

**Program Based on SCAMPER Model for Developing
the Creative Thinking Skills in English Language
among PreMaster Degree in Education Students**

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Program Based on SCAMPER Model for Developing the Creative Thinking Skills in English Language among PreMaster Degree in Education Students

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Abstract

The purpose of this study was to investigate the effectiveness of a program based on SCAMPER model in developing the creative thinking skills in English language (fluency, flexibility, originality and elaboration) among PreMaster Degree in Education students. The study adopted the quasi-experimental design that involved one experimental group. The sample of the study consisted of 115 students enrolled in the Department of Curriculum and Instruction at Cairo University. The experimental group was taught a program based on SCAMPER model for twelve weeks, two hours per week, during the second semester of the academic year 2022/2023. To collect data, a prepost creative thinking skills test was administered to the experimental group.

The results of the study indicated that there were statistically significant differences between the mean scores of the experimental group in the pre and post administration of the creative thinking skills test in favor of the post administration of the test.

Therefore, the researcher recommended training EFL instructors, teachers, prospective teachers and learners on using the SCAMPER model for developing English language skills in general, and the creative thinking skills in particular.

Keywords: SCAMPER model, creative thinking skills.

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برنامج قائم على نموذج سكامبر لتنمية مهارات التفكير الابتكاري في اللغة الإنجليزية لدى طلاب تمهيدي الماجستير في التربية

المخلص العربي:

هدفت هذه الدراسة إلى إستقصاء فاعلية برنامج قائم على نموذج سكامبر في تنمية مهارات التفكير الابتكاري في اللغة الإنجليزية (طلاقة و مرونة و أصالة و إيقان) لدى طلاب تمهيدي الماجستير في التربية. وقد تبنت الدراسة التصميم شبه التجريبي ذات المجموعة التجريبية الواحدة. و تكونت عينة الدراسة من ١١٥ طالباً و طالبة مقيدتين بقسم المناهج و طرق التدريس بجامعة القاهرة. و تم تدريس البرنامج القائم على نموذج سكامبر للمجموعة التجريبية لمدة ١٢ أسبوعاً، ساعتان أسبوعياً، خلال الفصل الدراسي الثاني من العام الجامعي ٢٠٢٢ / ٢٠٢٣. و طبق إختبار لمهارات التفكير الابتكاري في اللغة الانجليزية على المجموعة التجريبية لجمع البيانات. و قد اشارت نتائج الدراسة إلى وجود فروقاً ذات دلالة إحصائية بين متوسطات درجات المجموعة التجريبية في إختبار مهارات التفكير الابتكاري عند تطبيقه قبلياً و بعدياً لصالح التطبيق البعدي للاختبار. و في ضوء تلك النتائج أوصت الباحثة بتدريب المحاضرين و المعلمين و طلاب كليات التربية تخصص اللغة الإنجليزية و المتعلمين على إستخدام نموذج سكامبر لتنمية مهارات اللغة الانجليزية بشكل عام، ومهارات التفكير الابتكاري بشكل خاص.

الكلمات المفتاحية: نموذج سكامبر، مهارات التفكير الابتكاري.

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1.Introduction:

In the light of the constant transformation in the global perspectives, educational systems developed to cover the required 21st century skills and trends that learners should obtain. One of these indispensable trends nowadays is creative thinking.

The global world demands the learners to think critically and creatively to communicate with others in a collaborative way to convey knowledge, solve problems and share mutual universal basis (Gursoy & Bag, 2018, p.172).

Many strategies for developing creative thinking were designed to enhance learners' divergent thinking or their ability to think of responses or solutions to a raised issue or problem. Divergent thinking includes: fluency, flexibility, originality and elaboration (Schlichter, 1986, p.364). These four essential skills indicate producing many ideas, different points of view, unusual ideas and adding details to improve these ideas respectively (Eragamreddy, 2013, p.140).

Most creative thinking training programs focused on trials to develop divergent thinking. So, providing opportunities for learners to develop fluency, flexibility, originality and elaboration became an essential part of the educational programs (Gursoy & Bag, 2018, p.174).

Nowadays, many teaching strategies and models that were based on the constructivist theory were utilized to teach and learn English as a foreign language. These strategies and models included main characteristics as: the learner's involvement in the learning process, the environment is democratic, and the activities are communicative and student-centered. Among the models that are based on the constructivist theory is SCAMPER (Al Omari & Al Omari, 2022, p.3).

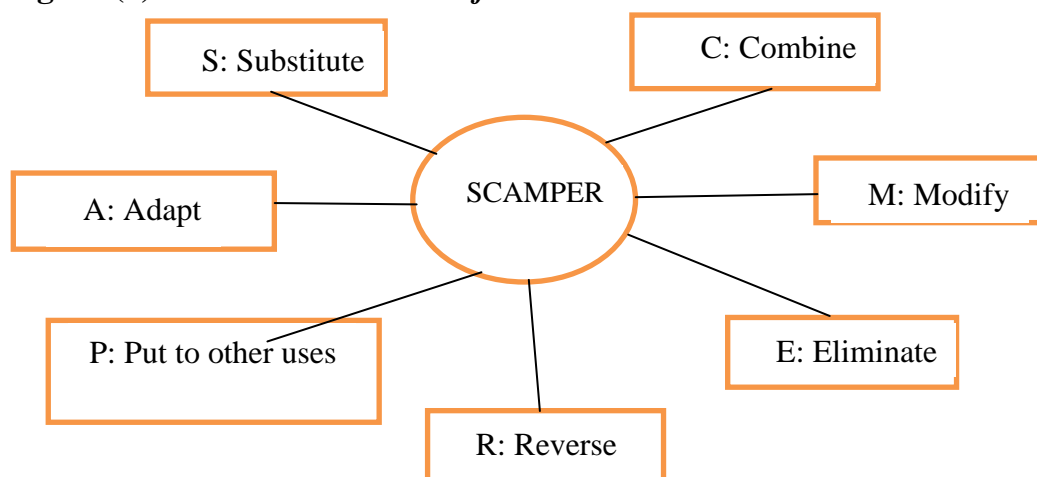
SCAMPER emerged from a brainstorming technique proposed by Osborn in 1953. The technique was introduced to education by Eberle in 1972 (Seidinejad & Nafissi, 2018, p.1699). Actually, SCAMPER is an acronym for a set of activities: (S) Substitute, (C) Combine, (A) Adapt,

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(M) Modify, (P) Put to other uses, (E) Eliminate and (R) Reverse or Rearrange (Idek, 2016, p.31). The explanation for how the activities are utilized is as follows:

1. S for Substitute: Substitutions is a trial and error activity where the learner tries alternatives out, observes if it works, then tries a different response.
2. C for Combine: Combining implies synthesis where the learner combines previous ideas together to create new ones.
3. A for Adapt: Adaptation is thinking about what has already been known about the problem and how others attempted to solve it.
4. M for Modify (also magnify and minify): Modifying is the learner's reflection on what is needed to support an idea and make it better or simpler.
5. P for Put to other uses: Putting to other uses is considering ways that the target can be used in other ways other than originally intended.
6. E for Eliminate: Elimination is removing or deleting part to improve the meaning.
7. R for Reverse or Rearrange: Reversal takes place to focus on the opposite or contrary meaning, whereas rearrangement is used to focus on how the change of order would affect the target (Fahmy, Quora & Hassan, 2017, p.18).

Figure (1) *The Seven Activities of the SCAMPER Model*



SCAMPER activities were clarified by Michalko (2006) in the following table:

Table (1) The SCAMPER Activities With Some Sample Questions

S	Substitute	Sample questions: -What can I substitute? -Who can I substitute?
C	Combine	Sample questions: -Combine ideas/purposes/materials? -Can anything be blended or ensembled?
A	Adapt	Sample questions: -How the problem is currently solved? -How can it be more compatible?
M	Modify	Sample questions: -How can this be altered for the better? -What can I modify?
P	Put to other uses	Sample questions: -What else can this be used for? -What are those uses? -Who else could use it?
E	Eliminate	Sample questions: -What should I simplify or enrich? -Should it be plain or fancy?
R	Reverse or rearrange	Sample questions: -What other arrangements might be better? -What would happen if I flipped the order?

The most crucial thing about the SCAMPER acronym is that all or parts of it can be utilized at any time by students in order to generate many ideas or solve a certain problem. Thus, students can use the SCAMPER questions in class to help the ideas come (Eragamreddy, 2013, p.142).

Nowadays, the main target of higher education institutions is to teach the students how to be interactive, flexible and productive. This points out the importance of enhancing creative thinking in education. Despite the importance of creative thinking for students' successful academic and professional career, many studies proved that university

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graduates suffer from insufficiency in fundamental skills; namely critical and creative thinking, problem-solving and decision-making skills (Gladushyna, 2019, p.98).

Consequently, the researcher of the present research designed an instructional program based on SCAMPER model for developing the creative thinking skills in English language among her students who were enrolled in the premaster degree in education, Department of Curriculum and Instruction at Cairo University, during the second semester of the academic year 2022/2023.

1.1 Context of the Problem

First, according to the researcher's experience in teaching English language Readings in Curricula and Methods of Teaching prescribed on PreMaster Degree in Education Students in their second semester at the Faculty of Graduate studies for Education, she observed students' need of a certain model that could enhance their creative thinking skills; namely fluency, flexibility, originality and elaboration. Post-graduate students should be able to find out innovative ideas, solve problems and face different obstacles successfully.

Second, a number of recent studies: Al Qudah (2018), Ibrahim (2018), Gursoy (2018), Al Masri (2019), Tharwa (2019), Sayed, Kotb & Shehata (2020), Abdurrahman & Mahmood (2021), Al Omari and Al Omari (2022) and ElKhabery (2023)) spotlighted the positive effects of the SCAMPER model on developing creativity and moving English language skills development, in general, progressively forward.

1.2 Statement of the Problem

The problem of this study could be expressed in the need of premaster degree in education students of a certain model for developing their creative thinking skills, generating new ideas and solving problems. Therefore, the researcher proposed utilizing the SCAMPER model as a solution for enhancing these skills.

Questions of the Study

The problem of the study could be represented in these questions:

1. What is the proposed SCAMPER-based program for developing learners' EFL creative thinking skills?

2. What is the effectiveness of the SCAMPER model in developing the learners' EFL fluency?
3. What is the effectiveness of the model in developing the learners' EFL flexibility?
4. What is the effectiveness of the model in developing the learners' EFL originality?
5. What is the effectiveness of the model in developing the learners' elaboration?
6. What is the effectiveness of the model in developing the learners' EFL creative thinking skills as a whole?

1.3 Significance of the Study

The present study was expected to:

1. Develop the creative thinking skills in English language among premaster degree in education students.
2. Help English language instructors and teachers to benefit from the SCAMPER model in developing their students' creative thinking skills.
3. Pave the way for other studies that can benefit from the SCAMPER model in improving students' creativity and English language skills.

1.4 Purpose of the Study

The study aimed at developing an instructional program based on the SCAMPER model for developing premaster degree in education students' creative thinking skills; including: fluency, flexibility, originality and elaboration.

1.5 Study Hypotheses

The study hypotheses were as follows:

1. There is a statistically significant difference between the pretesting and posttesting of the experimental group in terms of developing fluency in English language in favor of the posttesting.
2. There is a statistically significant difference between the pretesting and posttesting of the experimental group in terms of developing flexibility in English language in favor of the posttesting.

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3. There is a statistically significant difference between the pretesting and posttesting of the experimental group in terms of developing originality in English language in favor of the posttesting.
4. There is a statistically significant difference between the pretesting and posttesting of the experimental group in terms of developing elaboration in English language in favor of the posttesting.
5. There are statistically significant differences between the pretesting and posttesting of the experimental group in terms of developing the creative thinking skills in English language as a whole in favor of the posttesting.

1.6 Delimitations of the Study

The study was delimited to:

1. The premaster degree in education students, Department of Curriculum and Instruction, Faculty of Graduate Studies for Education, Cairo University.
2. The SCAMPER model for teaching the program.
3. The second semester of the academic year 2022/2023 (three months, two hours per week).
4. The four main creative thinking skills; namely: fluency, flexibility, originality and elaboration.

1.7 Terminology

1.7.1. SCAMPER model

It was defined by Saeed & Ramdane (2022, p.4) as an acronym for a collection of processes that create ideas that may be explored and developed further. It demands learners to Substitute, Combine, Adapt, Modify, Put to other uses, Eliminate and Reverse/Rearrange. Abdurrahman & Mahmood (2021, p.5) defined it as an acronym of seven steps that forms a systematic and educational style that can be used effectively in enhancing learners' knowledge and expanding their thinking skills.

The SCAMPER model was used operationally in this study as an acronym of seven activities that were used systematically, accompanied

by related questions in order to enhance premaster degree in education students' EFL creative thinking skills.

1.7.2. Creative thinking

It was defined by Eragamreddy & Nagamurali (2013, p.127) as a kind of thinking that leads to new perspectives, novel approaches and whole new methods of understanding and recognition of things.

Schlichter (1986, p.364) defined it as students' ability to think of many different responses to a given situation. This requires fluency, flexibility, originality and elaboration.

Creative thinking was utilized operationally in this study as the students' ability to think of many, different and original responses to a given situation, and adding details needed to these responses.

2.Previous Studies

A number of studies tackled the SCAMPER model, and how to utilize it for developing EFL learners' creative thinking and their English language skills.

Al Qudah's study (2018) aimed at identifying the effect of utilizing SCAMPER on improving ninth grade students' English writing skills in Jordan. Four sections from two schools were chosen randomly as the experimental and the control groups. A writing test was used as the study instrument. The results displayed that there were statistically significant differences between the experimental and the control groups in the writing skills in favor of the experimental group. The results also displayed statistically significant differences between males and females in favor of the females.

Ibrahim's study (2018) aimed at examining the effectiveness of SCAMPER in improving the essay writing skills of EFL students and their attitudes towards using the model. The sample was 64 students enrolled in the English Department, Faculty of Education. The model was implemented for 28 hours during the first semester of the academic year 2018/2019. An essay writing test, a rubric and attitudes scale were used as the study instruments. Results showed that the SCAMPER model had a large effect on developing students' essay writing skills and their positive attitudes towards using the model in teaching English as a foreign language.

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Gursoy's and Bag's study (2018) aimed at developing students' creative thinking skills (fluency, flexibility, originality, and elaboration) through training using the stimuli type-visual or audio. Two different groups, each group consisted of 12 EFL secondary school students, were chosen randomly for the experiment which lasted for 6 weeks, 3 hours per week. Each group was given either visual or audio stimuli for the required tasks. A pre and post figural, written and oral test was administered before and after the implementation of the program. The results reflected that the creative thinking skills of both groups improved. However, the visual group obtained higher scores.

Al Masri's study (2019) aimed at identifying the effect of utilizing brainstorming on developing creative thinking and achievement in English language among 10th grade students at Amman. The study sample consisted of 168 students. A test for creative thinking and an achievement test in English language were used as the study instruments. These two instruments were administered as pre and posttests on two groups (control and experimental). While the control group was taught using the regular way, the experimental group was taught using the brainstorming strategy. The study was conducted during the second semester of the academic year 2017/2018. The results indicated that there were statistically significant differences between the control group and the experimental group in the pre and posttest of creative thinking in English language as a whole, and in each skill of creative thinking (fluency, flexibility, and originality) in favor of the experimental group. They also indicated that there were statistically significant differences between the control group and the experimental group in the achievement test of English language in favor of the experimental group.

Tharwa's study (2019) aimed at identifying the effectiveness of using SCAMPER model in developing English language translation and the positive attitudes towards it among major students in one of the faculties of education at Saudi Arabia. The study sample included 40 students during the first term of the academic year 2018/2019. The study instruments included a prepost translation test and an attitudes scale towards translation. The study results reflected that there were

statistically significant differences between the pre and post scores of the translation test of the group in favor of the post administration of the test. There were also statistically significant differences between the pre and post scores of the attitudes scale of the group in favor of the post administration of the scale.

Sayed, Kotb and Shehata's study (2020) investigated the effect of using SCAMPER on developing third grade English majors' creative writing skills in English language. One group of 90 students was involved in the study in a pretest, posttest design. Instruments of the study included a prepost creative writing skills test and its rubric. The study results proved that there was a significant statistical difference in favor of the post performance of the students. Consequently, SCAMPER developed students' creative writing skills.

Abdurrahman's & Mahmood's study (2021) aimed at investigating the effect of SCAMPER on enhancing Iraqi preparatory stage pupils' creative thinking skills and achievement in English language. Two samples were chosen randomly of Iraqi preparatory stage pupils as the experimental group (35 pupils) and the control group (35 pupils). A pre and post achievement test was used before and after the intervention. Results showed significant statistical difference between the experimental and the control groups in the post administration of the English language achievement test in favor of the experimental group. They also showed the effectiveness of SCAMPER in raising the experimental group pupils' creative thinking skills.

Al Omari's and Al Omari's study (2022) aimed at investigating the effectiveness of a program based on SCAMPER in enhancing the speaking skills in English language among fifth-grade students in Jordan. 32 students were chosen randomly for the experimental group, and other 30 students for the control group. The experimental group was taught using SCAMPER, while the control group was taught using the usual method. The experiment lasted for eight weeks during the first semester of the school year 2019/2020. A prepost speaking test was administered on both groups. The results displayed statistically significant differences between the two groups in favor of the experimental group.

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Elkhabery's study (2023) aimed at improving English language speaking skills among third year English major students at faculty of education, Beni-Suef university in Egypt. The researcher used a program based on SCAMPER to achieve her aim. The study sample was divided into 30 students for the experimental group, and other 30 students for the control group. The experimental group was taught using the program based on SCAMPER, while the control group received regular instruction. The instruments of the study included a speaking skills checklist and a pre/post speaking test. The results displayed statistically significant difference between the experimental and the control groups in the overall speaking skill and in each speaking sub-skill in favor of the experimental group.

General comment on the related studies

The previous studies were beneficial for the present study, since they proved the effectiveness of the SCAMPER model in raising preparatory stage pupils' creative thinking skills in English language. They also confirmed the effectiveness of the model in developing learners' speaking skills, ability of composing short stories, translation, achievement, and positive attitudes towards learning at different stages.

However, to the best of the researcher's knowledge, the present study is the first one in the Egyptian context that examined the effectiveness of SCAMPER in developing the creative thinking skills in English language among the post-graduates; namely premaster degree in education students, and connecting this development with specialized topics and texts about education and the most common educational problems nowadays. That is why, the present study attempted to cover this gap by investigating the effectiveness of the SCAMPER model in developing the creative thinking skills in English language among premaster degree in education students at the Department of Curriculum and Instruction, Faculty of Graduate Studies for Education at Cairo University.

3.Method

3.1 Design

The present study used the quasi-experimental method. It adopted the one group pre and posttest experimental design. Thus, the researcher constructed and applied a program based on the SCAMPER model and a prepost creative thinking skills test in English language suitable for achieving the purpose of the study.

3.2 Participants

The participants were one hundred and fifteen students who were enrolled in the premaster degree in education program, Department of Curriculum and Instruction at Cairo University during the second semester of the academic year 2022/2023. Students attended the proposed program for three months, 24 hours, 2 hours per week. They were specialized in English language, French language, Arabic language, Science, Maths, Social Studies, Philosophy and Arts. Their ages ranged between twenty-five and thirty years old. According to the preacceptance tests, their English language proficiency was in the Intermediate level. It was expected that they would finish this English language course as one of five courses demanded as partial requirements for attaining their Master Degree in Education.

3.3 Instruments of the Study

3.3.1. The English language creative thinking skills test:

Aim of the test

The designed test aimed at measuring the creative thinking skills in English language; namely: fluency, flexibility, originality and elaboration among premaster degree in education students.

Description of the test

The test contained four questions. Each question measured one of the creative thinking skills in English language. They measured: fluency, flexibility, originality and elaboration, respectively. Moreover, time of the test was estimated by calculating the mean time to complete the test for a sample of fifteen students that were not from the study group. Consequently, the time devoted for the test was sixty minutes (see Appendix one).

Test validity

To ensure the test validity, it was justified by a specialized panel of university staff arbitrators in terms of achieving its aims, the suitability of the instructions, the questions and the scores given to each question. The test was agreed upon by the panel.

Test reliability

To ensure the test reliability, the test-retest method was utilized on fifteen students other than the study group. The reliability coefficient proved to be 0.91, which was considered convenient and high.

Test scoring

Because of the nature of creativity, the maximum total score for the test was not defined by the researcher. Each new idea, a different question or added detail was given one score for the first, second and fourth questions respectively. Concerning the third question, the score was given according to the originality of the student's answer, rarity of ideas and frequency of students' responses according to the following table agreed upon by the arbitrators:

Table (2) The originality of the student's answer

Percentage of originality in relation to the number of the study group	The assigned score
1-5%	15 marks
6-20%	12 marks
21-50%	9 marks
51-70%	6 marks
71-100%	3 marks

3.3.2. The proposed program

Assumptions of the program

The present program was constructed according to the SCAMPER model. Thus, it was based on the following assumptions:

1. SCAMPER's principles (Substitute, Combine, Adapt, Modify, Put to Other Uses, Eliminate and Revise/Rearrange) should be utilized in class.
2. Questions that could help in organizing utilizing SCAMPER in class should be raised by both the teacher and his learners.

3. Any creative response based on the SCAMPER model should be accepted, even if it seemed, to some students, to be illogical.

Objective of the program

The objective of the present program was to develop premaster degree in education students' creative thinking skills; namely: fluency, flexibility, originality and elaboration.

Description of the program

The program consisted of twelve lectures including the application of the pretest, one introductory session, and the application of the posttest. Each lecture lasted for two hours weekly. Thus, the intervention actually continued during the second semester of the academic year 2022-2023.

Validity of the program

The program was examined by a group of specialized arbitrators in Curriculum and EFL Instruction to assess it in terms of topics and texts selected, length of each text, level of difficulty, activities and instructional materials suitability. Consequently, the program was modified according to their observations and recommendations.

The program application

After devoting a lecture for explaining the importance of creativity in education, and the main activities of SAMPER for students, the program was applied according to the following steps:

Step One: "S" for Substitute:

In this stage, students were asked to read the selected text, and then worked on substituting some ideas, sentences or vocabulary used and replacing them with other suitable ones. Substitution was built on trial and error till reaching an acceptable result.

Step Two: "C" for Combine:

Then, students were required to put together some ideas, sentences or paragraphs existing in the selected text. Combining some elements in the text helped students reach something new. It could also possibly lead to a solution for a certain raised problem.

Step Three: "A" for Adapt:

In this stage, students were given the opportunity to adapt ideas or sentences to form new ones that suited the context of the selected text.

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Step Four: “M” for Modify/Magnify/Minify:

Then, students were asked about what they could produce if they modified, magnified or minified some ideas, sentences, or paragraphs in the selected text in order to produce something new.

Step Five: “P” for Put to another use:

In this stage, students thought about how to put their current idea, sentence, or paragraph presented in the selected text to different uses and what could be reused to produce a new format and what could be moved to another place in the text in order to produce a final better product.

Step Six: “E” for Eliminate:

Then, students meditated about what would happen if they eliminated components or vocabulary of some sentences, or if they minimized, reduced or simplified some of their aspects.

Step Seven: “R” for Rearrange or Reserve:

In this last stage, students contemplated whether they could rearrange by suspending the sequence, changing the arrangement of some components, or reversing the order of processes.

Finally, it should be mentioned that the researcher encouraged students to work collaboratively all the time during the implementation of the SCAMPER activities.

Students’ roles in the SCAMPER model

As long as the SCAMPER model was based on the constructivist theory, it adopted the student-centered approach. Accordingly, the student was not looked upon as a passive recipient to the teacher in the English language classes, but as a knowledge seeker who could substitute, combine, adapt, modify, put to other uses, eliminate and rearrange. Consequently, the student was supposed to be able to generate new ideas, search for his own sources of information, participate with his colleagues in accomplishing the required tasks successfully, and apply his learned experiences in similar situations.

Teacher’s roles in the SCAMPER model

As for the teacher, he was regarded as a guide, a facilitator and a motivator at the same time. Added to that, he was expected in each session to define clearly the objectives expected to be achieved by the

students, presenting the topic to be discussed, asking students relevant questions to raise their curiosity, answering their questions, arranging the time devoted to achieve the required objectives, and giving the students feedback at every step of the classwork.

Content of the program

The program contained nine educational authentic texts adopted from famous books in the educational field (see list of references). These texts tackled: the learner-centered approaches, establishing good relationships among students in class, how to raise students' motivation to learn, problem solving, a language teacher's roles in class, students' learning styles, Gardner's multiple-intelligences theory, informal versus formal assessment and holistic versus analytic scoring.

Teaching strategies

The researcher adopted and utilized the SCAMPER model throughout the current study; including brainstorming, discussion and co-operative learning. She also used lecturing in her first introductory session.

Instructional materials

The researcher used the smart board and the students' worksheets in her lectures as instructional materials throughout the program application.

Assessment

The current study utilized students' formative assessment represented in the lecturer's feedback and peer feedback. It also utilized students' summative assessment represented in the results of the prepost creative thinking skills test.

4. Data Analysis & Results

The main objective of the present study was to investigate the effectiveness of the SCAMPER model in developing premaster degree in education students' creative thinking skills: fluency, flexibility, originality and elaboration. The sample was submitted to a prepost administration of a creative thinking skills test. The statistical analysis of the collected data of the preposttest results were interpreted in the light of the study hypotheses. To test the first hypothesis: "There is a statistically significant difference between the pretesting and posttesting of the

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experimental group in terms of developing fluency in English language in favor of the posttesting”, a t-test was applied to compare the students’ result on the pretesting of fluency with the result of their posttesting. Table (3) illustrates the means, standard deviations, t-value and the effect size of both results.

Table (3) Results Comparing Mean Scores of the Pre and PostTesting of Fluency (N=115, DF=114)

Administration	Mean	Std. Deviation	Std. Error Mean	t-Value	Sig. Level	Effect Size (n^2)
Pre	5.0348	1.75184	0.16336	19.677	0.000	0.77
Post	8.0696	2.20335	0.20546			

T-test application showed that there was a statistically significant difference between the mean scores of the pre and posttesting of the fluency skill in favor of the posttesting. The calculated effect size revealed that the implemented program had a significant effect on the development of the post performance of the students’ fluency. The effect size was (0.77) with a t-value (19.677). Consequently, the first hypothesis was verified.

To test the second hypothesis: “There is a statistically significant difference between the pretesting and posttesting of the experimental group in terms of developing flexibility in English language in favor of the posttesting”, a t-test was utilized to compare the students’ result on the pretesting of flexibility with the result of their posttesting. Table (4) displays the means, standard deviations, t-value and the effect size of both results.

Table (4) Results Comparing Mean Scores of the Pre and PostTesting of Flexibility (N=115, DF=114)

Administration	Mean	Std. Deviation	Std. Error Mean	t-Value	Sig. Level	Effect Size (n^2)
Pre	4.9913	1.96235	0.18299	22.238	0.000	0.81
Post	7.9130	2.47289	0.23060			

T-test utilization displayed that there was a statistically significant difference between the mean scores of the pre and posttesting of the flexibility skill in favor of the posttesting. The computed effect size reflected that the implemented program had a large effect on the

development of the post performance of the students' flexibility. The effect size was (0.81) with a t-value (22.238). Thus, the second hypothesis was supported.

To test the third hypothesis: "There is a statistically significant difference between the pretesting and posttesting of the experimental group in terms of developing originality in English language in favor of the posttesting", a t-test was employed to compare the students' result on the pretesting of originality with the result of their posttesting. Table (5) shows the means, standard deviations, t-value and the effect size of both results.

Table (5) Results Comparing Mean Scores of the Pre and PostTesting of Originality (N=115, DF=114)

Administration	Mean	Std. Deviation	Std. Error Mean	t-Value	Sig. Level	Effect Size (n^2)
Pre	4.0174	3.17607	0.29617	19.923	0.000	0.78
Post	8.5304	3.29093	0.30688			

T-test implementation revealed that there was a statistically significant difference between the mean scores of the pre and posttesting of the originality skill in favor of the posttesting. The counted effect size illustrated that the implemented program had a significant effect on the development of the post performance of the students' originality. The effect size was (0.81) with a t-value (22.298). Therefore, the third hypothesis was proved.

To test the fourth hypothesis: "There is a statistically significant difference between the pretesting and posttesting of the experimental group in terms of developing elaboration in English language in favor of the posttesting", a t-test was administered to compare the students' result on the pretesting of elaboration with the result of their posttesting. Table (6) demonstrates the means, standard deviations, t-value and the effect size of both results.

Table (6) Results Comparing Mean Scores of the Pre and PostTesting of Elaboration (N=115, DF=114)

Administration	Mean	Std. Deviation	Std. Error Mean	t-Value	Sig. Level	Effect Size (n^2)
Pre	8.7913	2.46198	0.22958	30.851	0.000	0.89
Post	16.0522	3.99966	0.37297			

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T-test administration reflected that there was a statistically significant difference between the mean scores of the pre and posttesting of the elaboration skill in favor of the posttesting. The measured effect size denoted that the implemented program had a large effect on the development of the post performance of the students' elaboration. The effect size was (0.89) with a t-value (30.851). Accordingly, the fourth hypothesis was confirmed.

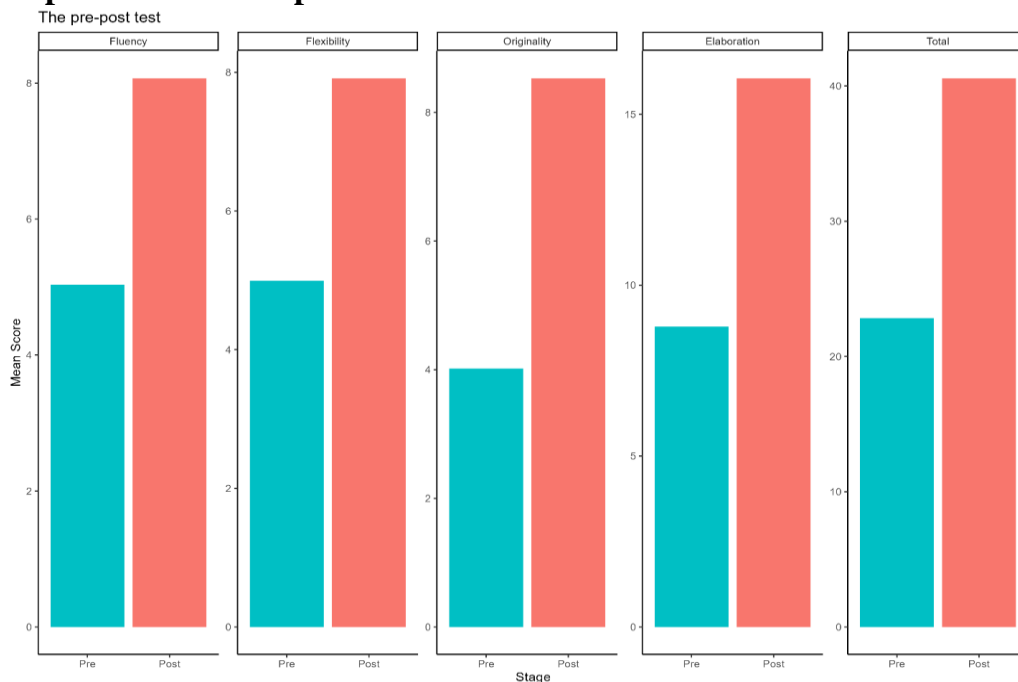
To test the fifth hypothesis: "There is a statistically significant difference between the pretesting and posttesting of the experimental group in terms of developing the creative thinking skills in English language as a whole in favor of the posttesting", a t-test was used to compare the students' result on the pretesting of the four creative thinking skills as a whole with the result of their posttesting. Table (7) manifests the means, standard deviations, t-value and the effect size of both results.

Table (7) Results Comparing Mean Scores of the Pre and PostTesting of the Creative Thinking Skills as a Whole (N=115, DF=114)

Administration	Mean	Std. Deviation	Std. Error Mean	t-Value	Sig. Level	Effect Size (η^2)
Pre	22.8348	8.19920	0.76458	32.614	0.000	0.90
Post	40.5652	10.45721	0.97514			

T-test application displayed that there were statistically significant differences between the mean scores of the pre and posttesting of the creative thinking skills as a whole in favor of the posttesting. The calculated effect size indicated that the intervention represented in the program involved had a large effect on the development of the post performance of the students' creative thinking skills. The effect size was (0.90) with a t-value (32.614). Hence, the fifth and last hypothesis was backed up. For more clarification of the prepost creative thinking skills test results of the experimental group, figure (2) was presented.

Figure (2)The PrePost Creative Thinking Skills Test Results of the Experimental Group



5. Discussion

Results of the current study confirmed that the experimental group's post performance significantly outperformed their pre performance on each creative thinking skill separately, as well as the creative thinking skills combined. The largest effect size was for elaboration (0.89) with a t-value (30.851), followed by flexibility (0.81) with a t-value (22.238), then originality (0.78) with a t-value (19.923), and finally fluency (0.77) with a t-value (19.677). The total effect size of the creative thinking skills was (0.90) with a t-value (32.614). Furthermore, it has to be mentioned that the development of each skill of the four creative thinking skills in English language was convergent and consistent at the same time with the development of the other skills.

These results are in harmony with the results of other previous studies; namely Al Qudah's study (2018), Ibrahim's study (2018), Tharwa's study (2019), Sayed, Kotb & Shehata's study (2020), Abdurrahman's & Mahmood's study (2021), Al Omari's & Al Omari's

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study (2022) and ElKhabery's study (2023). The formerly mentioned studies corroborated the effectiveness of utilizing the SCAMPER model in developing preparatory stage pupils' creative thinking skills in English language. They also substantiated the effectiveness of the model in developing learners' speaking skills, writing skills, ability of composing short stories, translation, achievement, and positive attitudes towards learning at different stages.

The effectiveness of the implemented program in achieving positive quantitative results was due to the fact that the program had achievable objectives, rich content, various well-prepared activities, clear teaching steps based on the SCAMPER model, different instructional materials and assessment methods. Moreover, students of the experimental group were capable of interacting and sharing ideas with each other, collaborating and expressing themselves freely without being afraid of making mistakes. They had also the opportunities to negotiate and generate many, different and unusual ideas, and to embellish these ideas with descriptions and details. All that took place in a meaningful, stimulating and friendly classroom environment.

Using the SCAMPER model helped students of the experimental group to become active participants rather than just passively absorbing information. Utilizing the SCAMPER model encouraged and motivated them to become contributors in their own learning, and to promote constructive problem-solving skills by engaging their minds to think around the obstacles in order to overcome them and achieve their targets. This necessitated changing the role of the instructor from being the controller of the whole work inside the classroom, into being a consultant, a facilitator and a supporter to the students, by arranging the teaching-learning process and creating a flexible and interesting learning environment. In addition, the immediate constructive feedback provided by the instructor, which allowed a favorable space of imaginative thinking, helped enhancing a sense of achievement, success and self-confidence among the students of the experimental group.

6. Conclusion

SCAMPER proved to be an effective, practical and convenient model that can be used to develop post-graduate students' creative thinking skills. It can enhance generating and expanding new ideas. Therefore, it should be adopted as a teaching and learning model that can help in fulfilling the learning objectives related to creativity and the creative thinking skills of learners.

7. Recommendations

In the light of the findings of the study, the researcher recommends the following:

1. EFL teachers and instructors should be trained on how to adopt the SCAMPER model in order to help learners develop their creative thinking skills and all English language skills.
2. Faculties of education should train prospective EFL teachers on how to use the SCAMPER model in teaching English language.
3. EFL teachers and instructors should train learners on how to utilize the SCAMPER model in class.
4. Learners should be offered enough time and opportunities to practice more activities on the creative thinking skills.

Suggestions for Further Research

Th researcher suggests the following topics for further research:

1. Examining the effectiveness of using the SCAMPER model in teaching other EFL courses at different stages.
2. Investigating the effectiveness of utilizing other modern interactive models and strategies in developing learners' creative thinking skills.
3. Investigating the effectiveness of using programs based on the SCAMPER model in developing the critical thinking skills.
4. Studying the effectiveness of using programs based on the SCAMPER model in reducing stress and developing motivation towards learning English as a foreign language.

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