing individually and in groups. Co-operative learning helped them work together and benefit from each other. They could confer and discuss their writing tasks and activities.

Encouragement and positive feedback on the part of the researcher helped the students read without any fear. They asked each other and revised each others' work. The teacher tolerated their





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minor mistakes and was supportive all the time. This helped students become interested and engaged in EFL writing Organization Sub-skills classes. At the end of each session, the researcher gave exercises and tests that measured the students' progress in writing.

The study's summary, results, conclusion, and recommendations are presented in the next chapter

### 5.3. Recommendations and suggestions for further research

Based on the results and conclusions of the current study, The following recommendations were presented:

- 1- EFL teachers should increase the students' role in writing classes and minimize their own role.
- 2- EFL teachers should pay more attention to brain-based learning' use on developing EFL writing Organization Sub-skills and other important skills.
- 3- Preparing training courses and workshops for English teachers to learn how to use brain-based learning strategies in planning and teaching in EFL writing classes.
- 4- Replacing regular teaching methods with more interactive methods that focus on active student participation in the learning process and interactive methods that focus on active student participation are important.
- 5-Turning from a teacher dominating the classroom to a teacher who organizes, supports, guides, coordinates and assists students in EFL teaching and learning.
- 6- EFL writing Organization Sub-skills should be given more attention in our EFL classes. More time and efforts should be exerted to develop the EFL writing skill and its sub-skills.
- 7- Creating a good atmosphere to help students learn and improve their educational and life skills.
- 8- Curriculum planners should provide more opportunities to use brain-based learning and promote positive attitudes towards English language learning.



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9. Students and teachers should be aware of the different writing organization sub-skills that have to be mastered in preparatory stage.

10-EFL teachers should motivate and stimulate students at the various stages to communicate to succeed at school and outside school.

11. As writing skills are crucial, they deserve appropriate attention and should receive more focus at different educational stages.

12. Supervisors should Provide teachers with educational materials that help them understand brain-based learning and the importance of using it when teaching writing skills.

13. – Inservice teachers of EFL should be provided with specific training programs to use brain-based learning strategies to improve and develop their students' EFL writing Organization Sub-skills through activities ,methods and techniques which arouse the thoughts and motivation of the students' brain .

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