

تطبيق استراتيجية العصف الذهني  
الإلكتروني و تنمية مهارات الكتابة باللغة  
الانجليزية لدي الطلاب المعلمين  
**An Electronic Brainstorming  
& Developing EFL Prospective  
Teachers` Writing Skills**



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عميد كلية التربية- جامعة بنها.

الزقازيق.

**ملخص الدراسة**

هدفت الدراسة الحالية إلى تطوير مهارات الكتابة لدى الطلاب المعلمين باللغة الإنجليزية كلغة أجنبية بتطبيق استراتيجية العصف الذهني الإلكتروني (EBS). تكونت عينة الدراسة من 40 طالباً، في السنة الأولى مقيدين بقسم اللغة الإنجليزية بكلية الزقازيق النوعية. تم تقسيم العينة إلى مجموعة تجريبية وعددها 20 طالباً ومجموعة ضابطة وعددها 20 طالباً. استخدمت الدراسة الحالية الأدوات الآتية: تصميم شبه تجريبي للاختبار القبلي لمجموعة واحدة، قائمة مرجعية لمهارات الكتابة باللغة الإنجليزية كلغة أجنبية مطلوبة لطلاب السنة الأولى ، وهي إحدى دورات اللغة الإنجليزية كلغة أجنبية، قياس اختبار بعض مهارات الكتابة لدى بعض الطلاب ومهارات كتابة اللغة الإنجليزية كلغة أجنبية، تم إجراء تحليل البيانات الكمية. وقياس متوسط درجات الاختبار التمهيدي والاختبار اللاحق للمشاركين في الدراسة. أظهرت نتائج الدراسة فاعلية تطبيق استراتيجية العصف الذهني الإلكتروني لتنمية مهارات الكتابة باللغة الإنجليزية لدى الطلاب المعلمين، حيث أن نتائج المجموعة التجريبية كانت أفضل من نتائج المجموعة الضابطة في مهارات الكتابة باللغة الإنجليزية. **الكلمات المفتاحية:** مهارات كتابة اللغة الإنجليزية كلغة أجنبية ، دراسة تجريبية ، إستراتيجية العصف الذهني الإلكتروني (EBS).

### **Introduction:**

The current era witnesses rapid scientific progress. To cope with this rapid development, we have to pay attention to the development of creative minds capable of solving existing problems. Language is a means of control as well as of communication. Whereas in the 1940s and 1950s, learning language was been seen as a “habit” that learners were expected to develop and maintain, today, language studies undertake to gain insight into social, political, culture, psychological, cognitive and interactional processes entailed in learning language. Genc (2007) stated that when we learn a language, we usually learn listening, then speaking, then reading and finally writing. These are called the four language skills.

So writing is the last language skill to be learnt. Writing involves the representation of a language through a system of physically transferred, or digitally represented symbols. As for spoken language, human memory is short-lived, and the storage capacity of the brain is limited. Writing overcomes such problems and allows communication a cross space and through time. Fromkin et.al, (2007). |"Although spoken language has primacy among linguists, written language is of interest for its own sake." (ibid: 554). The written language reflects, to a certain extent, the elements and rules that together constitute the grammar of the language. According to Tangperm poon (2008: 320), "when compared to other language skills, writing is the most difficult skill". That is because it requires writers to have a great deal of lexical and syntactic knowledge as well as principles of organization in L2 to produce a good writing.

To Taylor (1986), writing is a process that involves at least four distinct steps: prewriting, drafting, revising, and editing. It is known to be a recursive process. While you are revising, you might have to return to the prewriting step to develop your ideas.

Chambers (2016) found that both typical students and those with learning disabilities do not perform well in writing. Factors that impact learning to write include complexity of writing and challenge in developing effective writing instruction or teaching.

To Macarthur (1999), students who find writing challenging often struggle with the basic transcription processes involved in writing. These include handwriting or typing, spelling, capitalization, and punctuation.

Many studies were conducted to test this postulate. However, two problems have been noticed in traditional brainstorming. The first is production blocking. This happens when we have an idea, but when someone else talks, we lose interest in it. The second problem is evaluation apprehension. According to Shulah (2009), it refers to our anxiety about what others will think of us if we say what we think. To avoid the drawbacks of traditional brainstorming, a better alternative is used in this study which is electronic brainstorming. It allows working groups to generate an abundance of ideas anonymously (Cooper, 1993). The development of students` mental abilities has become the main goal of the educational process in all countries of the world. In the light of the technological advances of the times, computer using in education in general and e-education has become indispensable.

Electronic brainstorming is a recent innovation in the settings of EFL teaching and learning. We have several programmes. These include Team Focus, vision Quest, and software-Assisted meeting Management. In electronic brainstorming, the participants have an option to remain anonymous if the e-mail is used instead of video conferencing. Electronic brainstorming is a simple process. Individuals enter ideas on the topic at will.

- This study deals with the variables of the study: the dependent variable (EFL writing skills), the independent variable (electronic brainstorming) and (EFL writing apprehension). - Writing as a process :

According to Heald -Taylor (1994, 6), process writing is ‘‘an approach which encourages ESL youngsters to communicate their own written messages while Developing their literacy skills in speaking and reading.’’ so students don’t delay involvement in the writing process until they perfect their abilities in handwriting, spelling, grammar, etc.

- Writing as a skill :

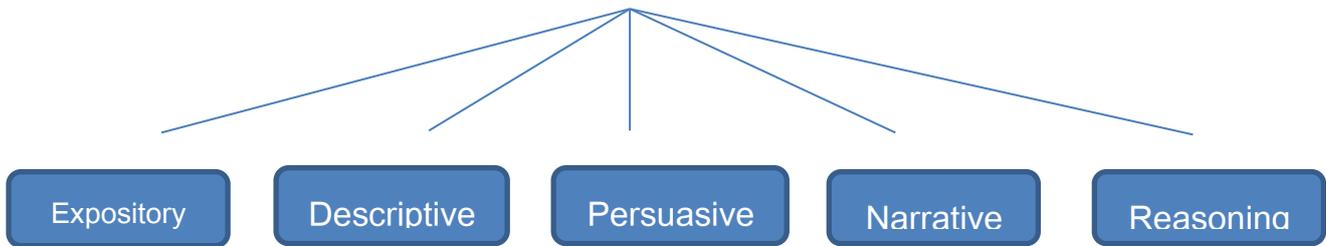
Archibald (2001, 153 - 160) says that writing is a skill that needs knowledge and proficiency in many areas. It is a complex skill that results from the interaction of the writer’s skills and the cognitive demands of the task. Language arts instruction in the American schools today comprises

segregated and isolated subjects: spelling, reading, handwriting, phonics, etc. within each subject, the individual lessons are also segregated and separated, being dedicated to one specific skill. Once this skill is mastered by the majority of students; the next skill is then taught.

- Writing Tasks :

According to cope & Kalantzis (1993), the Australian, teaching and learning cycle' for genre instruction outlines the teaching of writing in three stages. The first is the modeling stage. During it, teachers introduce the text type, purpose, audience, text context, vocabulary grammar and organizational structure, which are used in realizing that text type.

- Types of EFL Writing :



- The socio-cognitive approach to writing :

Motivated by the limitations of cognitive approaches to writing pedagogy, Chandrasekaran (2013) suggests a socio-cognitive approach to writing. This takes into account the socio-cultural contexts, thinking processes in enacting each genre practice, and reader expectations.

- Writing as a social and cultural phenomenon :

Our lives involve all kinds of writing. Notes on the fridge, journalistic writing and greeting cards all fill the purpose of communicating and bringing messages across. This is one of the criteria for writing to be a social and cultural phenomenon. Cushing weigle (2002: 19) refers to Hayes when he says: "Writing is also social because it is a social artifact and is carried out in a social setting. What we write is shaped by social convention and Social interaction." Regarding the cultural aspect of teaching writing in the EFL classroom, there could be cultural differences concerning structure and discourse.

- Writing stages :

Composing	The findings suggest, students made effort to find the proper language express their ideas
Comparison	Students were able to notice most difference between their original text and the reformulated one
Revision	the improvement of the written product in the posttest

- The Teaching of Writing :

Writing instruction has been a subject of much scrutiny and research in the past several years. The National Council of Teachers of English has developed a set of standards on which all writing programs should be based. Society demands that we write and write well, and the importance of developing quality, effective writing program in the school is essential.

- The cognitive aspect of writing :

Many researchers have suggested models for writing as processes of cognitive activities. These ask : what is going on mentally or what are his thoughts when he writes a piece of text?. According to Cushing Wiegler, (2002 : 22) research has been done to “gain insight into the mental activity and decision-making process of the write as he or she carries out a writing task.”

- Challenges of teaching English writing in EFL contexts :

Correspondingly, Al-Khasawneh (2010) lists seven reasons explaining why writing, in EFL contexts, is considered one of the most complex skills that many teachers and students suffer from. They are summarized as follows:

1. Some teachers have a low proficiency in English, so they are not able to make the best use of the suggested textbooks and the recent methodologies to foster the students' learning.
2. Many EFL students usually own a fragile vocabulary reservoir, so they tend to repeat limited words in their texts.
3. The EFL students' compositions are usually hard to understand because the sentences included are syntactically broken and semantically ambiguous.
4. Most of the EFL students don't own enough information about the verb-tense system. The simple present is the only one used majorly.

5. Providing a fragile feedback to the targeted students makes writing harder. Due to the fact that some classes are overcrowded, teachers tend to provide holistic feedback to save time.

6. Literal translations from Arabic lead to ambiguousness. Some students tend to use the exact Arabic words and translate them into English. They have fragile knowledge about language context, discourse and structures.

7. Many EFL students don't use inventive spelling in their writings. They use words that they know only.

- Traditional Brainstorming :

Traditionally, brainstorming has been used in teaching writing to EFL prospective teachers. According to Holubova (2010), brainstorming is a group creativity technique where by a group tries to find a solution for a specific problem by gathering a list of ideas spontaneously contributed by its members. Alex Osborn developed the original approach of brainstorming in his (1953) book. " Applied Imagination ".

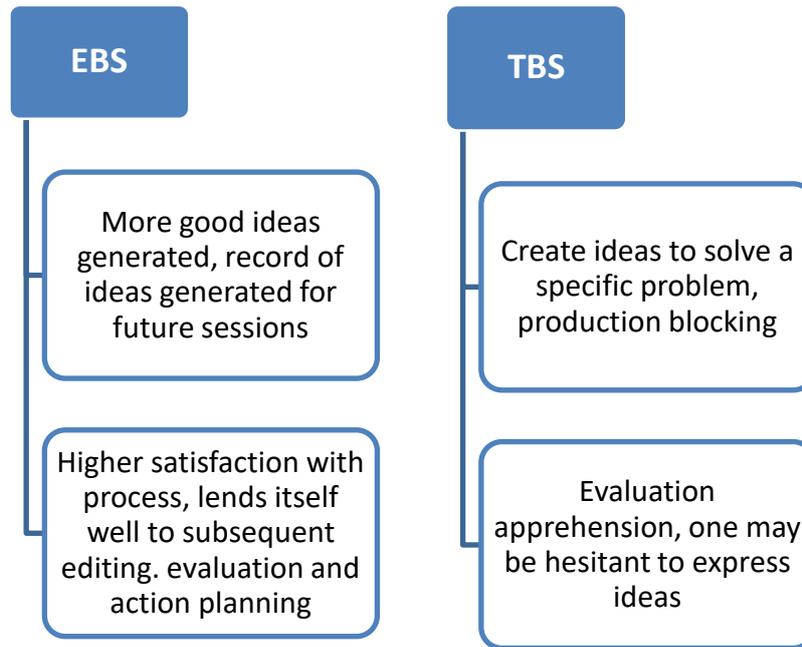
- A cognitive-motivational perspective on brainstorming :

Idea generation is basically a cognitive process. It involves searching one's own memory for relevant categories and ideas within those categories (Nijstad & Stroebe, 2006; Paulus & Brown, 2003; 2007). Initially one may search the most accessible categories and ideas. As one has difficulty coming up with more ideas in one category or area, one will tend to switch to another category.

- Creativity through computer-mediated communication :

A more efficient way of sharing ideas may involve the use of electronic system (Dzindolet, Paulus, Glazer, 2012). With the advent of computer systems for group decision-making, there have been a large number of studies that have used digital means of idea sharing. Many studies have used group decision support systems (GDSS, Limayem, Banerjee, & Ma, 2006; Nunamaker, Dennis, Valacich, Vogel, & George, 1991). In the context of e-planning, GDSS can be considered as a technology that supports person-to-person collaboration, structuring and aligning the information exchange among individuals and groups (Laurini, 2001).

\* Difference between Traditional and Electronic Brainstorming Strategy.



- Electronic Brainstorming :

We set out to assess whether a recently developed computer technique – electronic brainstorming – could accomplish this. Electronic brainstorming is the use of computer technology to facilitate the entry and automatic dissemination of ideas in real-time to all. Electronic brainstorming offers the promise of enhancing the creative capacity of groups.

Computers have been used for a number of years to enhance the creativity of individuals by generating words and phrases which might stimulate the individual to create more and better ideas. Because computers contribute to creativity, thus facilitating communication between individuals working together on creative projects (e.g., Lubart, 2005), EBS appears to be a useful technique for generating ideas in groups. It appears that one of the biggest advantages of EBS is that it reduces or eliminates the detrimental blocking effects of verbal brainstorming (e.g., Diehl & Stroebe, 1987; Gallupe, Cooper, Grise, & Bastianutti, 1994; val-acich, Dennis, & Connolly, 1994).

- Advantages of Electronic Brainstorming :

The EBS paradigm has a number of advantages. It allows participants to share ideas without experiencing production blocking (Gallupe, Bastianutti & Cooper, 1991). The ideas can be shared

anonymously so that evaluation apprehension can be minimized. Since the ideas are in an electronic form, they can be easily downloaded for further evaluation or data analyses. Many systems also allow for voting or decision making options so that groups can select the top ideas. We know of only one study that has compared brainwriting and EBS. This study found that when the process makes similar demands on the participants, a similar number of ideas are generated by brain writing and EBS(Michinov,2012).

The benefit of electronic brainstorming paradigm also depends on temporal effects. In general, in short term (15 to 20 minutes) brainstorming sessions, the productivity is often found to be high in the first few minutes of the brainstorming session after which the number of ideas diminished drastically over time (Kohn & Smith, 2011). Research on EBS has shown that participants will generate and recall more ideas (Derosa, Smith, & Hantula,2007; Hinds & Payne, 2016) wit this procedure than in face – to – face groups. Furthermore, EBS groups can also outperform similar size nominal groups. However this benefit seems to depend in part on the size of the group.

- Effects of Electronic Brainstorming Techniques on Performance :

As suggested by Osborn (1957) himself, exposure to ideas produced by others allows individuals to piggyback their own ideas on someone else's. although the evidence for cognitive stimulation in brainstorming groups is mixed (e.g., Diehl & Stroebe, 1987, 1991; Ziegler, Diehl, & Zijlstra, 2000), it has been shown that idea generation can be enhanced by exposure to ideas used as stimuli (e.g., Dugosh et al., 2000; Nijstad & Stroebe, 2006; Nijstad Stroebe, & Lodewijkx, 2002). For example, Dugosh et al.

These findings suggest that at least two processes may be involved in an idea-generation task: attention and cognitive stimulation. The former requires shifting the focus of attention from one's own ideas to those of other group members, whereas the latter consists of eliciting new ideas from pre-vious ones containing task-related stimuli. the experiments of Ziegler et al. (2000), where groups of 2 and 4 members were compared in virtual versus nominal conditions in mixed- (Study 1) or same-gender groups (Study 2). They found that "large" virtual mixed-gender groups produced more non-redundant ideas than did other groups. They also found more

redundancy ideas and irrelevant utterances in 4-member virtual groups. This redundancy may be interpreted from an attentional perspective, whereby attention has been directed mostly toward non-task-related communication, rather than toward creative ideas produced by other group members.

- Definition of Writing Apprehension :

Writing apprehension, a term first defined by Daly and Miller (1975a), is characterized as “a general avoidance of writing and situations perceived by the individual to potentially require some amount of writing accompanied by the potential for evaluation of that writing” (Daly, 1979, p. 37).

High apprehensive individuals will select courses and college majors that they perceive to involve little or no writing (Daly & Miller, 1975c; Daly & Shamo, 1978).

- Writing Apprehension and Self-Concept :

In terms of self concept, writing apprehension is inversely correlated to the individual’s self concept and to his rating of his own self competence (McCroskey, Daly, Richmond & Falcione, 1977). High apprehensive students have no confidence in themselves in terms of their writing skills; they are unable to think of ideas, express themselves clearly and organize their thoughts into meaningful units (Heaton & Pray, 1982).

- Writing Apprehension and Writing :

Individuals with high apprehension score significantly lower on tests of writing skills than those with low apprehension (Daly, 1978). Also, apprehensive writers, when forced to write, write poorly, using fewer words per sentence, fewer sentences, less qualification in their statements (Daly, 1979) and less intense language in their messages (Daly, Miller, 1975b).

A study by Heaton and Pray (1982) showed that student with high writing apprehension, as determined by the “ Writing Apprehension Test “, used significantly fewer words than low apprehensive students. These individuals view their writing as being less successful and inferior than those who exhibit low apprehension (Daly & Miller, 1975c).

- Causes of Writing Apprehension :

It is unclear whether writing apprehension precedes poor writing or poor writing causes writing apprehension. However, in order to solve both problems, the reasons why writers are apprehensive must be identified in order to give them the necessary instruction to alleviate their stress and improve their writing skills (Heaton & Pray, 1982).

Lack of mechanics, spelling errors, poor or incorrect grammar, insufficient vocabulary, and the teacher's red pencil contributes to the anxiety described above. Unfortunately, many writing classes focus on these very skills. Research has indicated that the concentration on the construction of the writing piece rather than the content has negatively affected the student writer (Graves, 1978). Red-pencilling students literary attempts have only aroused their fear of failure and increased their writing apprehension. Penmanship is also a major cause of writing apprehension. Although the writing teacher knows that penmanship has nothing to do with the quality of writing, students as well as other adults equate good writing with good penmanship (Heaton & Pray, 1982).

- Reduction of Writing Apprehension :

Reduction of writing apprehension, once identified, must begin with a change in writing instruction. The students must be allowed to develop their own personal style of writing. They must be taught how to be an active participant in the three writing processes: pre - composing, composing, and post – composing (Graves, 1976). They need to become critical thinkers and evaluators, eliciting opinions from others as well as from themselves (Graves, 1976). They must develop a sense of audience, rediscover the playfulness of writing and understand the usefulness of its purpose (Graves & Calkins, 1980).

A writing apprehension is a serious problem that needs to be diagnosed. Its determining factors need to be explained and strategies of reducing it need to be devised accordingly. To put it another way, writing apprehension is someone's experience of feeling of anxiety, discomfort, and nervousness during writing and these feeling lead to writing being disrupted (McLeod, 1987). Similarly, Grabe and Kaplan (1996) used apprehension basically to refer to someone's negative and anxious feeling that distort some part of the writing

process, that is, to describe those writers who know how to perform tasks, but who face problems with these tasks due to apprehension.

**Background of the problem:**

In spite of the importance of writing skills, there is a lack in EFL writing skills among first university students. Thus there is a need for finding an effective instructional strategies for developing EFL writing skills among first university students. In order to be fully sure of the problem of this study, the researcher conducted a pilot study. The results of this pilot study confirmed the low level of the prospective teachers` EFL writing skills. So, it is clear that there is a great need for developing EFL writing skills among first- year students. This study applied electronic brainstorming strategy.

**Context of the problem :** The EFL writing skills are very important in the educational system. The challenges that are faced by the teachers to teach writing skills are difficult to motivate their students, students of diverse levels, difficult materials and time constraints to teach the students. The researcher conducted a pilot study involving a group of 15 EFL major first- year students at the Faculty of Specific Education, Zagazig University. A researcher found that:

- Most of them are too shy and afraid of taking part in the writing activity. That is related to evaluation apprehension found in traditional brainstorming. It refers to our anxiety about what others will think of us if we say what we think.
- Thus, they have problems in expressing their ideas in writing.
- Results of the pilot study indicated in the table , proved the poor EFL writing skills of freshmen at the Faculty of Specific Education, Zagazig University.

## - Results of the Pilot study

Skills	Percentage
No shame of taking part	40%
Lack of fear in expressing ideas and feeling	33.3%
Using grammatical rules correctly	20%
Writing up in a logical order	25%
Patience and easily excitation	15%
Using intelligible handwriting	26.6%
Fragmentation of written concepts	10%
Relaxing in writing of ideas	30%
Staying calm and confidence in thinking	20%

- The problem of the study could be revealed in the poor performing of EFL writing skills among major freshmen at the Faculty of Specific Education, Zagazig University.

**Statement of the problem :** In spite of the importance of EFL writing skills for prospective teachers or faculty students of English specialization have poor performance and weak abilities in EFL writing skills. The nature of the stated problem urges instructors of English to utilize various methods to facilitate learning writing skills in the academic context. The present study proposed a strategy based on electronic brainstorming in attempting to develop the necessary writing skills of the EFL prospective teachers, this will involve reducing their apprehension.

**Questions of the study :** To tackle the problem, the present study attempts to find an answer to the following main question: “ How can the EFL writing skills of the first year prospective teachers be developed and their apprehension be reduced using an electronic brainstorming strategy? “

To answer the main question above, the following sub-questions are extracted from it:

- 1) What are the necessary EFL writing skills required for the prospective teachers?
- 2) To what extent do they master EFL writing skill?
- 3) What are the procedures and techniques needed for designing a social media brainstorming strategy?
- 4) To what extent is a social media brainstorming strategy effective in developing? EFL writing skills of the first year prospective teachers?
- 5) How will the use of electronic brainstorming reduce the students apprehension?

**Delimitations of the study :** The present study is limited to.

- 1) A sample of the first year EFL students or prospective teachers in the Department of English at the Faculty of Specific Education.
- 2) The first term of the academic year (2020/2021).
- 3) Using the electronic brainstorming strategy.
- 4) Using some tools, which are : the writing skills questionnaire, an EFL writing test and a writing performance checklist.
- 5) Some writing skills which are suitable for the first year EFL prospective teachers and which were specified by the questionnaire results:
  - a. writing a draft.
  - b. grammatical skills.
  - c. syntactic skills.
  - d. mechanical skills.
  - e. rhetorical skills.

#### **Instruments and Materials**

- 1- An EFL writing skills checklist prepared by the researcher.
- 2- An EFL writing skills test to be used as a pre and post-test prepared by the researcher to evaluate the effect of using electronic brainstorming on developing EFL writing skills among first-year faculty students with a rubric to score it.
- 3- An EFL writing rubric for scoring the test.

4- Teacher's guide for using electronic brainstorming for developing EFL writing skills

**Significance of the study.**

A-EFL Prospective Teachers: It may improve the EFL students' writing skills as it enhances their confidence through the social media brainstorming strategy.

B- EFL Instructors: It sheds lights on the importance of teaching writing skills and the electronic brainstorming strategy. This may encourage English teachers and instructors to adopt this strategy to improve writing skills.

C-Researchers: It will provide curriculum designers with a new strategy based on using social media brainstorming in the field of teaching and learning English.

**- Operational Definitions (definition of terms)**

-Writing skills.

According to Formkin et.al. (2007: 557), "writing is a basic tool of civilization. Without it, the world as we know it could not exist." "The written form of language is more conservative than speech. Writing has stability and permanency which make it superior to speech".

- Electronic Brainstorming.

According to Gallupe & Cooper (1993: 110), electronic brainstorming is the use of computer technology to facilitate the entry and automatic dissemination of ideas in real-time to all members of a group, each of whom may be stimulated to generate other ideas. "According to Herrmann (2010), it is " the use of computer-based procedures, such as online discussions... to generate unique ideas and solutions to problem".

- Writing Apprehension.

Writing apprehension is a term coined by Daly & Miller (1975). It refers to a person's tendency to avoid situations that potentially require writing. This is related to specific individual differences.

**- Participants:**

The participants of the study were selected from the first year students during the first semester of the 2020-2021 academic year, in the English section, at Faculty of Specific Education, Zagazig university. The total number of students were (40). Participants were

divided into an experimental group and a control group, with (20) students in each group.

**- Purpose :**

The main purpose of the present study was designed for developing EFL writing competencies or skills of first year students in the Faculty of Specific Education, and Clarifying the influences of electronic brainstorming activities and devices in developing the writing skills of the stated students. Moreover, identifying the writing skills suitable for the first year prospective teachers at the faculty of specific Education.

**- Procedures :** In an attempt to test the study hypotheses, the researcher will adopt the following Procedures:

- 1) Reviewing the relevant literature and previous studies concerning EFL writing skills.
- 2) Analyzing the content of English language which is being taught to the first year prospective teachers.
- 3) Preparing and administering a questionnaire to the jury members to state the most important EFL writing skills needed for the first year prospective teachers.
- 4) Identify the EFL writing skills appropriate to the first year prospective teachers.
- 5) Designing the writing test and submitting it to the jury members.
- 6) A pilot administration of the writing test to ensure its items consistency common validity & reliability.
- 7) Dividing the study sample into two group: experimental group (taught through electronic brainstorming strategy) and control (taught through the traditional method).
- 8) Administrating the writing test before teaching to both control and experimental groups.
- 9) Posing writing a paragraph about “How can youth contribute in developing their country?” to the Experimental group through an electronic brainstorming strategy, and the control group through the traditional method.

10) Applying the writing test to both the control and experimental groups after teaching (the prescribed paragraph's topic via electronic brainstorming strategy) to the experimental group.

11) Using suitable statistical methods to measure the validity of electronic brainstorming strategy in developing EFL writing skills and reducing apprehension.

12) Discussing the result, providing recommendations and suggestions for further research.

### Hypotheses of the study

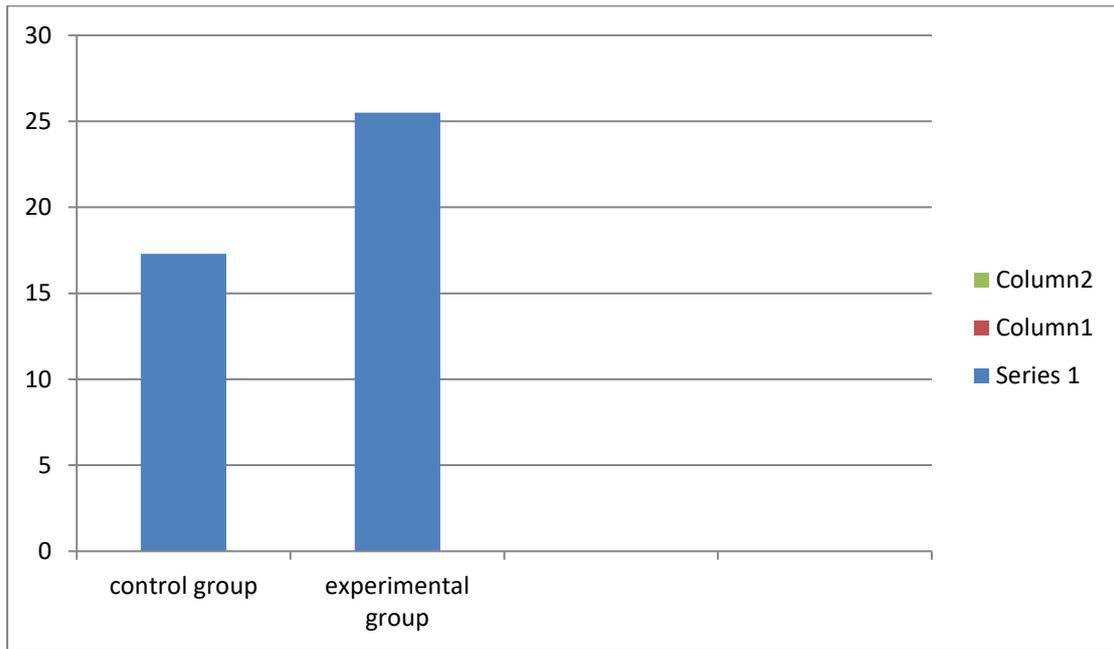
The main hypothesis of the study states that there is a statistically significant difference between:

- 1) The mean scores of the experimental group and the control group in the post administration of the writing skills tests as a whole and its components.
- 2) The mean scores of the experimental group study and the pre- and post-administrations of the writing skills tests as a whole and its components.
- 3) The mean scores of the experimental group study and the control group in the post administrations of the writing apprehension test as a whole and its sides.
- 4) The mean scores of the experimental group study in the pre and post administrations of the writing apprehension test as a whole and its sides.

- Results of The main hypothesis stated that "there is a statistically significant difference between the mean scores of the study participants in the pre-posttest of the overall EFL writing skills in favor of the post administration". To test this hypothesis, paired sample t-test was used.

\* A comparison of both Groups` Mean Scores of the Post- EFL Writing Test

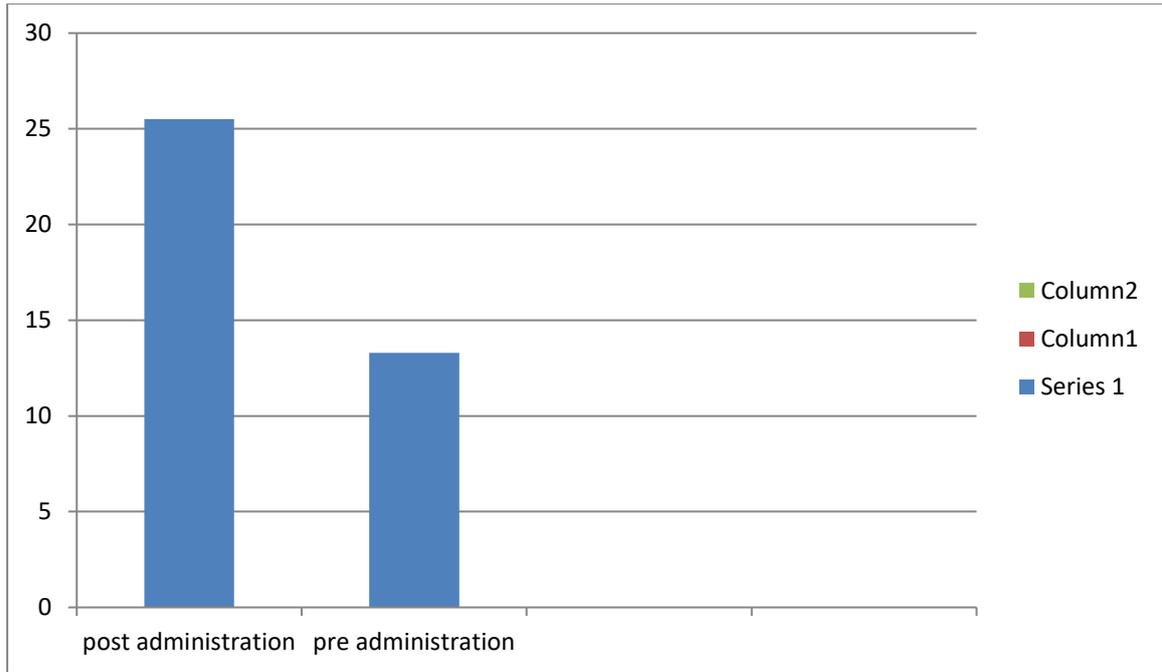
Group	Number of participants	Mean scores	Standard deviation	t-value	DF	Significant
Experimental	20	25.5	1.91	59.82	19	0.05
Control	20	17.3	1.55	49.72	19	0.05



- In the second hypothesis, it has been proposed that there would be a statistically significant difference between the mean scores of the experimental group in the pre- and post- administration of the EFL Writing test in favor of the post-administration's results. Paired samples t-test was used to verify this hypothesis.

\* A comparison of the Experimental Group's Mean Scores of the Pre- and Post- EFL Writing Test

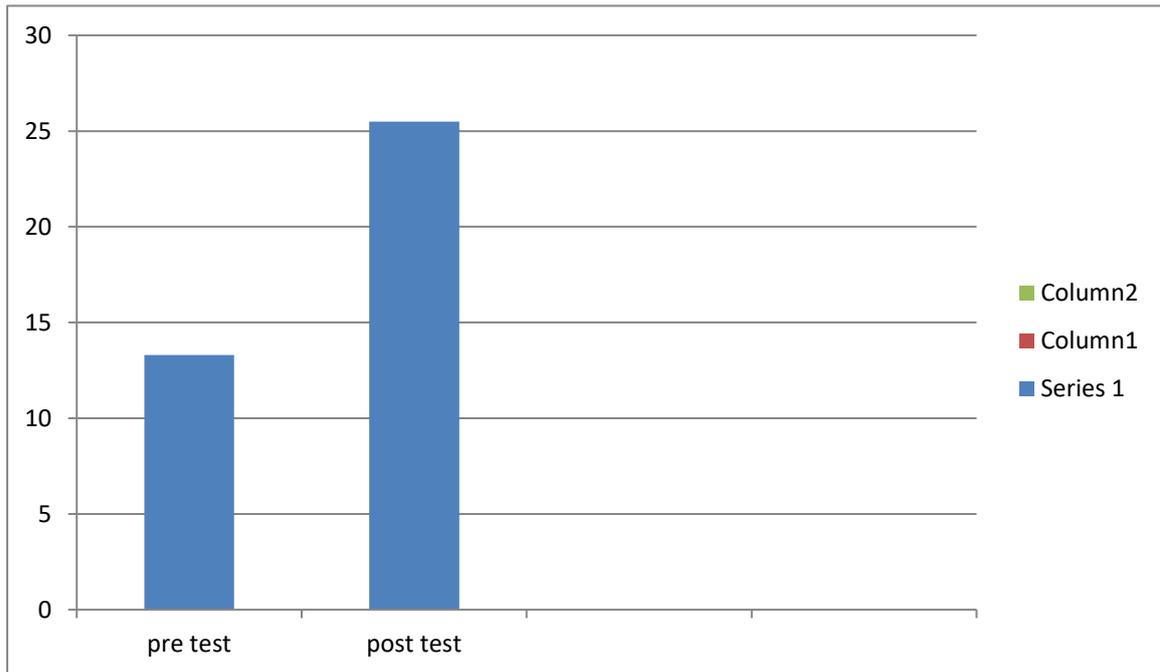
Administration	Number of participants	Mean scores	Standard deviation	DF Significant	t- value
Pre-	20	13.3	1.77	19 0.05	25.79
Post-	20	25.5	1.91		



- In the third hypothesis, it has been suggested that the EBS would be effective in developing EFL Writing skills among freshmen at the Faculty of Specific Education, Zagazig University. Cohen`s equation for effect size was used to examine this hypothesis.

Experimental Group	Number of participants	Mean scores	t-value	DF	Significant size	Effect size
Pre-test	20	13.3		19	0.05	
Post-test	20	25.5	25.79			0.68

## \* The Total Effect Size of the EB based on Strategy on EFL Writing Skills

**- Discussion of the results :**

The EBS helped the students to change their concept about learning English language in general and EFL writing skills in particular that helped them to turn from passive learners into active learners, also reduce their shame, fear and apprehension of EFL writing. The experimental group`s participants have changed the way they feel about EFL Writing skills. The main purpose of the study was to develop EFL writing skills among the first year students, enrolled in the English section, Faculty of Specific Education, Zagazig University using electronic brainstorming including (E-learning, Internet applications, Social media, ..... etc). EBS were implemented through nine sessions. Each session aimed to develop a specific skill using different activities and tasks that were introduced to the study participants. Before starting the writing activities, the teacher helped students by discussing the topic and activate their previous knowledge. In addition, the nine sessions included a wide variety of audio-visual videos, links, and power point presentations. Before implementation, the study participants avoided expressing their opinions and used limited vocabulary. Moreover, they had not the knowledge of the main elements that construct any ideas. Use correct writing, the overall mechanics skills pre-test post-test Chapter Four: Results and Findings,

Discussion, Recommendations and Suggestions, types or constructing ideas.

They also could make use of electronic brainstorming tools in learning the English language. The results of the study showed that the electronic brainstorming has improved the study participants' EFL writing skills according to the results of the post administration of the EFL writing test compared to the pre-test. These improvements could be attributed to the effectiveness of social media as secure environment which helped the students write freely and express their points of view in the EFL topics' ideas. Furthermore, the EFL writing topics and activities were interesting and appropriate to the study participants' level. These activities ranged from the simple to the difficult to motivate the students to create more fruitful competition. In addition, these activities were graded from guided to free practice activities. The researcher introduced these activities through a wide variety of forms: linguistic, visual, auditory, read and write.

**- Conclusions :**

In the light of the findings of the present study, it can be concluded that the electronic brainstorming strategy is effective in developing the first year students' EFL writing skills and reducing their EFL writing apprehension. Thus, using the EBS developed both the EFL writing skills and its sub-skills among the study participants.

Accordingly, the starting point for this study was the increasing focus on the distinct role of the EBS in EFL learning and significant gains from its incorporation into EFL writing.

**- Recommendations and Suggestions :** Based on the results of the study, it was recommended that:

- Electronic Brainstorming Strategy should be implemented in teaching writing skills to the students at the first year of the university stage.
- EFL curriculum instructors/ faculty staff members should pay attention to the efficacy of using electronic brainstorming strategy in developing the English language in general and EFL writing skills in particular.
- EFL curriculum designers should pay attention to the use of different EBS tools when designing the English language courses.
- EFL curriculum designers should pay attention to emphasize the importance of EFL writing skills especially in the early educational stages to achieve fruitful gains in the following stages.

- EFL teachers should stress group work activities that let students communicate and interact with each other.
- EFL teachers should engage their students in different activities, before, during and after writing, such as: conversations, dialogues, group work activities, pair work activities and oral discussions .
- EFL teachers should train their students on how to use EBS to develop their writing skills.
- EFL teachers should help their students overcome their fears associated with expressing their own points of view and ideas.
- EFL teachers' roles in using electronic brainstorming should range from a motivator, a facilitator, a modernizer to an organizer.
- Students should be given the opportunity to search for various types of data before writing any topic.
- Feedback should be given at the end of each lesson.
- EFL teachers should encourage their students to use technology in developing their different EFL writing types.
- Students should be involved in a friendly learning environment to promote their special writing skills.
- Students should be given more time for practicing EFL writing skills.
- Students should engage in social and daily life topics to gain satisfaction, self-confidence and reduce students' writing anxiety and apprehension.
- The chosen EB techniques and material should suit student`s culture, interests, needs, and academic levels.
- Using social networks for developing EF L writing skills among secondary school students.
- The effectiveness of the electronic brainstorming in developing EFL productive skills among Faculty of Specific Education students.

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