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# مجلة البحث العلمي في التربية

مجلة محكمة ربع سنوية

العدد 9 المجلد 23 2022

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مجلة البحث العلمي في التربية (JSRE)

دورية علمية محكمة تصدر عن كلية البنات للآداب  
والعلوم والتربية - جامعة عين شمس.

الاصدار: ربع سنوية.

اللغة: تنشر المجلة الأبحاث التربوية في المجالات  
المختلفة باللغة العربية والإنجليزية

مجالات النشر: أصول التربية - المناهج وطرق  
التدريس - علم النفس وصحة نفسية - تكنولوجيا التعليم  
- تربية الطفل.

الترقيم الدولي الموحد للطباعة ٢٣٥٦-٨٣٤٨  
الترقيم الدولي الموحد الإلكتروني ٢٣٥٦-٨٣٥٦

التواصل عبر الإيميل

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## Effectiveness of the Frayer Model Plus in Developing Secondary Stage Students' Translation Skills

Dr. Hager Gamal Ahmed Labib al-Tonsi\*

### Abstract

The research examined the effectiveness of the Frayer Model Plus in developing secondary stage students' translation skills. Research participants were 50 first year secondary stage students randomly selected and equally assigned to a control group and an experimental one. Both groups were pretested and post tested on the Translation Test, developed by the researcher. The experimental group received the suggested translation program based on the Frayer Model Plus, while the control group were taught the same translation texts traditionally. Both groups received 18 translation sessions. Findings of the data analysis revealed that the value of the Independent-Samples "t" test for the overall translation skills was (16.46), and the experimental group exceeded the control one on the post administration of the Translation Test. The research results also showed the effectiveness of the suggested program based on the Frayer Model Plus in developing the participants' translation skills due to the huge of effect size value for the suggested program ( $d=5.63$ ).

**Keywords:** *Frayer Model Plus, translation skills, secondary stage students, EFL*

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## فاعلية نموذج فراير بلس في تنمية مهارات الترجمة لدى طلاب المرحلة الثانوية

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### المستخلص

استهدف البحث الحالي دراسة فاعلية نموذج فراير بلس في تنمية مهارات الترجمة لدى طلاب المرحلة الثانوية. تم اختيار ٥٠ طالبة في الصف الأول الثانوى عشوائيا، من إحدى المدارس الحكومية، للمشاركة في البحث. تم تقسيم الطلاب بالتساوى إلى مجموعة تجريبية و أخرى ضابطه. كما تم تقديم برنامج مقترح في الترجمة، من اللغة الانجليزية الى اللغة العربية و العكس ، قائم على نموذج فراير بلس للمجموعه التجريبية فقط، بينما درست المجموعه الضابطه نفس المحتوى بالطريقه التقليديه. و استمر تدريس الترجمة لمجموعتي البحث لمدة ١٨ حصة دراسية . تم تطبيق اختبار الترجمة ، من اعداد الباحثه، تطبيقا قبليا و بعديا بعد التأكد من صدقه و ثباته. أوضحت نتائج اختبار "ت" لعينتين مستقلتين (ت=١٤,٢٦) تفوق طلاب المجموعه التجريبية على أقرانهم فى المجموعه الضابطه فى التطبيق البعدى لإختبار مهارات الترجمة. كما أوضحت نتائج التحليل الإحصائى للبيانات فاعلية البرنامج المقترح القائم على نموذج فراير بلس فى تنمية مهارات الترجمة لدى طالبات المرحلة الثانويه، حيث كان حجم الأثر للبرنامج المقترح كبير (d=5.63).

**الكلمات المفتاحية:** نموذج فراير بلس، مهارات الترجمة، طلاب المرحلة الثانوية، اللغة الانجليزية كلغة أجنبية.

## Effectiveness of the Frayer Model Plus in Developing Secondary Stage Students' Translation Skills

### Introduction

Translation is communication of meaning from a language to another. The target text should be equivalent to the source text and should reflect its cultural and linguistic features. The translator expresses the original message comprehension in the translated text. The Frayer Model Plus is a graphic organizer used to help students portray the definition, characteristics, examples, and non- examples of different words. It enables students to select the accurate words in the target language. Teaching translation in the Egyptian schools is a difficult task and the current research tries to highlight discuss teaching translation in EFL classrooms and examine the effectiveness of the Frayer Model Plus in developing secondary stage students' translation skills.

Translation means transferring implicit and explicit meaning of the source language to the target language. It is the reforming of the source text in an equivalent text in the target language (Farahani et al.,2019). Translation refers to interlinguistic and intercultural communication where the translator conveys the cultural context of the target text (Awal et al.2011). It is the process of transferring the source text comprehension to a target text expression according to the purpose of translation and the characteristics of the readers of the target text (Pham, 2017).

Teaching translation focuses on teaching vocabulary, grammar, idioms, and figures of speech. Then, teachers introduce the translation criteria, compare different sentence structures, provide examples of translation techniques, and offer the reference answer. Therefore, teaching translation needs to attract students' attention through informing specific translation goals, presenting stimuli, and providing feedback(Liang& Li,2018). Students connect translation to the exams that depend on accuracy and equivalence, consequently they stick to the dictionary and neglect searching for new interpretation. Teachers should encourage students to judge their performance in the process of selecting words from counterparts (Liu et al., 2018).

The Frayer Model is a graphic organizer that students use in EFL classrooms to identify the meaning of different words and expressions. The model is used to activate students' background knowledge before any language task, monitor their use of vocabulary during the task, and assess vocabulary acquisition by the end of the task. The model exposes students to words in different meaningful contexts where they fill in the model to clarify definitions, characteristics, examples, and non-examples of words (Hunt et al., 2013). Graphic organizers are visual tools used to help students identify and recall the meaning of words included in a text. They offer visual representation of the relation between the meaning of a specific word and other related words (Dazzeo & Rao,2020).

The role of translation in the foreign language classroom is neglected since the student book and workbook do not include activities on translation. The translation question in the exam depends on the use of dictionary and focuses on the equivalence of the target and source texts (Skopečková,2018). The absence of specific learning objectives, teachers' lack of motivation, and insufficient translation topics in the syllabus are major problems to be solved. In the secondary stage, students need effective strategies to acquire and use the new vocabulary (Dazzeo & Rao,2020).

### **Research Problem**

EFL students in Egypt suffer from translation anxiety and inability to identify strategies to solve translation problems (Ghaly, 2019). Teaching translation in EFL classrooms in Egypt does not have clear objectives. Teachers focus on translation as a product and neglect the process (Mahmoud & NourEldin, 2021). Although the New Hello for first year secondary stage, the formal students' textbook, does not include specific activities on translation, the specifications of the English exam paper include two questions on translation: translate into Arabic and translate into English. The Websites [www.newhellowforegypt.com](http://www.newhellowforegypt.com) and [www.ekb.eg](http://www.ekb.eg) include online exercises on translation but teachers do not integrate them in the EFL sessions.

The researcher developed and administered a Translation Test to 20 first year secondary stage students in October 2021. The test included three short texts that students translated from English to Arabic and three other short texts to be translated from Arabic to English. Results showed that 70 % of the

students cannot offer equivalent and accurate translated texts. The problem can be stated as follows: First year secondary stage students lacked the basic translation skills.

### **Research Purpose**

This research aimed to examine the effectiveness of the Frayer Model Plus in developing first year secondary stage students' translation skills.

### **Research Questions**

- What are the translation skills suitable for first year secondary stage students?
- What are the features of a suggested program based on the Frayer Model Plus to develop first year secondary stage students' translation skills?
- What is the effectiveness of the suggested program in developing first year secondary stage students' translation skills?

### **Research Significance**

- Developing first year secondary stage students' translation skills.
- Offering a program for teaching translation in the EFL classroom.
- Paving the way for future research on translation skills and the Frayer Model Plus according to the findings of the study.

### **Research Delimitations**

- Participants were delimited to first year secondary stage students at a public school in Helwan.
- The first term of the academic year 2021/2022, from October 17 to December 19, 2021
- The following translation skills: Transferring the source text information, using appropriate style, using accurate writing mechanics, finding equivalents, and producing readable translation.

## Research Terms

### The Frayer Model Plus

The Frayer Model Plus is a graphic organizer used for word analysis and vocabulary building. The chart of the Frayer Model Plus consists of four squares to cover definition, characteristics, examples, and non-examples of a specific word and a rectangle for writing a sentence on it (Alashry et al.,2018).

In the present research, the Frayer Model Plus referred to the steps that enabled the secondary stage students to offer accurate equivalent translated texts. Students identified definitions, characteristics, examples, and non-examples of the words of the source text. Then, they wrote a sentence describing each word in the target language to reflect its cultural context.

### Translation skills

A skill is the ability to perform an activity. Translation skills are accuracy, finding equivalents, shifting equivalents, and cultural context awareness. Accuracy means conveying the original message completely in the target text without omissions or additions. Finding equivalents means the correct use of lexical and syntactic items in the translated text. Shifting equivalents means using correct relative clauses, verb forms, and parallel structures. Finally, cultural context awareness means reflecting the awareness of the cultural context of the translated text (Richards & Schmidt, 2010).

In this research, translation skills were the skills developed by the Frayer Model Plus based suggested program. They were five translation skills: Transferring the source text information, using appropriate style, using accurate writing mechanics, finding equivalents, and producing readable translation.

### Review of Literature and Related Studies

Translation is a tool for communication and information sharing; It is essential for English language learners to facilitate communication with native speakers. Translation is based on the linguistic and cultural knowledge of the source and target languages (Kuşçu& Ünlü, 2015). The dual theory, suggested by Newmark in 1981, focuses on the semantic and communicative methods of translation. The translated text is the outcome of the integration of semantic and communicative components. Translation focuses on the relation between

thoughts, meanings, and contexts. The translator uses different techniques to solve translation problems, such as modification, cultural equivalence, compensation, lexical synonymy, transposition, expansion, and reduction (Madkour,2016).

Translation is the complex process of expressing appropriate meaning of a word or sentence linguistically, semantically, and pragmatically in a different language. Translation is communication between the source and target languages. The original language of the source text is changed to the target language of the translated text. The new text, written in the target language, should be equivalent to the source text (Biloveský & Laš, 2018). Translation requires adjustments in the source text through using strategies such as omission, addition, and replacement. Translators should be able to select the appropriate translation strategy in every context (Madkour,2016).

The different uses of the same words in different disciplines offer flexibility in translation. Translators depend on linguistic analysis to offer accurate translation. Linguistic analysis covers morphological, syntactical, and semantic structures. Morphology focuses on the internal structures of words and how to be modified. Syntax describes how to rewrite the words to form grammatical sentences in the target language. Semantics clarifies the meaning of words and phrases to be conveyed in the target language (Kohil & Laribi, 2016)

There are different approaches to translation: linguistic, pragmatic, process-oriented, and functionalist. The linguistic approach, proposed by Vinay and Darbelnet in 1996, describes translation as a process of substituting a text in one language for a text in another language. According to this approach, there are two types of translation: calique and oblique. Calique translation means direct correspondence between the two languages without semantic or grammatical restructuring. Oblique translation highlights the structural and conceptual differences between the two languages and the needed structures for translation (Petrescu,2015).

The Pragmatic approach, developed by Paul Grice in 1961, focuses on the intended meaning of the source text and how to be clear in the target text. Translation is a bilingually mediated communication between two texts. Pragmatic adaptation is the modification of the source text according to the target language environment (Petrescu,2015). There are four types of pragmatic

adaptation: addition that means adding a punctuation mark, word, phrase, or clause; omission refers to the deletion of any of the previously mentioned elements; substitution means replacement of some elements of the text by others; and change of order refers to the rearrangement of elements (Kosonen, 2011).

The process -oriented approach, developed by Gile in 1995, focuses on communication, quality, and comprehension. This approach overcomes the weaknesses of the product approach which focuses on trial and error. It encourages the application of different translation strategies, linguistic flexibility, and problem solving (Petrescu, 2015). The Functionalist approach, developed by Reiss and Vermeer in 1984, changes the dictionary-oriented translation as the translated text should function as the source text (Kuşçu & Ünlü, 2015).

Károly (2014) used a functional theoretical framework to develop students' translation. Participants were 12 second-year students enrolled in the Department of English at a pedagogical college in Hungary. The research was based on a translation assignment, in which the students had to translate three different texts with topics related to the EU. Participants received three lectures on theoretical issues related to translation and three seminars on translating EU-texts. Results showed that the functional approach developed the students' translation skills. They were able to manage the relationship between text and context based on their cultural and textual awareness. To conclude, functionalism views translation as a socio-cultural act of communication. It focuses on the cultural context of the target text and the translator is an intercultural communicator of the two languages.

Teaching translation in the EFL classroom requires students practice of meaning transfer between two languages. Teachers should develop students' translingual and transcultural competences of the source and target languages (Kramsch, 2014). Teaching translation requires developing students' life-long learning skills since students become confident to work independently and assess their performance. Integrating students' self-assessment and the teacher's feedback on the translated text increases students' motivation, self-awareness, responsibility, and autonomy (Károly, 2014).

Editing and revising the translated text are essential parts of the translation task. The translated text should align to the norms of the target language. Although there is not an agreed translation scoring model, many researchers adopt Waddington's Scoring Model Method C developed in 2001(Askari & Rahim,2017). In this model, the translated text is scored on five levels of two dimensions: accuracy of transferring the content of the source text, and quality of expressing the target text. Also, the validity and reliability of the model were assessed in previous research (Farahani et al.,2019; Wæraas,2021).

Translation competence is the implicit knowledge of the translation skills. Pragmatic knowledge means correct use of linguistic functions and speech acts. Socio-linguistic knowledge is the knowledge of the conventions needed to translate language acts in different contexts. Grammatical-lexical knowledge is the knowledge of vocabulary, morphology, syntax, and phonology used to transfer meaning. Extra-linguistic competence is knowledge of the source and target cultures. Finally, instrumental competence refers to the ability to use dictionaries, encyclopedias, and electronic corpora (Zou, 2015).

Gural et al. (2015) adopt another classification of translation competences. Communicative competence is the ability to reflect the meaning of different types of texts. Linguistic competence is the ability to analyze the language system and its functions. Sociolinguistic competence refers to achieving the communicative purpose of the text. Text-forming competence means writing different types of texts in the two languages. Strategic competence is using techniques for overcoming the lack of knowledge. According to Mahmoud and NourEldin (2021), translation depends also on digital competence which means using different online searching tools to find meaning.

El-Garawany(2021) recommends that English majors at faculties of Education should master these translation skills: analyzing the source and target language cultures, using accurate vocabulary; grammar; and style, employing translation shifts, and selecting equivalents. Antar (2010) suggests the following translation skills for EFL teachers: expressing the relationship between ideas, using correct sentence structures in the target language, transmitting the ideas clearly in the target language, identifying the cultural expression in the target language that best represents the original, and using dictionaries for looking up the meanings of words.

The differences between the source and target languages cause some translation problems. Pragmatic translation problems reflect the communicative situations of the source and target texts, such as the author's intention, the audience, and the place and time of the source text. Convention-related translation problems highlight the cultural differences of the two languages. Linguistic translation problems are caused by the structural differences between the two languages of translation. Text translation problems reflect the special features of the source text language, like figures of speech and idioms (Nord,2005).

English has a nominal sentence structure: Subject(S), verb(V), and compliment(C). In contrast, Arabic has three-word orders: VSC, SVC and VCS which may change meaning in translation. Arabic language has definite articles and does not have indefinite articles. English has definite and indefinite articles. English does not have any grammatical genders, whereas Arabic has grammatical genders (Akan et al.,2019). The tenses of the Arabic language do not match those of the English language. Thus, overgeneralization, first language interference, and inaccurate grammatical rules are common errors in translation. The Arabic present tense indicates the English equivalent of the present continuous and the present simple tenses, hence the present simple tense is overused in English (Muftah & Rafik-Galea, 2013).

Sheir et al. (2016) highlight different types of students' translation errors. Grammatical errors mean incorrect use of prepositions, articles, reported speech, adjectives, relative clauses, irregular verbs, and tenses. Syntactic errors refer to incorrect sentence structure, word order errors, and noun- pronoun disagreement. Lexical errors refer to the wrong choice of words in the context. Semantic errors refer to errors in the meaning of sentence transfer. Organization errors include inappropriate thesis, transition words, and flow of ideas. Substance errors appear in punctuation, capitalization, and spelling.

Translation activities should be prepared to achieve specific objectives, like development of vocabulary and grammar or effective communication. Authentic translation texts should satisfy students' needs (Yakout,2021). Translation activities are often administered through three stages. The pre-translation stage aims to get students' attention and activate their prior knowledge on the topic. Translation activities depend on the integration of different language skills, for example students read the text and discuss its

content before translation. Post- translation activities enable students to correct mistakes and solve comprehension problems. They measure students' achievement of the objectives through answering some questions on the text. Students can be offered a reference translation of the text to assess their performances and discover the different structures of the two languages (Leonardi, 2010; Yakout,2021).

To conclude, the process of translation can depend on a three- phase cognitive approach. The first phase is determining the linguistic features and functions of the text. The second phase is identifying the author's message delivered in the text. The final phase is applying different mental activities for meaning construction. Instructors should explain the linguistic difficulties of the source texts and the translation strategies required (Madkour,2016).

Mahmoud and NourEldin (2021) explored the effect of using an online collaborative translation technique based on Google Classroom on developing translation competence and attitudes towards online collaboration for English majors at a Faculty of Education in Egypt. Participants were divided into a control group and another experimental one. Both groups received a pre-post translation test and an attitude questionnaire. The experimental group received a five- week training on translation using the online collaborative technique, while the control group received traditional lectures on translation. Findings of the research revealed that the experimental group outperformed the control one in the post administration of the translation test and attitude questionnaire. It was concluded that using the online collaborative translation technique based on Google Classroom developed English majors' translation competence and their attitudes towards online collaboration.

Marghany (2016) highlights that the availability of technology affects Egyptian EFL students' selection of the target language equivalents of the source text, such as using 'university cities' instead of 'students' hostels. Awal et al. (2011) compared between the effect of using the traditional teaching tools and electronic devices on developing EFL students' translation skills. Participant were two translation classes divided into two experimental groups; each group consisted of 45 students. The first experimental group received a course of advanced translation using the traditional blackboard and paper dictionaries. The second experimental group received the same course using PowerPoint slides and digital dictionaries. Both groups answered a satisfaction questionnaire and

translation test. The results of the traditional group outperformed those of the electronic one in the translation test, while the students in the electronic group were more satisfied about the course than their peers in the other group.

Alshaikhi (2022) examined the effect of using translation competences in developing students' English vocabulary. Participants were 90 undergraduate males in the department of Languages and Translation at the University of Tabuk who received a 14- week program based on translation competences. The results of the pre and post administration of the vocabulary test revealed that using the translation competences developed students' vocabulary. Graphic organizers are proved to be effective vocabulary instruction tools.

The Frayer Model was designed by Dorothy Frayer and her colleagues in 1969 at the university of Wisconsin to help students learn new concepts by focusing on synonyms and antonyms (Greenwood, 2010). Then, the model was modified by Graves in 1986. The modified model has four main steps: define the concept, identify its essential characteristics, distinguish between the concept and other similar concepts, and justify the examples and nonexamples of the concept. Teachers can provide examples and non-examples, then ask students to classify them and explain their reasons.

Wood et al. (2016) developed the Frayer Model Plus where they added a new cell for writing a sentence on the word based on the mentioned definitions, characteristics, examples, and non-examples of it. The Frayer Model helps students organize information in a graph. Teachers can define the word or concept, ask students to identify the examples and nonexamples of it, then determine its characteristics. The Frayer Model Plus includes a cell for drawing the word or using it in a sentence to relate students' prior knowledge to the authentic word use. Students use critical thinking to identify the meaning of unfamiliar vocabulary. Integrating technology in creating the Frayer Model increases students' engagement while learning new vocabulary. The Frayer Model depends on inquiry and hypothesis testing; thus students need to test the hypotheses and discuss their reasons to complete the model (Dazzeo & Rao,2020).

Graphic organizers are used to define main concepts and present the relations to other concepts. Hence, they maintain students' interactivity and engagement. The Frayer Model enables students to understand the meaning of

unknown words and integrate them in authentic situations (Alashry et al.,2018). El-Garawany (2021) attempted to investigate the effect of using Wordfast Anywhere computer-assisted translation tool on developing English majors' EFL translation skills. Participants were 48 second year English majors at a Faculty of Education in Egypt. They were divided equally into a control and experimental groups. Participants in both groups received a pre- post EFL translation test. The experimental group received a seven-week intervention based on Wordfast Anywhere, while the control group received regular instruction. Results revealed that students of the experimental group outperformed those in the control group in the EFL translation test. The Wordfast Anywhere proved to be effective in developing English majors' EFL translation skills.

The Frayer Model consists of a word or concept, its essential characteristics, definition, examples, and non-examples (Eyers et al.,2020). The model requires students to define a target word, identify characteristics and facts for the word, and generate synonyms and antonyms of it. The information is written on a graphic organizer to offer a visual representation. Students can complete the Frayer Model Plus individually or in groups (Eyers et al.,2020). The Frayer Model Plus provides a visual display that may include symbols and pictures of the concept and its characteristics (Lin et al., 2012).

The Frayer Model Plus is used in teaching words or concepts through highlighting the interrelated vocabularies (Thomas, 2016). It can also be used to measure students' acquisition of vocabulary revealed in descriptions, examples, and nonexamples. It helps students understand concepts in the form of a graphic organizer to determine the definition and description of a word or concept (Reed et al.,2019). The Frayer Model Plus is useful for teaching and learning vocabulary (Urquhart & Frazee, 2012). Different studies proved that the Frayer Model Plus developed students' vocabulary in EFL (Mardiyah,2014; Nahampun & Sibarani,2014).

Graphic organizers improve students' comprehension skills and performance in different content areas (Cohen & Cowen, 2008). Teachers ask brainstorming questions so that students can think about the concept. The Frayer Model Plus is mainly used as an interactive teaching strategy as students discuss, share, and describe different terms. It can also be used in formative assessment to measure students' learning (Thomas, 2016). Students are asked to describe the

meaning of a word or concept by defining the term, describing its essential characteristics, providing examples as well as non-examples of it, and writing a sentence using it (Alashry et al.,2018).

Graphic organizers enable students to organize ideas, facts, and concepts for retention. Information is portrayed in a graph, and students highlight the connections of ideas and concepts. Students classify essential and non-essential features of words. Graphic organizers are used to make the learning process active and meaningful since students distinguish different words (Taylor et al.,2009). The Frayer Model Plus encourages students to connect the meanings of words to different contexts. Students use dictionaries to fill in the diagram (Horn & Feng, 2012). The Frayer Model Plus incorporates definitions, illustrations, examples, and non-examples of a specific word or term. The model, as a teaching strategy, aims to improve students' understanding of vocabulary (Trask, 2011).

The Frayer Model Plus is based on cognitive learning theories as students are exposed to different representations of concepts, verbal and visual, to improve information retrieval (Lin et al., 2012). The model also helps students analyze, synthesize, and apply information to describe a concept and its characteristics, examples, and non- examples. The different cognitive processes required to fill the Frayer Model Plus develop students' understanding of the new concepts (Hunt et al., 2013). Madkour (2016) examined the effect of cognitive-based teaching methods on university students' performance in translation. Quantitative and qualitative data were collected from a focus group of participants. Data analysis indicated that students needed to improve their cognitive skills to produce accurate translation. The findings revealed the positive effect of cognitive-based teaching methods on students' performance in translation.

Teachers can offer students pictures and drawings of the Frayer Model (Urquhart &Frazee, 2012). Students write the word in the middle cell and insert relevant information in the four cells: Essential characteristics, definitions, examples, and non-examples. Then write a sentence on the word. They justify their answers and discuss the alternatives to fully understand the word (Eyers et al.,2020). The Frayer Model Plus requires students to think about and describe a concept. They analyze and synthesize the concept, then apply the information acquired to offer definition, characteristics, examples, and non -examples of it

(Hunt et al., 2013). Students draw the Frayer Model and use different resources to write a clear concise definition of the word. Teachers guide students in determining the characteristics of the concept and suggest their examples and non-examples. Students write a sentence on the concept and discuss their answers with peers (Panjaitan & Sihotang,2020).

Wood et al. (2016) suggest three stages for applying the Frayer Model Plus in a language classroom and these stages can be easily applied in teaching translation in EFL. In the pre-translation stage, the teacher identifies the key vocabulary of the source text. Students can participate in the vocabulary selection through discussion or brainstorming. Teachers can ask students to use paper copies of the model or any available digital application, like Inspiration. In the translation stage, students use different resources to fill in the Model and translate the text into the target language. In the post translation stage, students work in pairs or groups to discuss their translation. They write a plus statement to describe the word, then they are asked to explain the effect of the Model on the translation process. The Plus statement in this research is used in writing a sentence on the word in the target language of translation so that students can use appropriate style and writing mechanism in the target language.

Translation depends on the accuracy and clarity of the words used to convey the meaning of the source text into an equivalent form of the target language. Translation can be assessed through vocabulary assessment (Ehara et al.,2021). The Frayer Model Plus enables students to identify the meaning, characteristics, examples, and non- examples of each word, besides writing a sentence using the explained word. The Model clarifies each word of the source text so that students can select the best counterpart in the target language. Students become aware of the linguistic, syntactic, semantic, and pragmatic features of each word included in the source text and they can transfer it in the translated text. The Model depends on the use of dictionaries and translation activities are dictionary based too.

## **Method**

### **Research Design**

The research design used in this research was the quasi-experimental. An experimental group and a control group were pretest and post tested on the Translation Test.

## **Participants**

The research participants were 50 first year secondary stage students randomly selected from a public school in Helwan. They were distributed equally into an experimental group and a control one. The Independent samples "t" test ( $t=1.30$ ) revealed that groups were equivalent.

## **Instrumentation**

### **Translation Skill Checklist**

To design the checklist, the researcher depended on studies, like El-Garawany(2021), and Antar (2010).

### **Purpose of the Checklist**

This checklist aimed to highlight the EFL translation skills suitable for first year secondary stage students in Egypt.

### **Construction of the Checklist**

The initial form of the checklist consisted of eight skills, but the jury members recommended the deletion of some skills. The jury members' recommendations were followed, and the final form of the checklist is in (Appendix A).

### **Validity of the Checklist**

Content validity was approved by following the suggestions of the jury members who were asked to:

- Select the EFL translation skills appropriate to first year secondary stage students.
- Write other skills that should be included in the checklist.

## **Translation Test**

### **Test Aim**

The test aim was to measure first year secondary stage students' EFL translation skills.

## Test Description

The test consisted of two sections: translate into Arabic and translate into English. Each section had three texts for translation adopted from [www.newhelloforegypt.com](http://www.newhelloforegypt.com). Students were asked to read the test instructions before translating the texts. Students were given blank spaces to write their answers on the same page (Appendix B).

## Test Piloting

The test was piloted to ensure the clarity of instructions, besides the readability and comprehensibility of the questions. Also, the test timing and statistical features were calculated. The test was administered to 20 first year secondary stage students at a public school in Helwan on October 13, 2021.

## Test Timing

During the test piloting, the total sum of the times that students spent in answering the test was calculated and divided by the students' number. The mean of the times spent in answering the test was 35 minutes.

## Test Scoring

The test was scored using the scoring rubric developed by the researcher (Appendix C). The total score of each translation text was 25 divided on five main criteria: information transfer, style, writing mechanics, finding equivalents, and readability. The performance rate of each criterion ranged between (1-5). The criteria of the scoring rubric were suggested by studies, like Farahzad and Khalili (2012), Waddington (2001), and Goff-Kfoury (2005). The test was scored by two experts to avoid bias and the mean scores were statistically analyzed.

## Test Reliability

According to the results of test piloting, the reliability of the test was calculated using Cronbach's Alpha. The reliability co-efficient value for the test (0.90) was acceptable.

## Test Validity

The value of the critical ratio of the discriminatory validity (12.05) was statistically significant at the 0.01 level, and the test was discriminatory. The content validity was achieved through following the recommendations of the jury members who were asked to judge the following items:

- Appropriateness of the selected translation texts
- Clarity of test instructions
- Accuracy of the suggested scoring rubric for

## Pre-testing

The experimental and control groups answered the Translation Test before the administration of the suggested program (see Appendix B). Both groups were pre tested on October 14, 2021 to determine students' levels concerning the translation skills.

## Post-testing

Participants answered the Translation Test on December 19, 2021, to examine the effectiveness of the suggested program based on the Frayer Model Plus in developing their EFL translation skills.

## The Suggested Program

The suggested program based on the Frayer Model Plus was developed according to previous studies. The program aimed to achieve the following objectives:

- 1- Develop secondary stage students' translation skills.
- 2- Encourage secondary stage students to use the Frayer Model Plus to transfer the source text information accurately in the target language text.
- 3- Encourage secondary stage students to use different sources to find the equivalents of the source text without omission or addition.
- 4- Enhance the confidence level of secondary stage students for assessing their translation skills according to a specific scoring rubric.

## Program Rationale

The program was designed according to the Frayer Model Plus suggested by Wood et al.(2016) and implemented by Dazzeo and Rao (2020).It aimed to develop secondary stage students' translation skills. The Frayer Model Plus used a graphic organizer that consisted of an oval for a specific word or term, then there were four squares to write definition, characteristics, examples, and non-examples of the specific word. Students wrote a plus statement using the word in the target language. The Model clarified each word of the source text, so students selected the accurate equivalent in the target language. The steps of the Frayer Model Plus enabled students to identify the emotions, ideas, and views of the source text to be transferred to the target text. The plus step of writing a sentence in the target language encouraged students to use accurate style and writing mechanics.

## Program Content

The program was developed after reviewing different sources. Selected texts from The New Hello textbook (units 1-6), besides other sources published on [www.ekb.eg](http://www.ekb.eg) and [www.newhellowforegypt.com](http://www.newhellowforegypt.com) for the first term of the first year secondary stage students were adopted. References were cited in each session, see Appendix D.

## Program Framework

The duration of the program administration was 18 sessions, every session took 45 minutes. Participants received two sessions every week. There were two introductory sessions for students to use dictionaries accompanied by online sources to fill in the Frayer Model Plus. Then, there were five sessions on the five translation skills: Transferring the source text information, using appropriate style, using accurate writing mechanics, finding equivalents, and producing readable translation. In the eighth session, the scoring rubric was introduced to the students to get a general overview on how the translation questions were scored. The texts introduced in these eight sessions were adopted from units (1-6) in the New Hello.

The following ten sessions offered texts to be translated from English to Arabic and vice versa. The texts translated were the web site exercises for the New Hello first year secondary stage, term one. The exercises covered the units from 1-6. Each session depended on three stages: pre—translation, while-translation, and post-translation activities. Students applied the Frayer Model Plus and discussed the processes applied to find equivalents of the source texts. They used monolingual and bilingual dictionaries to fill the chart of the Frayer Model Plus. Self -assessment and peer- assessment were used to score students' translated texts, see Appendix D.

## Procedures

The experimental and control groups answered the Translation Test on October14, 2021. The researcher offered training for the teacher of the experimental group on using the Frayer Model Plus and scoring the translated texts according to the scoring rubric. The experimental group received 18 sessions based on the Frayer Model Plus, while the control group were taught the same translation texts traditionally. The experimental group used the scoring rubric to score the translated texts produced by themselves and their colleagues. The control and experimental groups were post tested on December 19,2021. Data were analyzed using statistical methods.

## Results

### Data Analysis

To assess the effectiveness of the Frayer Model Plus in developing students' translation skills, the Statistical Package for Social Science (SPSS), Version 26 was used in analyzing data. Data analysis used descriptive statistics, such as means and standard deviations. Also, inferential statistics, like t-test, were also used. To calculate the differences between the mean scores of the control and experimental groups in the Translation Test, the Independent-Samples "t" test was applied. The calculated "t" values were interpreted according to the tabulated one (3.460). The alternative hypotheses of this research were accepted as the calculated "t" values were higher than the tabulated one.

## Results

Results were based on hypotheses testing.

### The 1<sup>st</sup> Hypothesis

There was a statistically significant difference, in the skill of transferring the source text information, between the mean scores of the control and experimental groups at ( $\alpha \leq 0.01$ ) level of significance in the post administration of the translation test in favor of the experimental group.

The following table showed the data analysis of this hypothesis:

**Table 1**

t Value for the skill of transferring the source text information

Skills	Group	N	Mean	Std. Deviation	t-Value	Sig.	Result
Transferring the source text information	Control	25	13.80	3.46	12.28	0.00	Significant at the 0.01
	Experimental	25	27.24	4.24			

The calculated “t” (12.28) for the skill of transferring the source text information was more than the tabulated “t” (3.460), so the hypothesis was accepted.

### The 2<sup>nd</sup> Hypothesis

There was a statistically significant difference, in the skill of using appropriate style, between the mean scores of the control and experimental groups at ( $\alpha \leq 0.01$ ) level of significance in the post administration of the translation test in favor of the experimental group.

This hypothesis was tested according to this table:

**Table 2**

t Value for the skill of using appropriate style

Skills	Group	N	Mean	Std. Deviation	t-Value	Sig.	Result
Using appropriate style	Control	25	13.92	3.86	12.45	0.00	Significant at the 0.01
	Experimental	25	27.48	3.84			

The calculated t (12.45) for the skill of using appropriate style was more than the tabulated t (3.460), and the hypothesis was accepted.

### The 3<sup>rd</sup> Hypothesis

There was a statistically significant difference, in the skill of using accurate writing mechanics, between the mean scores of the control and experimental groups at ( $\alpha \leq 0.01$ ) level of significance in the post administration of the translation test in favor of the experimental group.

The data of testing this hypothesis was shown in the following table:

**Table 3**

t Value for the skill of using accurate writing mechanics

Skills	Group	N	Mean	Std. Deviation	t-Value	Sig.	Result
Using accurate writing mechanics	Control	25	13.56	3.37	16.44	0.00	Significant at the 0.01
	Experimental	25	28.08	2.86			

Since the calculated t (16.44) for the skill of using accurate writing mechanics was more than the tabulated t (3.460), the hypothesis was accepted.

### The 4<sup>th</sup> Hypothesis

There was a statistically significant difference, in the skill of finding equivalents, between the mean scores of the control and experimental groups at ( $\alpha \leq 0.01$ ) level of significance in the post administration of the translation test in favor of the experimental group.

The data of the hypothesis was shown in the following table:

**Table 4**

t Value for the skill of finding equivalents

Skills	Group	N	Mean	Std. Deviation	t-Value	Sig.	Result
Finding equivalents	Control	25	13.44	4.25	13.53	0.00	Significant at the 0.01
	Experimental	25	28.08	3.34			

The calculated t (13.53) for the finding equivalents skills was more than the tabulated t (3.460), so the alternative hypothesis was accepted.

### The 5<sup>th</sup> Hypothesis

There was a statistically significant difference, in the skill of producing readable translation, between the mean scores of the control and experimental groups at ( $\alpha \leq 0.01$ ) level of significance in the post administration of the translation test in favor of the experimental group.

The data of testing this hypothesis was shown in the following table:

**Table 5**

t Value for the skill of producing readable translation

Skills	Group	N	Mean	Std. Deviation	t-Value	Sig.	Result
Producing readable translation	Control	25	13.92	3.66	13.07	0.00	Significant at the 0.01
	Experimental	25	27.72	3.80			

As the calculated t (13.07) for the producing readable translation skill was more than the tabulated t (3.460), the 5<sup>th</sup> hypothesis was accepted.

### The 6<sup>th</sup> Hypothesis

There was a statistically significant difference in the overall translation skills between the mean scores of the control and experimental groups at ( $\alpha \leq 0.01$ ) level of significance in the post administration of the translation test in favor of the experimental group.

The data of testing this hypothesis was displayed in the following table:

**Table 6**

t Value for the overall translation skills

Skills	Group	N	Mean	Std. Deviation	t-Value	Sig.	Result
Overall Translation Skills	Control	25	68.64	16.02	16.46	0.00	Significant at the 0.01
	Experimental	25	138.60	13.96			

The calculated t (16.46) for the overall translation skills was higher than the tabulated t (3.460), so this hypothesis was accepted.

To calculate the effect size for the Frayer Model Plus on the translation skills, Eta square ( $\eta^2$ ) and Cohen's (d) were calculated using t value for the differences between means as displayed in this table:

**Table 7**

The effect size for the Frayer Model Plus on Translation Skills

Skills	Test	Mean	Std. Deviation	t-Value	Cohen's d	Eta square ( $\eta^2$ )	
Overall Translation Skills	Pre	53.80	15.91	30.34	Value	Effect size	
	Post	138.60	13.96		5.63	Huge	
						Value	Effect size
						0.98	Huge

The effectiveness of the suggested program based on the Frayer Model Plus was calculated by applying the modified Blake's gain ratio on the pre-post means of the experimental group scores as presented in the following table:

**Table 8**

Effectiveness of the Frayer Model Plus in Developing Translation Skills

Skills	Pre-Mean	Post-Mean	Max-Score	Blake's gain ratio	Effectiveness
Transferring the source text information	10.76	27.24	30	1.41	Exist
Using appropriate style	11.04	27.48	30	1.42	Exist
Using accurate writing mechanics	10.68	28.08	30	1.48	Exist
Finding equivalentents	10.64	28.08	30	1.48	Exist
Producing readable translation	10.68	27.72	30	1.45	Exist
The suggested program	53.8	138.6	150	1.45	Exist

As shown in the previous table, there was statistically acceptable effectiveness of the Frayer Model Plus in developing translation skills.

The value of Blake's modified gain ratio for the suggested program showed its effectiveness as it was (1.45) and existed in Blake's range of effectiveness (1-2). The suggested program based on the Frayer Model Plus was effective in developing first year secondary stage students' translation skills.

### Discussion of Findings

Based on the statistical analysis, the suggested program based on the Frayer Model Plus was effective in developing first year secondary stage students' translation skills. The effect size values for the Frayer Model Plus ( $d=5.63$ ) and ( $\eta^2=0.98$ ) were huge. The calculated t value for every translation skill was more than the tabulated t value (3.460). The order of the developed translation skills was: using accurate writing mechanics (16.44), finding equivalentents (13.53), producing readable translation (13.07), using appropriate style (12.45), and finally transferring the source text information (12.28).

The use of the Frayer Model Plus enabled students to use dictionaries and other online sources to clarify the meaning of different words in the target text. They engaged in the translation activities through filling the template of the Frayer Model Plus and analyzed information on each word to infer its characteristics, non-characteristics, examples, and non- examples before writing

a sentence using the word in the target language. They were able to tackle collocations, synonyms, and antonyms to fill the four cells of the model, then they focused on style and writing mechanics in writing a sentence on the word in the target language.

The highest score of using accurate writing mechanics can be attributed to the use of peer assessment. Students' translated texts revealed accurate spelling, capitalization, and punctuation to avoid their peers' corrections. The four main cells of the Frayer Model Plus enabled students to find equivalents of the source text words. They used a monolingual dictionary: Longman in addition to different bilingual dictionaries: Q Dictionary, Arabic English dictionary, and Advanced Oxford English Arabic dictionary to translate from Arabic to English and vice versa.

Deep information searching and use of different sources to fill in the five cells of the Frayer Model Plus enabled students to develop their translation skills. The use of the Frayer Model Plus enabled first year secondary stage students to accurately use sentence structures, word choice, and grammar. They translated all lexical and syntactic elements of the source texts without alteration, omission, or addition. They transferred the information of the source text accurately. The translated text readability was the outcome of the integration of different translation skills. The translated texts read smoothly like a piece originally written in the target text.

## Conclusions

To the best knowledge of the researcher, there was a paucity of research on the effectiveness of the Frayer Model Plus in developing translation skills. Since the Frayer Model Plus was based on the functionalist approach, the findings of this research were aligned with those of Károly(2014) who concluded that the use of a functional framework developed students' translation as they were able to manage the relationship between text and context based on their cultural and textual awareness. Since students in this research used different online tools, the current results coincided with those of Mahmoud and NourEldin (2021) who maintained that using an online collaborative translation technique based on Google Classroom developed EFL student teachers' translation competence and attitudes towards online collaboration. Furthermore, since the Frayer Model Plus enabled students to use different cognitive processes to select the best

equivalents, the findings of this research were like those of Madkour (2016) who proved the positive effect of cognitive-based teaching methods on students' performance in translation.

### **Recommendations and Suggestions for Further Research:**

- Examining the effect of the Frayer Model Plus on developing students' EFL integrated reading and writing skills.
- Investigating teachers' perceptions on the integration of translation as a major language skill in every unit of the secondary stage textbook.
- Examining the effect of online graphic organizers on students' translation skills.
- Exploring the use of qualitative data gathering instruments, like the think aloud protocol, to highlight the processes followed by students to produce equivalent readable translated texts.

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