Using an Infographics based Program to Develop Preparatory Pupils' EFL Productive Skills

Prepared by

Hend Nader Farouk Abdel-Halim

Supervised by

Dr.
Ahmed Hassan Seifeddin
Professor of Curriculum & Instruction
(TEFL), Faculty of Education,
Menoufia University

Dr.
Nahed Mohammed Ghoneim
Professor of Curriculum & Instruction (TEFL),
Faculty of Education, Menoufia University

Dr.
Rafik Said Elbarbary
Professor of Educational Technology and
Head of the Department of Curriculum and Instruction
Faculty of Education - Menoufia University

Abstract

The present study aimed at investigating the effectiveness of Infographics program to enhance EFL preparatory pupils' productive skills. The study followed the quasi-experimental one group design. The participants were 30 second year preparatory pupils at El-Horria School, at EL-Bajour, Menoufia Governorate during the first semester of the academic year 2021/2022. To identify the most important and required productive skills for the participants, a checklist of productive skills components was developed and validated by 10 jury members. A pre-post productive skills test was developed. A productive skill rubric was adopted to grade and analyze pupils' productive skills components. Findings of the study revealed that there was a statistically significant difference at 0.01 in the post administration of EFL productive skills test in favour of the post administration. Results showed that using Infographics improved EFL productive skills among El- Horria Preparatory school students.

Key words: Infographics, EFL productive skills

المستخلص

يهدف البحث الحالى الى التحقق من مدى استخدام الانفوجرافيك لتنميه المهارات الانتاجيه باللغه الانجليزيه كلغه اجنبيه لدى تلاميذ الصف الثانى الاعدادى. أستخدمت الباحثه التصميم الشبه تجريبى للقياس القبلى – البعدى مجموعه تجريبيه. وتكونت عينه الدراسه من ثلاثون تلميذا من تلاميذ الصف الثانى الاعدادى من مدرسه الحريه الخاصه لغات خلال العام الدراسى٢٠٢١–٢٠٢٢. تضمنت المواد والادوات المستخدمه: قائمه للمهارات الانتاجيه فى اللغه الانجليزيه كلغه أجنبيه مطلوبه لدى تلاميذ الصف الثانى الاعداى واختبارين للمهارت الانتاجيه فى اللغه الانجليزيه كلغه أجنبيه (يستخدم كاختبار قبلى اختبار بعدى) ومقياس للتصحيح الاختبارات ودليل المعلم لاستخدام الأنفوجرافيك. تم أختبار التلاميذ قبليا. قامت الباحثه بتدريب التلاميذ على استخدام الانفوجرافيك لتنميه المهارات الانتاجيه لديهم. تم أختبار التلاميذ بعديا ثم تم اجراء تحليل كمى للبيانات، واستخدات اختبار (ت) لمقارنه الدرجات القياسيه لأختبار القبلى والاختبار البعدى للمشاركين فى الدراسه. وقد اسفرت النتائج ان المهارات الانتاجيه لد تلاميذ الصف الثانى الاعداى فى اللغه الانجليزيه كلغه اجنبيه قد تطورت بشكل ملحوظ نتيجه لاستخدام الانفوجرافيك. لذلك، يمكن ان نستنتج ان أستخدام الانفوجرافيك كان فعالا فى تطوير المهارات الانتاجيه لتلاميذ الصف الثانى الاعداى فى اللغه الانجليزيه كلغه اجنبيه.

الكلمات المفتاحية: المهارات الانتاجيه – الانفوجرافيك

Introduction

Spoken and written languages are methods for communication. Writing is one of the most important skills in learning a new language. It is a productive skill in which writers produce language and communicate a massage in visual or tactical form. Since spoken language rely on communication, it is important for pupils to learn how to communicate correctly. People without language could communicate, but they could not influence one another. Both productive and receptive skills can not exist without other. Listening, speaking, reading, and writing are interrelated in a language learning environment. When learners start learning EFL, they are exposed to both categories of language skill. Receptive skills include understanding when learners listen and when they read. They receive the language and decode the meaning to understand the massage. Productive skills are also called active skills-mean the transmission of information that a language user produces in either spoken or written form.

Context and statement of the problem

The problem of this present study can be identified in the second year preparatory school pupils' poor mastery of the needed EFL productive skills that should be developed at this stage. This can be due to the traditional methods of teaching speaking and writing. Moreover, pupils rarely have real opportunities to practice the language. Therefore, pupils at the preparatory stage can't be even engaged in short conversations and can't use the language in real life situations.

To make sure of the study problem, a pilot study was conducted on 30 pupils of second year preparatory school pupils' at El-Horria Private Schools, El Bajour Educational Administration, Menofuia Governorate during the first semester of the academic year 2021-2022. The researcher used the EFL productive skills test .The results of the test showed that there is a lack in pupils' productive skills. Moreover pupils needed to be motivated to enhance and develop their EFL productive skills.

The problem of the study was more advocated by the results of previous related studies in the Egyptian context such as the studies of Ziane (2012); Aliakbari & Jamalvandi (2010): Oradee (2012); Goldring, Russsel & Cook (2003); Ali (2010); Foreeningen (2007); Lesgold (2011); and Hughes (2011). These studies stressed that the EFL productive skills were

neglected in the Egyptian preparatory schools. This may be attributed to various factors such as the overcrowded classes that have made teaching productive skills extremely difficult, the increased emphasis on the grammatical structures, and the limited assessment system in Egypt. This led the previous studies to shed the light on the importance of using new effective strategies in teaching productive skills at the classes to foster and enhance the students' performance.

Questions of the study

1. What are EFL productive skills required for second preparatory pupils?
2. How can infographics be used to enhance productive skills among second preparatory pupils?
3. What is the effectiveness of using infographics in developing EFL productive skills among second preparatory pupils?

Hypotheses of the study

The research hypotheses have been formulated as "There is a statistically significant difference between the mean scores of the study participants in the pre and post assessment of the EFL productive skills in favor of the post assessment".

Delimitation:

The present study will be delimited to the following:-

1. A sample of EFL productive skills that is required for second preparatory school pupils.
2. A group (N= 30) of second preparatory school pupils.

Definitions of Terms

EFL productive skills

McDonough and Shaw (2003) stated that, speaking involves expressing ideas and opinions, expressing a wish or desire to do something, negotiating or solving problems or establishing and maintaining social relations (p.133-134).

EFL Speaking Skills

Torky (2006) defined speaking as the learner's ability to express himself / herself orally, coherently, fluently and appropriately in a given meaningful context.

The researcher will adopt Torky's definition.

EFL Writing Skills

Writing is a complicated process to learn. Having mastery of it involves organization of ideas, selecting proper vocabularies and creating a style that suits the subject matter not just knowing grammatical rules (McKinly 2013).

The researcher will adopt Mickinly's definition.

Infographics

Infographics combine data with design to enable visual learning. This communication process helps deliver complex information in a way that is more quickly and easily understood (Smiciklas, 2012).

The present study will adopt (Smiciklas 2012) definition as it is the way to achieve the study's purpose.

Review of Literature:

Productive Skills

The productive skills are speaking and writing, because learners need to articulate words and write to produce language. Learners receive language by listening to conversation, music, and video and also by reading comprehension, newspaper, poem, book, etc. Then they move on to the next stage where they produce the language to express their thoughts by using productive skills. Speaking is an oral production of language. McDonough and Shaw (2003) stated that, speaking involves expressing ideas and opinions, expressing a wish or desire to do something, negotiating or solving problems or establishing and maintaining social relations. So, speaking is the oral process to produce language. On the other hand, writing is a productive skill in written mode. When we talk about writing there is usually two-way distinction of writing: institutional and personal writing.

Institutional writing includes textbooks, reports, applications, business correspondence whereas personal writing covers personal letters and creative writing.

Bozorgian (2012) indicated that the teaching of productive language skills is closely bound up with receptive skills as receptive work feeds production. Similarity, when learners produce a piece of language, whether spoken or written, and output becomes input. So, language production and reception are complementary and their relationship is a reciprocal one. Moreover, Bozorgian (2012), Ziane (2012), Motallebi and Pourgharib (2013) and Movahed and Karkia (2014) indicated that the EFL research has encouraged treating each communicative macro-skill in a separate-like-manner and so the interrelationship among these skills is not paid due attention.

Spoken and written languages are methods for communication. Writing is one of the most important skills in learning a new language. It is a productive skill in which writers produce language and communicate a massage in visual or tactical form. Since spoken language rely on communication, it is important for pupils to learn how to communicate correctly. People without language could communicate, but they could not influence one other.

For many people, mastering the speaking skill is the ultimate goal for acquiring the foreign language. Mastering the speaking skills gives the observer the impression that one is skilled at the other three skills. If teachers want to judge a learner, she/he judges him through his speaking skills. Speaking is one of the central elements of communication in EFL teaching. It can be summed that the competent speakers of English must understand that the nature and characteristics of spoken English differ from those of the written form (Roger, 2008; Aliakbari & Jamalvandi, 2010).

Kurum (2016) stated that speaking involves three areas of knowledge:(1) Mechanics (pronunciation, grammar, and vocabulary): using the right words in the right order with the correct pronunciation,(2) Functions (transaction and interaction): knowing when clarity of message is essential (transaction / information exchange) and when precise understanding is not required (interaction / relationship building), and (3) Social and cultural rules and norms (turn – taking, rate of speech, length of pauses between speakers, relative roles of participants): understanding how

to take into account who is speaking to whom, in what circumstances, about what, and for what reason.

Edwards & Thomas (2013) confirmed that the speaking process includes three distinct stages: before speaking, during speaking and after speaking. In the before speaking stage, the speakers decide what they are going to say, how they will say it and who will be listening. During speaking, the speakers have to consider various factors, e.g. being understood, tone of voice, using suitable vocabulary, non-verbal actions, managing listeners' reactions and responses, being able to recognize and repair any misunderstandings or communication breakdown. After speaking, the speaker might have to answer questions, clarify ideas, make adjustments, repair misunderstandings and explain any concepts not understood. They end by reviewing the process to clarify and confirm their own understanding.

Goh (2016) indicated that speaking is a vital process that involves dynamic interactions of mental, and social processes as the speakers always need to make decisions about what to say, which words are appropriate, and use their linguistic knowledge to convey and express their messages. Speakers need to have several crossed processes to express themselves, they need knowledge to construct utterances and encode to sounds and sound patterns. Speakers also need to have suitable methods through using various linguistic forms to engage listeners socially in the different situations.

Teaching speaking skills is not an easy a simple process of grammar and vocabulary learning or classroom conversations. It refers to different real interactions in people's daily life. Therefore, teachers' purpose of teaching should be reduced to enable students to monitor their knowledge of language components; such as grammar, vocabulary, and semantics. Oradee (2012) showed the importance of speaking as one of the language skills that enhance foreign language teaching and learning. The ability to speak is the most important need since it is the base for communication.

The aim of teaching speaking skills requires knowing what students really need to learn. So, Snow (2007) pointed out that fluency, natural expression and spontaneity is the top of language teaching aims. In addition, it was illustrated that developing children's consciousness of language vocabulary, enriching their verbal and oral wealth, enriching them to form a sentence using right structures and improving their production and accent

are the basic aims for teaching speaking skills in classrooms. To sum up, speaking is essentially required to develop especially for young learners to overcome any obstacles in learning speaking skills from beginning.

Ali (2010) and Hughes (2011) mentioned that good speaker should produce the expected patterns of specific discourse situations. They should also manage some elements such as turn taking, rephrasing providing feedback, or redirecting, students should choose the correct vocabulary. They describe item, rephrase or emphasize words to clarify the description. There are other skills and knowledge speakers should follow such as:

- Producing the sounds, stress patterns, rhythmic structures and intonations of the language.
- Using grammar structure accurately.
- Assessing the characteristics of the target audience.
- Selecting vocabulary that is understandable and appropriate for the audience, the topic and setting.
- Applying strategies to enhance comprehensibility, such as emphasizing keywords, rephrasing or checking for listening comprehension.
- Using gestures and body language.
- Taking into consideration the interaction and adjusting components of speech such as vocabulary rate of speech and complexity of grammar structures.

Isleem (2012) concluded that writing is more than a sequence of sentences or grammatical practices, through pupils could express their thoughts, feelings, aims, creativity and to communicate ideas. It is crucial in developing linguistics competence and concepts. Moreover, writing improved the structure, idioms, and grammar which in turn helped the non-native pupils to learn English language. Antonacci & O'Clallagha (2012) concluded that learning and teaching writing skills emphasize two basic aspects: Writing as a channel of teaching English as a foreign language, it supports the grammatical practices, word usage, punctuation, text organization, and subsidize language already granted and orally presented; Writing as a goal of teaching English as a foreign language to help learners develop and communicate in writing in a way which they might need in their future social, academic, personal, or practical lives.

Abd Elfatah (2015) & Abd El-Samad (2018) considered writing as a difficult skill which is directed and self-sustained cognitive activity for native and non-native learners as they should make balance between the content, organization of ideas, messages and information in understandable words, purpose, audience, vocabulary, punctuation, spelling and mechanics, the constraints of the topic, the intention of the writer, and the processes.

Writing is the ability to compose text effectively for different purposes and audience. It is a tool for communication and learning that allows us to document, collect and widely circulate detailed information. It also provides a means of expressing oneself and persuading others. Also, improving one's writing skills increase one's capacity to learn. Students who do not write well are at disadvantage because they lack an effective communication and learning tool (Astorm, 2007).

Writing is both a social and cognitive process. In the world outside the classroom, people write to communicate with an audience, drawing on their knowledge of content, strategies for planning and revising, and essential writing skill. Alsamadani (2010) defined it as a process of producing language rather than receiving and communicating a massage by linking signs on a page. It is a skill that requires certain mechanics to practice and master handwriting, copying or transcription and spelling. These mechanics are the first stages if writing. It involves several sub skills, some of these are related to accuracy, i.e. using the correct firms of language. It accurately involves spelling correctly; forming terms correctly; writing legibly; punctuating correctly; using correct layout; choosing the right vocabulary; using grammar correctly; joining sentences correctly and using paragraph correctly. It presents the sounds of language through visual symbols.

Foreningen (2007) indicated that writing has other functions than the communication of meanings to persons. It has a function of the creative through process of the learner and enabling the student to develop ideas. The teacher's role is to promote interest, learning and communication between students. It is a way of sharing personal meanings and covering meanings and entails a conscious mental effort involving the communication of a message.

Graham, MacArthur & Fitzgerald (2007) believed that students deserve the best writing instruction possible. The need for such instruction is based on four interrelated principles:

- **The first principle:** asserts that writing lets us communicate with others, allow us to maintain personal links with family, friends, and colleagues. Also, writing's power resides in its ability to convey knowledge and ideas as well as providing a useful tool for refining and extending one's knowledge about a special topic. It also provides a means for self-expression. While students need writing for communication, sharing knowledge, learning, and exploring feelings and beliefs, teachers use writing as a primary instrument to evaluate academic performance. Writing is essential to school success and das become a central component of daily life.

- **The second principle:** is that we need to do a better job in teaching writing. Persky, Daane & Jin (2003) stated that many students do not write well enough to meet grade-level demands in school. Findings from the two most recent writing assessments conducted by National Assessment of Educational progress revealed that an alarmingly high proportion of youngsters are not developing the competence in writing needed at their respective grade levels. Youngsters who do not learn to write well face many obstacles. Their grades are more likely to suffer, especially in classes where writing is the primary means of assessing progress. Their participation in community events, especially those involves communication through writing, may be hindered.

- **The third principle:** is that we know what skilled writers look like. We have a good idea of what students need to acquire to become skilled writers. Graham (2006) affirms that writing development is fueled by students' strategic behaviour, knowledge about writing, motivation, and mastery of text transcription skills. In addition, writing development is fueled in a social cultural way. Writers write for audiences. They write on the premises of the reader. They consider what effect they want to create and shape their writing to achieve that effect.

- **The fourth principle:** is that we have effective procedures for teaching writing. Goldring, Russel & Cook (2003) showed that a variety of effective practices enhance students' writing development. These interventions include teaching students to be more strategic when planning, drafting, or revising; constructing a supportive environment in which such processes are valued; developing instructional arrangements where students work together to support their writing efforts; setting clear and specific goals for writing tasks; using word processing and supporting software; teaching sentence construction via sentence combining; involving students inquiry activities centered on the process of writing; using good models of writing to enhance students' knowledge; and teaching basic text transcription skills such as handwriting and spelling.

Nunan (2004) stated some of principle's for teaching writing:
1. The teacher clarifies to his students' reasons for writing.
2. Provides many chances for students to write.
3. Makes helpful and meaningful feedback.
4. Clarifies for his/her students, how their writing will be evaluated.

Lesgold (2011) put some principles for effective writing instruction as follows:
1. Teach the strategies, skills, and knowledge needed to be a proficient writer explicitly and systematically.
2. Combine explicit and systematic writing instruction with extended experience writing for a purpose.
3. Teach foundational writing skills to the point that they know them explicitly.
4. Structure the instructional environment and interactions to motivate writing practice and persistence in learning new forms of writing.

Infographics

Internet has become accessible anywhere and at any time by mobile devices. Especially after the 90's, the rapidly developing voice, video, written communication and interaction opportunity reveal the web-based education concept (Su Tonga, 2015; Berber & Laborda, 2015). Therefore,

the teaching-learning process beyond the classroom walls began to occur in different environments. New designed materials and new learning activities compatible with these learning environments have emerged (Yıldırım, 2016). Also, visualization of information and data is a frequently used method in the teaching-learning process so that people can cope with rich and complicated situations in content. As a result, information becomes more understandable, debatable, accessible, and mostly manageable (Nuhoğlu Kibar & Akkoyunlu, 2015).

The use of infographics in education has become an indispensable tool of today' education system because Infographics tell content with story and visuals. However, educators do not have professional design competencies and knowledge to design new infographics, as well as high-quality infographics in the sector. Moreover, the advantages of sufficiently known by teachers

Nowadays, Infographics are emerged in every aspect of life by developing themselves in many areas such as books, magazines, presentations, advertising, social media etc. (Smiciklas, 2012; Borucu, 2015). Infographics are used throughout the child's education period. They are also used to perform different educational and instructional purposes. So, the aim of this study is to describe advantages and design principles of infographics according to new trends in education.

Information graphics can also convert complex data to an arranged and ornamented design, which can be modified in accordance with the preferences of users (Harrison & Reinecke, 2015). Furthermore, infographics can be supported by relevant text to enhance the perception of audiences (Bladon & Poulin, 2014). Infographics have been used widely through several areas one of these areas is education, which can be facilitated through infographic design for the benefit of students. In recent years, modern technology has shown the trend of becoming the basis of design education in three ways: by using networks, traditional methods, and infographics. The aesthetic side of infographics is crucial to introduce the components of design through interaction in a joyful manner. This task necessitates general knowledge from the designer instead of specialist knowledge on subjects (Gao & Ming, 2014). Furthermore, the materials that are utilized in the educational process vary, including multimedia elements such as images, audio files and videos. In this way, the information can be

transmitted to the students in an alternative way different from the traditional classroom and can be gained through visual means, which is one of the most significant forms of presenting information. This condition explains the importance of visualized information that can introduce many subjects in the educational environment in an organized manner by applying visual components. In addition, infographics enable multiple designs for the same information to suit different students' preferences. Visual communication by infographics can represent many pages in a simple way and can also reduce explanation effort by employing suitable components of the presented subject, such as graphs, diagrams, images and text in logical sequence. These properties of the infographic reflect the flexibility to modify visualized information in alternative forms. The second property is the ability to attach multimedia sources with visualized information such as related audios and videos (Yıldırım, 2016). According to research conducted in Jordanian public universities to find out the problems faced by students in six surveyed domains, the first major problem is instructional methods. The study recommended that a number of educational methods and programs be introduced to enable students to keep up with educational techniques and improve their achievements (Al-khawaldeh & Alkhrsha, 2015) So this paper attempts to introduce solution for Jordanian educational methods that serve the education system through evaluate the effect of infographic method considered as supported mean for educational purpose.

Research Method

This part of the research is to illustrate the research methodology that has been followed to investigate the effectiveness of using infographics to develop EFL productive skills among second year preparatory stage pupils. The methodology includes the following:

1- Participants of the study.
2- Research design.
3- Instruments and materials of the study.

Participants of the study

The participants of the present study consisted of second year preparatory school pupils at El-Horria Schools, EL-Bajour Educational Administration, Menofuia Governorate. Thirty students (n=30) participated in the study during the academic year 2021/2022.

Research design

The present research is a quantitative research. The quasi-experimental one group design was used to investigate the effectiveness of using infographics to develop productive skills among second year preparatory school pupils at El-Horria Schools.

Instruments and materials of the study

To achieve the purpose of this study, the following instruments and materials were prepared:

a) A checklist of EFL productive skills required for second year preparatory stage pupils.

b) EFL speaking tests (used as a pre and post test) and an analytic rubric for scoring them.

c) EFL writing tests (used as a pre and posttest) and an analytic rubric for scoring them.

d) A teacher's guide to describe the steps to be followed when using infographics to develop some EFL productive skills.

A) The Checklist of EFL Speaking Skills

The main aim of developing the checklist of EFL speaking skills is to determine the EFL speaking skills required for the second year preparatory school pupils. To validate the checklist of EFL speaking skills, it was submitted to jury members specialized in EFL curricula and methods of teaching (N=10) to identify the most suitable skills for the preparatory stage pupils. The checklist of EFL speaking skills was modified according to the jury members' opinions.

B) The Checklist of EFL Writing Skills

The main aim of developing the checklist of EFL writing skills is to determine the EFL writing skills required for the second year preparatory school pupils. To validate the checklist of EFL writing skills, it was submitted to jury members specialized in EFL curricula and methods of teaching (N=10) to identify the most suitable skills for the preparatory stage pupils. The checklist of EFL writing skills was modified according to the jury members' opinions.

C) The pre and post EFL speaking skills Tests

A pre and a post EFL speaking skills tests were prepared to investigate the effectiveness of using infographics to develop the EFL speaking skills among second year preparatory school pupils.

D) The pre and post EFL writing skills Tests

A pre and a post EFL writing skills tests were prepared to investigate the effectiveness of using infographics to develop the EFL writing skills among second year preparatory school pupils.

Description of the EFL speaking skills tests

The EFL Speaking pre-post-test (Appendix 3) was designed to measure the sub-skills. The test covered three main skills: accuracy, fluency, and vocabulary use. The following is the table of the EFL speaking skills tests' specifications.

Table (1) The EFL speaking skills tests' specification

Test items	Skills measured	Number of items	Q
1	Accuracy	Six items	Q1
2	Fluency	Three items	Q2
3	Vocabulary Use	Four items	Q3

Piloting the Test

The present study test was administrated to a sample of 30, second year preparatory school pupils in EL-Horria Preparatory School in EL-Bajour, AL-Menofia Governorate at the first semester of the academic year 2021-2022. The results revealed that the instructions and items of the test were clear. In addition, the topics were interesting and suitable for pupils.

Validity of the EFL speaking skills tests Face Validity

To measure the test face validity, the first version of the test was submitted to a panel of EFL specialists in EFL curricula and instruction: Faculty of Education (n=10) to evaluate each question in terms of covering the specified sub-skills. They are asked to state their opinions regarding the clarity of the test instruction, the difficulty level and length of the test and whether each item measures the aspects it is intended to measure. Most of the jury members accepted the test as it was suggesting that it does not need any modifications either by adding or omitting any of the test items.

However, two jury members suggested some changes in phrasing the questions. The jury members indicated that the test has clear instructions and is suitable for measuring what it is intended to measure.

Internal Consistency

To estimate the internal consistency, Person correlation coefficient between each main skill of the test and the total score was calculated.

Table (2) Pearson correlation between test main skills and the total score of the test

Skills	Accuracy	Fluency	Vocabulary use
Correlation	0.677**	0.711**	0.744**

Table (2) shows that the correction coefficient between the score of the participants in each skill of the test items and the total scores are significant at 0.01 level which shows that the test is valid.

Reliability of the EFL speaking skills tests

To estimate the EFL speaking test's reliability, the re-retest method was used. Pearson correlation coefficients are presented in the following table (3):

Skills	Accuracy	Fluency	Vocabulary use	The whole test
Correlation	0.8775**	0.830**	0.848**	0.895**

Description of the EFL writing skills tests

The EFL writing pre-post-test (Appendix 3) was designed to measure the sub-skills. The test consisted of two questions. Each question was assigned to measure sub-skills.

Piloting the Test

The present study test was administrated to a sample of 30, second year preparatory school pupils in EL-Horria Preparatory School in EL-Bajour, AL-Menofia Governorate at the first semester of the academic year 2021-2022. The results revealed that the instructions and items of the test were clear. In addition, the topics were interesting and suitable for pupils.

Validity of the EFL writing skills tests Face Validity

To measure the test face validity, the first version of the test was submitted to a panel of EFL specialists in EFL curricula and instruction: Faculty of Education (n=10) to evaluate each question in terms of covering the specified sub-skills. They are asked to state their opinions regarding the

clarity of the test instruction, the difficulty level and length of the test and whether each item measures the aspects it is intended to measure. Most of the jury members accepted the test as it was suggesting that it does not need any modifications either by adding or omitting any of the test items. However, two jury members suggested some changes in phrasing the questions. The jury members indicated that the test has clear instructions and is suitable for measuring what it is intended to measure.

Internal Consistency

Pearson correlation coefficient between the score of the participants in each skills of the test and the total score was calculated to estimate internal consistency. Table (4) presents these correlations.

Skills	Content	Accuracy	Fluency	Organization	Mechanics
Correlation	0.766**	0.698**	0.732**	0.733**	0.736**

Table (4) shows that the correction coefficient between the score of the participants in each skill of the test items and the total scores are significant at 0.01 level which shows that the test is valid.

Reliability of the EFL writing skills tests

To estimate the EFL writing test's reliability, the re-retest method was used. Pearson correlation coefficients are presented in the following table (5):

Skills	Content	Accuracy	Fluency	Organization	Mechanics
Correlation	0.877**	0.955**	0.800**	0.985**	0.835**

Rubric of the EFL productive Skills Tests

To score the participants' EFL productive skills, an analytic rubric was prepared and used to ensure the objectivity and the transparency of scoring the test. It is scored on a four points Likert scale ranging from "3" to "1" where "3" refers to the highest performance level, while "1" indicates the lowest performance. The rubric was submitted to a panel of faculty staff members specialized in EFL curricula and methods of teaching (N=10) to validate the rubric. The jury members indicated that the items are clear and accurate.

The Teacher's Guide

    The researcher prepared a teacher's guide that describes in detail how to use infographics to develop EFL productive skills for second year preparatory school pupils. Nine sessions were prepared. They lasted for two months with three sessions per week and the duration of each session was about 90 minutes. The first session was an introductory and orientation session and the rest of the sessions were for developing and consolidating the EFL fluency skills through using infographics.

Procedures of the study

To conduct the present study, the following steps were taken:

1- Reviewing the literature and previous studies related to EFL productive skills.
2- Preparing the tools and materials of the study. The tools included a pre-post test to measure pupils' EFL productive skills.
3- Submitting the pre-post-test to jury.
4- Modifying the pre-post-test validity and reliability according to jury's opinion.
5- Selecting the participants of the study at random and putting them in one group (an experimental group).
6- Pre-testing the experimental group.
7- Conducting the experiment where the experimental group students were taught using infographics.
8- Post-testing the experimental group.
9- Treating data statistically and interpreting the results.
10- Providing recommendations and suggestions for further research.

Findings of the study

    The finding of the present study is presented in the light of hypotheses of the study.

- **Hypothesis One**:

    "There are statistically significant mean differences between the study groups' mean scores in productive skills pre-post tests in favor of the post test."

- In order to validate this hypothesis, data had been described and summarized through calculating the mean, the standard deviation,

minimum and maximum of the experimental group on both the pre and post-test, as illustrated in the following table:

Table (6): Descriptive Statistics to the Degrees of the pre-posttests of productive skills.

	Implementation	N	Mean	Std. Deviation	Minimum	Maximum	Total degree
Productive skills	**Post test**	30	44.10	5.63	36	55	60
	Pre test	30	27.60	3.01	22	33	

Table (6) shows that the value of the Means of the post administration of productive skills was (**44.10**) which was higher than the Mean of the pre-administration which was (**27.60**).

This is represented graphically in figure (1)

Figure (1) Bar Chart of the Mean Scores of Teachers of the pre and post-test in the Productive skills.
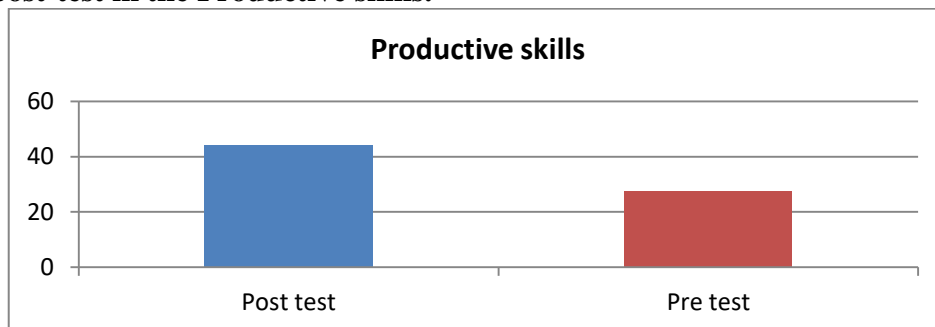
It is clear from the previous graphic representations that there are statistical difference between the scores of pre-test and post-test graphically.

To study the significance of the differences, t-value (Paired samples t- test) used for the difference between the mean scores of the two administrations; as illustrated by the following table (12):

Table (7): The T-Value to Signify the Difference between the Mean Scores of the Two Administrations

	Paired Differences		t-test	D.f	Sig	η^2	D	Effect size
	Mean	Std. Deviation						
Productive skills	16.50	5.73	15.76	29	Significant at (0.01)	0.90	2.93	Large

It is clear from the above table that the calculated value of "t " (**15.76**) was greater than the tabulated value of "t = 2.46" at 29 degrees of freedom and significant level "0.01"; which meant that the difference between the mean scores of the pre- post: tests had reached to the level of statistical significance.

- **Hypothesis Two**:

"**There are statistically significant mean differences between the study groups' mean scores in Writing skill pre-post tests in favor of the post test.**"

In order to validate this hypothesis, data had been described and summarized through calculating the mean, the standard deviation, minimum and maximum of the experimental group on both the pre and post-test, as illustrated in the following table:

Table (٨): Descriptive Statistics to the Degrees of the pre-posttests of Writing skill .

	Implementation	N	Mean	Std. Deviation	Minimum	Maximum	Total degree
Writing skill	Post test	30	21.30	4.53	12	28	30
	Pre test	30	15.47	2.33	11	19	

Table (8) shows that the value of the Means of the post administration of Writing skill was (21.3) which was higher than the Mean of the pre-administration which was (15.47).

This is represented graphically in figure (2)
Figure (2) Bar Chart of the Mean Scores of Teachers of the pre and post-test in the Writing skill.

It is clear from the previous graphic representations that there are statistical difference between the scores of pre-test and post-test graphically.

To study the significance of the differences, t-value (Paired samples t- test) used for the difference between the mean scores of the two administrations; as illustrated by the following table (9):

Table (9): The T-Value to Signify the Difference between the Mean Scores of the Two Administrations

	Paired Differences		t-test	D.f	sig	η^2	D	Effect size
	Mean	Std. Deviation						
Writing skill	5.83	4.41	7.24	29	Significant at (0.01)	0.64	1.35	Large

It is clear from the above table that the calculated value of "t " (**7.24**) was greater than the tabulated value of "t = 2.46" at 29 degrees of freedom and significant level "0.01"; which meant that the difference between the mean scores of the pre- post: tests had reached to the level of statistical significance.

- **Hypothesis Three**:

"**There are statistically significant mean differences between the study groups' mean scores on Speaking skill pre-post administrations in favor of the post administration.**"

In order to validate this hypothesis, data had been described and summarized through calculating the mean, the standard deviation, minimum and maximum of the experimental group on both the pre and post-administration, as illustrated in the following table:

Table (9): Descriptive Statistics to the Degrees of the pre-post administrations of Speaking skill .

Skill	Implementation	N	Mean	Std. Deviation	Minimum	Maximum	Total degree
Accuracy	Post -test	30	8.10	1.18	6	10	10
	Pre -test	30	4.03	1.52	2	7	
Fluency	Post -test	30	7.63	1.61	5	10	10
	Pre -test	30	4.30	1.62	2	7	
Vocabulary use	Post -test	30	7.07	1.44	5	10	10
	Pre -test	30	3.80	1.77	1	7	
Speaking skill	Post -test	30	22.80	2.67	16	27	30
	Pre -test	30	12.13	2.57	8	21	

Table (9) shows that the value of the Means of the post administration of Speaking skill was (**22.80**) which was higher than the Mean of the pre-administration which was (**12.13**).

This is represented graphically in figure (3)

Figure (3) Bar Chart of the Mean Scores of Teachers of the pre and post-administration in the Speaking skill .
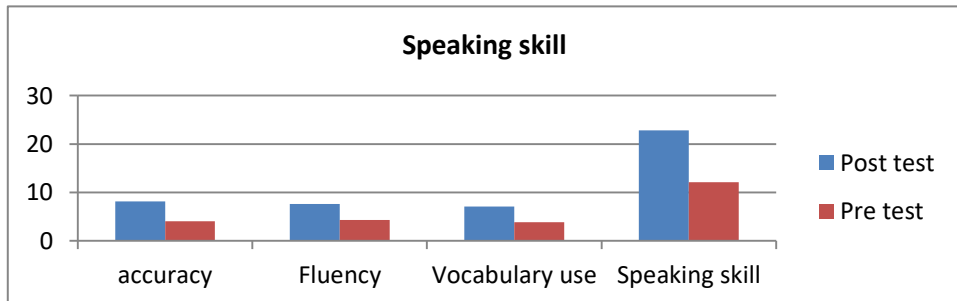
It is clear from the previous graphic representations that there is statistical difference between the scores of pre-administration and post-administration graphically.

To study the significance of the differences, t-value (Paired samples t-administration) used for the difference between the mean scores of the two administrations; as illustrated by the following table (16   ):

Table (10): The T-Value to Signify the Difference between the Mean Scores of the Two Administrations

Skill	Paired Differences		t-test	D.f	sig	$^2\eta$	D	Effect size
	Mean	Std. Deviation						
Accuracy	4.07	2.05	10.87	29	Significant at (0.01)	0.80	2.02	Large
Fluency	3.33	2.17	8.41	29	Significant at (0.01)	0.71	1.56	Large
Vocabulary use	3.27	2.16	8.27	29	Significant at (0.01)	0.70	1.53	Large
Speaking skill	10.67	3.92	14.92	29	Significant at (0.01)	0.88	2.77	Large

It is clear from the above table that the calculated value of "t " **(14.92)** was greater than the tabulated value of "t = 2.46" at 29 degrees of freedom and significant level "0.01"; which meant that the difference between the mean scores of the pre- post: administrations had reached to the level of statistical significance.

Discussion of the findings

The results could be attributed to different factors. The first factor is related to the nature of infographics that included some of aspects and tools for developing EFL productive skills. Firstly, infographics tools were helpful in providing credible content to help students improve writing the main idea and support it with specific information. Also, they help students to improve their speaking. Moreover, infographics tools helped the students to change their about learning English language in General and EFL productive skills in particular. This helped them to turn from passive learners into active ones. In addition, they helped the researcher to turn from lecturer into guide, monitor and facilitator.

Secondly, the environment of the present study was encouraging and less stressful because the nature of infographics tools, as it captured students' attention and interest. The whole environment was totally different from

traditional class. The researcher used the smart board to make students able to watch pictures and slideshow clearly. In addition, the researcher spread of humor among the students to lessen burden of the lesson and free them from the tension and worry. Working in pairs and groups helped them to write and speak freely, learn from each other.

The use of infographics tools allowed students to learn inside and outside classroom. Moreover, they could ask the researcher at any time about any misunderstood points since the researcher and the students could interact using infographics. In terms of appearance, most of students were familiar for all the students. But after practice, they could use infographics and benefited from its features that helped the students to collaborate with each other.

Conclusion

Based on the findings and results of the study, it can be concluded that EFL productive skills of the participants of the present study were developed as a result of using infographics tools. The effectiveness of this treatment may be due to depending on some of the new technologies that have gained prominent importance recently.

Recommendation for Further Research

The present study can offer the following recommendation based on its findings:

1. Teachers should be trained on the use of infographics.
2. Teachers should provide students with different topics to write on extensively, not only the topics they study in curriculum.
3. Infographics tools should be implemented in teaching EFL proudictive skills to students at the secondary stage.
4. Teacher should be turned from being teacher-centered to learner-centered in which learners become more involved in and responsible for their learning and become self-autonomous.
5. Teachers should provide students with varieties of enrichment activities of different levels to enhance students' EFL productive skills.
6. School should be provided with access to the internet inside the classroom.
7. Teachers should train students enough in different types of infographics, for producing the language orally and in writing.

References

- Abd EL Fattah, S.(2015). The Effectiveness of a Task- Based Instruction program in developing the English Language Speaking Skills of Secondary Stage Students. Diss. Ain Shams University Women's University,

- Abd El-Samed,M.(2018). The Effectiveness of Story Retelling Strategy in Developing some English Speaking Skills of Secondary Students. Journal of Faculty of Education,Banha Universty. 116(3), 1 – 22

- Ali, H. S. (2010). The Effectiveness of a Self- efficacy based program for developing EFL Oral oral communication skills among prospective teachers . Unpublished Master thesis . Faculty of Education , Benha University.

- Aliakbari,am & Jamalvandia, B.(2010). The Impact of 'Role Play' on Fostering EFL Learners' Speaking Ability; a Task-Based Approach. Journal of Pan-Pacific Association of Applied Linguistic, 14(1),15-29.

- Al-khawaldeh, S. S., & Alkhrsha, S. F. (2015). Problems of Jordanian public universities' students. A survey study. International Journal of Education, 7(4), 120- 137. https://doi.org/10.5296/ije.v7i4.7779

- Alsamdani,H.A.(2010). The relationship between Saudi EFL students' Writing Competence, LI Writing proficiency, and self-regulation. European Journal of Social Science. 16(1),53-63.

- -Antonacci, Patricia A. and Catherine M. O'Callaghan.(2012). Promoting Literacy Development. North America. Sage Publications . listening. London. Sage publication.

- Astrom, K.J. (2007). Advanced PID Control. ISA—The Instrumentatio ,Systems, and Automation Society, Research Triangle Park, NC, 2005.

- Berber, A., & Laborda, J., G. (2015). Turkish teachers' nd students' perceptions towards computer assisted testing in comparison with Spanish teachers' and students' perceptions. World Journal on Educational Technology. 7(2), 99-106.

- Bladon, B., & Poulin, E. (2014).Crash Course IN Infographics. Easelly. https://easel.ly/ebook/ crashcourseinfographics/

- Borucu, A. (2015). Güzel Sanatlar Liselerinde Grafik Dersinin İşlenişinde İnfogragik'in, Öğrenme Yöntemine

- Bozorgian,H.(2012). Listening Skills Requires a Further Look into Second/Foreign Language Learning. International Scholarly Research Network ISRN Education, Article ID 810129,10 pages doi.10.5402/2012/810129.

- Bygate,M.(2002). "Effects of Tasks Repetition on the Structure, and control of Oral Language". In M.Bygate, p.skehan and M.Swain.(Eds.)Researching Pedagogic Tasks. Second Language Learning Teaching and Testing. (pp.23-49), London. Longman.

- Davis, M., & Quinn, D. (2014). Visualizing Text. The New Literacy of Infographics. Reading Today, 31(3), 16.

- Edwards, J. & Thomas, B. (2013). Speaking and listening resource book. Australia. Department of education.

- Foreingen,S(2007). The Art of Writing and Speaking. A valiable at http.//www.Link512.com

- Gao, R., & Ming, Y. Z. (2014). Infographics applied in design education. In 2014 IEEE Workshop on Advanced Research and Technology in Industry Applications (WARTIA) (pp. 984-986).

- Goh,C.C.M.(2016). Teaching speaking in W.A. Renandya & H.P. Widodo (Eds.), English language teaching today, the language classroom (pp.143-159). Singappore. SEAMEO Regional Language Center.

- Goldring, A., Russell, M., & Cook, A. (2003). The effects of computers on student writing. A meta-analysis of studies from 1992–2002. Journal of Technology, Learning, and Assessment,2, 1–51

- Graham, S., MacArthur, C., & Fitzgerald, J. (2007). Best practices in writing instruction. New York. Guilford Press.

- Graham,C.R.(2006). Handbook of blended learning. Global perspectives, local designs. San Francisco. Pfeiffer publishing. Task-centered language assessment in language learning. The promise and the challenge. Assessment in TBLL.

- Harrison, L, & Reinecke, K. (2015). "Infographic Aesthetics." Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems - CHI '15 (2015). doi.10.1145/2702123.2702545.
- Hughes,R.(2011). Teaching and researching speaking. London. Pearson Longman.
- Isleem,H.(2012). "A Suggested Program Based on Individualized Activities for Developing Palestinian Sixth Graders' Writing Skills." Unpublished M.A. thesis,Islamic Univeristy-Giza,Palestine.
- Kurum, Y. E. (2016). Teaching Speaking Skills .Retrieved from. https://www.researchgate.net/publication/312538107.
- Lesgold,A.(2011). Improving adult literacy instruction. developing reading and writing. National Academies press, pp. 3-28.
- McDonough, J. &Shaw, C. (2003). Materials and Methods in ELT. Oxford OX4 1JF. Black well Publishers Ltd.
- Mckinley, J. (2013). Displaying Critical Thinking in EFL Academic Writing. Jornal of Language Teaching and Reasearch, 44 (2) p 195-208.
- Motallebi,S. & Pourgharib,B.(2013).The Impact of Audio Stories (Listening Skills) on Pronunciation of EFL Learners. Journal of Language Sciences & linguistics, 1(1),1-6.
- Movahed,R. & Karkia,P.(2014). Reading/Listening & the 4/3/2 on EFL Students' Speaking Skills. International Journal of Linguistics, 6(1), 53-66.
- Nuhoğlu Kibar, P., & Akkoyunlu, B. (2015). Eğitimde Bilgi Görselleştirme. Kavram Haritalarından İnfografiklere. In Eğitim Teknolojileri Okumaları, (pp. 271–289).
- Nunan,D.(2004).Task-based Language teaching. Cambridge. Cambridge University Press.
- Ordaee,Thanyalak.(2012). Developing speaking skills using three communicative Activities. (Discussion, problem-Solving, and Roleplaying). International journal of Social Science and Humanity, Vol.2, No.6.

- Persky, H. R., Daane, M. C., & Jin, Y. (2003). The nation's report card. Writing 2002 (Statistical Analysis Rep. No. NCES 2003-529). Washington, DC. NCES
- Smiciklas, M. (2012). The Power of Infographics. Using Pictures to Communicate and Connect with Your Audience. The power of infographics. https.//doi.org/10.4324/9780203075609.
- Snow,C.E.(2007). Research overview. The impact of the SIOP model on middle school science and Language Learning. Retrieved From.http.//www.cal.org/create/downloads/ReasearchOverview-SIOPSscience.pdf
- Su Tonga, E. (2015). Öğretmen Adaylarının Teknolojileri Öğrenme Faaliyetlerinde Kullanma Sıklıklarının İncelenmesi. Yüksek Lisans Tezi, Gazi Üniversitesi, Ankara.
- Torky, S. (2006). The Effectiveness of a Task-Based Instruction Program in Developing the English Language Speaking Skills of Secondary Stage Students. MS thesis. Ain Shams University.
- Yıldırım, S. (2016). Infographics for educational purposes. Their structure, properties and reader approaches. Turkish Online Journal of Educational Technology, 15(3), 98–110.
- Ziane,R.(2012). The Role of Listening Comprehension in Improving EFL Learners' Speaking Skills. Case Study. Second Year Students (LMD) at Biskra University. Avialble at. http.//dspace.univ-biskra.dz.8080/jspui/bitstream/123456789/4590/1/mimior.pdf