

The Effectiveness of a Proposed Program Titled (Creativity Lamp) in Raising the Primary School Students' Academic Achievement and Promoting Creativity among Them in Kuwait

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Abstract

The present study aimed to explore the effectiveness of a proposed program titled (creativity lamp) in improving students' thinking skills and academic achievement and promoting creativity among them in Kuwait. This program involves several enrichment activities. The experimental group consists from 26 students. The control group consists from 25 students. Those students were randomly selected from a school named Al-Ma'moun Primary School. The proposed program is based on extracurricular activities. The teacher was trained about the way of implementing the program. The program was implemented throughout the semester. Through using the Torrance test of creative thinking-figural, it was found that the proposed program has a statistically significant impact –at the statistical significance of ($\alpha=0.001$)- on the students' academic achievement and creativity. The researchers recommend adding enrichment activities to the curricula of primary school students in Kuwait.

Keywords: creative thinking, enrichment, training program, primary school stage, creativity lamp, Kuwait

1. Introduction

The world experienced several rapid changes and developments in all areas. Such changes and developments include: globalism and emergence of social media and ICTs. In the light of such developments, human capital become more valuable than physical capital. In fact, the fortune of any nation today is measured through its intellectual capital (Al-Ghamdi, 2013). It's suggested that the development of a nation can be measured through identifying the percentage of creative people in it (Machado, 2019). Therefore, much attention must be provided to creative and innovative people.

Creativity may be defined as the process of coming up with original things (Dere, 2019). It may be defined as a cognitive process through which one solves his/her problems, and addresses his/her weaknesses and the gaps in his/her knowledge. Through creativity, one can make speculations, develop tests and re-tests hypotheses. Through creativity, one can answer difficult questions (Ghadban, 2011). Creativity enables people to come up with new things, products and innovations. Due to the significance of creativity, teachers must provide students with opportunities to develop their imagination and express their ideas. They should encourage students to engage in creative games. They should develop students' creativity in various dimension of creativity; (fluency, originality, elaboration, abstractness of titles, avoidance of premature closure, and figural creativity) (Dere, 2019). Torrance (2016) identifies three dimensions of creativity; fluency, originality and flexibility. He suggests that these dimensions are interrelated with one another.

However, utilizing the potentials of creative and innovative people requires developing their skills and capabilities. It requires addressing their problems and improving their socio-economic conditions. It requires addressing the obstacles they face (Moonesar et al., 2015). It requires employing pedagogical theories by teachers (Kaplan, 2017). It requires providing students with knowledge and skills. That shall enable them to address the challenges they face (de Alencar and de Oliveira, 2016). Providing attention to creative people shall foster the development of nations (Kaplan, 2019).

Academic achievement has been receiving much attention. For instance, it's positively associated with good living conditions, good career and future success (Nyström et al., 2018). It affects the degree of one's satisfaction with his/her life in the future. It affects students' well-being, especially psychological well-being. It is suggested that one's academic achievement significantly affect his/her socio-economic conditions. It is suggested that one's academic achievement affects one's perceptions for himself and his life (Crede et al., 2015)..

Due to the significance of academic achievement and creativity, several scholars seek developing several teaching methods, activities and programs for improving academic achievement and creativity. For instance, Farsimadan et al. (2015) suggest that enrichment activities and programs positively affect students' motivation to learn, and academic achievement and promote creativity among them. As for Tan et al. (2016), they suggest that a convenient learning environment and enrichment programs and activities can improve the creativity of students of high ability. Adeyemo (2010) adds that enrichment activities can be used for improving students' academic achievement and creativity in physics course. Zakhir (2019) suggests that such activities can be used for improving the language teaching-learning process. He adds that such activities can promote a self-learning approach and life-long learning approach. They can motivate students to learn and improve their academic skills. They make students more sociable (Zakhir, 2019).

Enrichment activities refer to activities that are carried out based on the students' needs, interests, academic achievement level, talents, creativity level, and capabilities (Farsimadan et al., 2015). They aim at achieving the goals of the curricula and developing students' cognitive capabilities, such as: problem solving capabilities (The Institution of Educational Development and Research, 2019). García-Perales & Almeida (2019) suggest that enrichment activities have positive impacts on school adaptation of the students with high intellectual capabilities and achievement. Caetano et al. (2020) suggests that such activities can improve the cognitive and non- cognitive skills of students and develop children.

Due to the significance of academic achievement and creativity, the researchers of the present study believe that it's very important to conduct studies about the effectiveness of teaching methods, activities and programs in improving academic achievement and creativity. The researchers also believe that there is a need to develop programs for improving students' academic achievement and creativity. That is because such program shall contribute to the development of developing countries. Hence, the researchers developed a program titled (creativity lamp) for improving students' academic achievement and creativity. They aimed to explore the effectiveness of this program in improving academic achievement and creativity through the present study.

2. Questions

Q.1. What is the extent of effectiveness of a proposed program titled (creativity lamp) in raising the primary school students' academic achievement in Kuwait?

Q.2. What is the extent of effectiveness of a proposed program titled (creativity lamp) in promoting creativity among the primary school students in Kuwait?

3. Hypotheses

The researchers developed the following hypotheses:

Ha.1. There is a statistically significant difference –at the statistical significance level of ($\alpha=0.001$)- between the mean of students' scores on Torrance pre-test of creative thinking-figural and the mean of students' scores on Torrance post-test of creative thinking-figural

Ha.2. There is a statistically significant difference –at the statistical significance level of ($\alpha=0.001$)- between the mean of students' scores on the academic achievement pre-test and the mean of the students' scores on the academic achievement post-test

4. The Study's Significance

The present study is significant because the results of this study shall contribute to the development of students' creative thinking and raising their academic achievement. In addition, it provides researchers with theoretical literature that facilitate the process of conducting similar studies. The results of the present study are beneficial for decision makers in educational institutions. They shall enable those decision makers to make effective decisions that aim at developing the teaching methods used for promoting creativity

5. The Study's Limits

This study targets primary school students in Kuwait, Kuwait. It was conducted in a primary school named Al-Ma'moun Primary School in Kuwait, Kuwait during the first semester of the academic year of 2019/2020.

6. Definition of Terms

6.1 Theoretical Definitions

-Creativity: It is defined as the process of coming up with original things. Its dimensions may include: (fluency, originality, elaboration, abstractness of titles, avoiding premature closure, and figural creativity) (Dere, 2019)

-Academic achievement: The extent of student's success at college, school or university (Nyström et al., 2018)

-Enrichment activities: They refer to activities that are carried out based on the students' needs, interests, academic achievement level, talents, creativity level, and capabilities (Farsimadan et al., 2015).

6.2 Operational Definitions

-The creativity lamp: (Creativity lamp) is a program that the researchers developed. It consists from several enrichment activities that aim at improving academic achievement and promoting creativity. It was developed based on the study of (Fakhrou and Al-Khajeh, 2019). It was named by the researchers and consists from several visual, auditory and sensory enrichment activities.

-Creativity: It refers to the total score of the respondents in Torrance test of creative thinking-figural.

-Academic achievement: It refers to the total score of the respondents in academic achievement post-test

7. Theoretical Framework and Previous Studies

Creative capabilities can be assessed in terms of: fluency, flexibility, originality and paying attention to details. Fluency refers to one's capability to generate the greatest number of ideas. Flexibility refers to one's capability to think about something from various perspectives. It's refers to one's tendency to change his/her view. Originality refers to one's capability to offer original ideas. Paying attention to details refers to one's capability to pay attention to details when developing an idea or solving a problem (Al-Ayasrah, 2011; Ibrahim, 2015, Jarwan, 2014, and Al-Huwaidi et al., 2013).

Enrichment activities aim at turning students into active learners. They aim at promoting learner autonomy. They aim at making the learning process an enjoyable process. That shall develop students' creative thinking (Abed Al-Fattah, 2013, Al-Sa'edi, 2007; Sterinberg, 2013). They improve students' reading habits, academic achievement and thinking. They promote creativity and a sense of accomplishment among students. They develop social negotiation skills and foster identity development. They offer opportunities to excel in art and sports. They enable students to realize their leadership potentials. They allow students to cooperate and interact with each other. That shall develop students socially. However, teachers must be provided with training about enrichment activities (Adeyemo, 2010)

Enrichment activities aim at developing students' expertise in accordance with their interests and capabilities. They aim at achieving the goals intended from using the curricula. They aim at developing students' cognitive capabilities. The cognitive capabilities include: connecting concepts with each other and finding solutions for non-conventional problems. They include: offering various new ideas (The Institution of Educational Development and Research, 2019). They provides opportunism for youth development, and identity formation. They can develop one's emotional, social, academic, and career-related skills. They improve the mental health of students (Hanks, 2018)

To be specific, enrichment activities aim at making the learning process enjoyable and promoting intellectual curiosity among students. They aim at developing students' higher thinking skills. They aim at providing students with opportunities that aim at developing their problem solving skills. There are various enrichment activities. Such activities include: instructional games, educational puzzles, and mathematical problems (Habeeb, 2014, Sawaftah, 2018). Enrichment activities play a significant role in developing the higher thinking skills and cognitive capabilities of students. They foster one's cognitive development (Al-Lababeedy & Khalayleh, 2013).

Fakhrou (2018), Al-Sameer and Jradat and Hawamdeh (2017) and Al-Lababeedy and Khalayleh (2013) suggest that students' creative and innovative capabilities can be developed through employing several instructional strategies by the teacher inside the classroom. Such activities aim at making the learning process enjoyable, promoting creativity and meeting the goals of the curriculum. The researchers of the present study presented below several studies that address the effectiveness of several instructional strategies in promoting creativity.

Al-Mahwoos (2019) aimed to explore the effectiveness of the brainstorming method in promoting creativity in writing among intermediate school students in Arabic language course. Therefore, he developed a program that was implemented on the members of the experimental group in Reyad, Saudi Arabia throughout the semester. It was found that the brainstorming method plays an effective role in developing students' creative thinking skills. That was concluded through using the verbal scale of Torrance.

Qabad (2010) developed a program for developing the creative thinking skills of talented students. This program includes enrichment activities. The latter researcher used the Torrance test of creative thinking-figural. The sample consists from 41 sixth grade students enrolled in a public school in Makah, Saudi Arabia. It was found that the experimental group show higher score than the control group. It was found that the proposed program plays an effective role in developing all the creative capabilities of students.

Al-Ghamdi (2013) aimed to explore the effectiveness of a proposed multimedia-based program in promoting creativity among the second intermediate female school students in Al-Baha, Saudi Arabia. The sample consists from 40 students who were selected through using the purposive sampling method. Those students were divided into two experimental groups. The first group was taught through adopting a self-learning approach. The second group was taught adopting through adopting a cognitive-based instructional approach. It was found that there is a statistically significant difference – at the statistical significance of 0.01- between the groups in terms of the creative thinking skills. The latter difference is for the favor of the group that was taught through adopting a self-learning approach.

Al-Yazal et al. (2014) aimed to explore the effectiveness of a program in promoting creativity among primary school students. This program integrates the environmental elements. The sample consists from 30 primary school students in Cairo, Egypt. It was found that there is a statistically significant difference between the scores of the groups on the post-test. The latter difference is for the favor of the experimental group (Al-Yazal et al., 2014). Al-Ahmadi (2014) aimed to explore the effectiveness of a proposed program in promoting creativity in writing among the intermediate school female students. The proposed program was implemented on a sample consisting from 70 female students. Those students were divided into two groups; experimental and control groups. It was found that the proposed program has a statistically significant positive impact – at the statistical significance of 0.01- on the students' creativity in writing (Al-Ahmadi, 2014).

Almutairi (2015) aimed to explore the impact of brainstorming on promoting creativity among primary school students in Kuwait. He aimed to explore the impact of the brainstorming method on the problem solving skills of students. The sample consists from 98 students. Those students were divided into two groups; experimental and control groups. The Torrance test for creativity was used. It was found that there are statistically significant differences –at the statistical significance level of ($\alpha=0.05$)- between the scores of the groups. The latter differences are for the favor of the experimental group.

Hu et al. (2015) developed a training program. This program includes videos, mathematical games and digital material. The latter researchers aimed to explore the effectiveness of this program in promoting creativity among primary school students in China. The latter program was implemented on 104 female and male students. It was found that the proposed program plays a significant role in promoting creativity among students. It was found that the fluency level increased among the members of the experimental group. However, such increase is not statistically significant.

Van de Kamp et al. (2015) aimed to explore the impact of visionary and meta-cognitive activities on creativity. They explored that in terms of fluency, flexibility and originality. The sample consists from 147 secondary school students. It was found that there is a statistically significant difference between the scores of the groups in terms of fluency, and flexibility. However, it was found that there isn't any statistically significant difference between the scores of the groups in terms of originality.

Sriwongchai et al. (2015) conducted a study in Thailand. They developed a training program that consists from several mathematical activities. They aimed to explore the effectiveness of this program in promoting innovative thinking among 8th grade students and raising their academic achievement level. It was found that teachers don't provide adequate attention to the development of students' creative thinking. Eight (8) teachers were provided with training about the way of implementing the proposed program. It was found that the proposed program has a statistically significant impact- at the statistical significance level of ($\alpha=0.01$)- on the creative thinking and academic achievement of the sampled students.

Kim et al. (2013) aimed to explore the impact of a proposed program on the development of innovative thinking and problem solving skills of primary school students. This program is based on real life situations. The sample was

divided into experimental and control groups. ANCOVA analysis was conducted. It was found that there is a statistically significant difference- at the statistical significance level of ($\alpha=0.001$) between the score of the groups on the post-test. The latter difference is for the favor of the experimental group.

Chang et al. (2015) found that there is a positive correlation between creative thinking and critical thinking. They implemented a training program on secondary school students. This program is based on activities listed in the curriculum. The sample was divided into two experimental groups. One of the groups received training to develop their creative thinking and the other group received training to develop their critical thinking. During the middle of the semester, each group was provided with the training provided to the other group. It was found that there are statistically significant differences between the scores of the groups on the post-test. It was found that there are statistically significant differences between the scores of the groups on the pre-test. It was found that training develops students' creative thinking and critical thinking skills.

Selvi (2015) conducted a study in Indonesia. He developed a mathematical program. He explored the effectiveness of this program in developing students' creative thinking. Several students were sampled. The latter scholar selected a random sample. The sample was divided into experimental and control groups. It was found that there is a statistically significant difference—at the statistical significance level of ($\alpha=0.05$)- between the scores of the groups on the post-test. It was found that the degree to which the low achievers benefitted from the proposed program is greater than the degree to which the moderate and high achievers benefitted from the proposed program. The latter researcher recommends employing mathematical activities for developing students' creative thinking.

Chen and Wi (2015) aimed to explore the impact of a proposed online program on students' creative thinking and academic achievement. This program was implemented on 186 female and male students in the Taiwanese universities. It was implemented for four months. It was found that the proposed program has a statistically significant impact on the students' creative thinking and academic achievement.

Hodges et al. (2017) aimed to explore the impact of an out-of-school enrichment program on the academic achievement of high-potential students whose families' income is low. An academic achievement test in mathematics and English language was used. It was found that the proposed program can significantly improve the respondents' academic achievement.

Vally et al. (2019) aimed to explore the effectiveness of a creativity training program in developing students' creative production, creative self-efficacy, and neuro-executive functioning. The sample consists from 133 individuals. The program lasted for 13 weeks. It was found that the proposed program developed students' creativity in terms of originality, elaboration, and fluency (Vally et al, 2019). Ritter et al. (2020) aimed to explore the effectiveness of a creativity training program in developing students' creativity thinking skills. They adopted an experimental approach. The sample was divided into experimental and control groups. It was found that the proposed program developed students' ideation skills & increased their cognitive flexibility. However, the proposed program didn't increase students' creativity in terms of originality.

8. Methodology

8.1 Approach

The researchers adopted an experimental approach. The sample was divided into control and experimental groups. The pre-tests were administered to the members of both groups. After the training was finished, the post-tests were administered to the members of both groups.

8.2 Sample

The researchers selected the sample from a school titled Al-Ma'moun Primary School. This school is located in Kuwait, Kuwait. The researchers selected the sample through using the simple random sampling method. The sample consists from 51 male 6th grade students. Those students were divided into experimental and control groups. The experimental group consists from 26 students. The control group consists from 25 students.

8.3 Instruments

The present study involves three instruments. These instruments are: a)- the academic achievement tests, b)- Torrance test of creative thinking-figural c)- a proposed program titled (creativity lamp). This program involves enrichment activities that aim at developing students' creative capabilities and academic achievement.

A) The academic achievement tests

Academic achievement pre-test and post-tests were developed by the researchers and administered.

B) Torrance test of creative thinking-figural

The researchers used used Torrance pre-test and post-test of creative thinking-figural. The latter tests consist from three activities. These activities are: picture construction, picture completion and repeated figures of lines for Form A and repeated circles for Form B. The duration required for taking each test is half an hour. All the activities in each test require similar duration. The guidelines of each test were drafted in a manner that is comprehensible for 6th grade students. They are considered clear by all the respondents. The reliability and validity of the tests were measured. To measure the reliability, the test-re-test method was used. An exploratory sample was selected for measuring reliability. The Pearson correlation coefficient values of the tests are within the range of (0.75-0.92). The Cronbach alpha coefficient values of the tests are within the range of (0.76-0.87). The validity of the pre-tests and post-tests was measured through passing them to a panel of experts to assess them. Those experts suggested that the tests offer reliable results.

C) A proposed program titled (creativity lamp). Information about this program is presented below:

Information about the program:

* (Creativity lamp) is a program that the researchers developed. It consists from several enrichment activities that aim at improving academic achievement and promoting creativity. It was developed based on the study of (Fakhrou and Al-Khajeh, 2019). It was named by the researchers and consists from several visual, auditory and sensory enrichment activities.

* Goals of the program

This program aims at providing the students with several interactive activities. Some of those activities are based on real life situations. Some of those activities are obtained from the curriculum. All those activities are consistent with the students' needs and interests. The program aims at promoting collaboration and cooperation among students. This program aims at promoting a self-learning approach among students. It aims at developing students' creative thinking in several dimensions. These dimensions are fluency, flexibility, originality and paying attention to details.

* Content: The program employs the following strategies:

-Setting titles: Students were provided with opportunities to come up with the greatest number of titles for a specific situation.

-Proposing questions: Students were provided with opportunities to come up with the greatest number of questions about a specific situation.

-The uses of things: Students were provided with opportunities to come up with the greatest number of uses for various things. Such uses should include unfamiliar uses. Some of those things are mentioned in the curriculum.

-The similarity between words: Students were provided with opportunities to come up with the greatest number of words that share something common. Such words may start with a specific letter. They may be mentioned in a specific place. They may stand for a specific color, or etc...

- The connection between words: Students were provided with opportunities to found out the connection between several words.

Imagination: Students were provided with opportunities to imagine something that is impossible to occur. They were asked to show the greatest number of responses in that imaginary situation, provided that those responses are related to one of their senses.

- Arrangements: Students were provided with opportunities to provide the greatest number of events, things or symbols that follow a specific sequence.

- Adding to a text or image: Students were provided with opportunities to add various, and unexpected details to a specific situation. That applies whether the situation is auditory, or visionary situation

* Number of sessions: The program consists from 28 sessions. These sessions are held throughout three months.

* The training method: The program is based on the brainstorming method. It aims at stimulating students' thinking.

* The role of the teacher: In the proposed program, the duties of the teacher are listed below:

- 1) Providing students with activities and stimulating their thinking
- 2) Providing students with examples and exercises that are mentioned in the curriculum

3) Stimulating students through body language, and voice tone

* The way of implementing the program is listed below:

- The teacher dedicates part of the period in order to implement a specific strategy
- The teacher implements shows the way of implementing the strategy to a daily life situation
- The teacher integrates this strategy with the content of the curriculum
- The teacher provides students with opportunities to implement this strategy under his supervision
- The teacher provides students with opportunities to implement this strategy in an independent manner.
- The teacher asks the students to show the greatest number of responses (Fakhrou and Al-Khajeh, 2019, 5-8).

8.4 Procedures of the Study

The researchers followed several procedures for conducting the study. First, they reviewed the relevant literature related to creative thinking and academic achievement. Second, they developed a program based on the study of (Fakhrou and Al-Khajeh, 2019, 5-8). Third, they obtained the required permissions and authorizations. Fourth, they selected the sampled school (i.e. Al-Ma'moun Primary School). They also selected the members of the study groups (i.e. students from the sixth grade/ section A and section B). Fifth, they provided the teachers with training for two weeks at the end of the first semester. They made sure that the teacher mastered the things he was trained about. That was done through letting the teacher implement the things he learnt on an exploratory sample. Sixth, they administered the creativity pre-test (i.e. Torrance test of creative thinking-figural) and the academic achievement pre-test. Then, training was provided to students throughout the second semester. After that, the creativity post-test (i.e. Torrance test of creative thinking-figural) and the academic achievement pre-test were administered. After administering the latter exams, the tests were corrected in accordance with specific criteria. Finally, results were reached and analyzed through using the SPSS program

9. Results and Discussion

To test the study's hypotheses, the SPSS program was used. Results are presented below:

9.1 Results and Discussion Related to the First Hypothesis

The first hypothesis:

Ha.1. There is a statistically significant difference –at the statistical significance level of ($\alpha=0.001$)- between the mean of students' scores on Torrance pre-test of creative thinking-figural and the mean of students' scores on Torrance post-test of creative thinking-figural.

Table (1/A). The t-test for Independent Samples to Explore the Differences between the Total Scores of the Control and Experimental Groups on Torrance Pre-test of Creative Thinking-Figural

Group	Mean	Std.	Levene's	T value	df.	Sig.	Mean difference
Experimental	90.5769	32.3298	0.385	0.027	48	0.978	0.2436
Control	90.3333	30.4869	0.538				

Table (1/B). Descriptive Statistics for the Pre-test and Post-test and the Results of Homogeneity Test for the Total Scores of Torrance Test of Creative Thinking-Figural for the Control and Experimental Groups

Group	The experimental group (26 students)		The control group (24 students)	
	pre-test	post-test	pre-test	post-test
Descriptive statistics				
Mean	90.5769	205.4615	90.3333	84.2800
Std.	32.3298	37.9729	30.4869	14.7296
Variance	1045.214	1441.938	929.449	216.960
Interval	140.00	176.00	130.00	56.00
The least score	13.00	79.00	38.00	64.00
The highest score	153.00	255.00	168.00	120.00
The results of homogeneity test	F value	0.037	Sig.	0.847
The results of Levene's test	F value	10.742	Sig.	0.01

Table (1/C). The Results of ANCOVA Analysis for the Difference between the Means of the Scores of the Control and Experimental Groups on Torrance Post-Test of Creative Thinking-Figural

Source of variance	Sum of squares	df.	Mean square	F value	Sig.	Eta-squared
The correct model	188311.425	2	94155.712	115.285	0.001	
Intercept	79992.449	1	79992.449	97.944	0.001	
Variance (pre-test)	2422.440	1	2422.440	2.966	0.092	
The experimental effect	185718.569	1	185718.569	227.396	0.001	
Error	38385.855	47	816.720			
Total	1305384.000	50				
Corrected total	226697.280	49				
R squared	0.831	Adjusted r squared			0.823	

Table (1/D). The Results of the Least Significant Difference (LSD) Test for the Means of the Scores of the Control and Experimental Groups on the Torrance Post-Test of Creative Thinking-Figural

Group	Mean	The adjusted mean	
		Experimental group	Control group
Experimental group	205.435	-	121.990*
Control group	83.445	121.990 *	-

Based on table (1/a), there isn't any statistically significant difference between the means of the scores of both groups on Torrance pre-test of creative thinking-figural. That indicates that both groups showed similar levels of creativity before conducting the experiment. Based on table (1/b), there is a difference between the means of the scores of the control and experimental groups on Torrance pre-test of creative thinking-figural. The latter difference is for the favor of the experimental group. Based on table (1/c), the latter difference is statistically significant at the statistical significance level of ($\alpha=0.001$). Thus, eta square is 0.829 which is very high. Thus, the proposed program titled (creativity lamp) plays a significant effective role in promoting creativity among students.

The latter result may be attributed to the fact that the program includes a variety of enrichment activities. For instance, the program includes visual, auditory and sensory enrichment activities. It was found that having various types of enrichment activities shall meet the academic needs of students regardless of their learning style. The latter result is consistent with the result concluded by Al-Ahmadi (2014). The latter researcher implemented a program for developing talents. The latter result is consistent with the result concluded by van de Kamp et al. (2015).

Several things were observed by the researchers. For instance, the utilization of the environmental elements play a significant role in stimulating students' interaction with the issues. Providing students with real life experiences stimulated their interaction with each other. Such provision increased the effectiveness of the proposed program in achieving the intended goals. The latter result is consistent with the result concluded by Al-Yazal et al. (2014). The latter researchers suggested that utilizing the environmental elements plays a significant role in developing students' creative thinking. The latter result is consistent with the result concluded by Kim et al. (2013). The latter researchers developed a program that is based on real life situations. The latter result is consistent with the result concluded by Selvi (2015) in Indonesia.

The games and puzzles in the program played a significant role in simulating positive interaction with the program. The same is suggested by Hu et al. (2015) and Sriwongchai et al. (2015) in Thailand. The latter researchers suggested that it is necessary to use puzzles and mathematical games in that programs that aim at developing thinking. In addition, it was found that using modern technologies in displaying the images in the program or auditory or visual files shall stimulate the interaction of the students in the experimental program. The latter result is consistent with the result concluded by Al-Ghamdi (2013) and Chang et al. (2015). The latter researchers conducted a study in Taiwan.

The instruction method adopted by the teacher affected the effectiveness of the proposed program. When the teacher uses body language effectively, the students shall feel encouraged to participate in the teaching-learning process. When the teacher uses his voice tone effectively, the intended goals of the program shall be achieved and the material shall be comprehended by students. When the teacher uses the brainstorming method, the students shall interact actively with the teacher. Using the brainstorming method shall make the learning process enjoyable. The latter result was concluded by Al-Mahwoos (2019), Qabad (2010) and Almutairi (2015).

9.2 Results Related to the Second Hypothesis

Ha.2. There is a statistically significant difference –at the statistical significance level of (a=0.001)- between the mean of students’ scores on the academic achievement pre-test and the mean of the students’ scores on the academic achievement post-test

Table (2/A). The Result of the t-test for Independent Samples to Explore the Differences between the Total Scores of the Control and Experimental Groups on the Academic Achievement Pre-test

Group	Mean	Std.	Levene’s	T value	df.	Sig.	Mean difference
Experimental group	26.23	3.398	1.422	0.943	49	0.350	0.99
Control group	25.24	4.085	0.239				

Table (2/B). Descriptive Statistical Methods for the Scores of both Groups on the Academic Achievement Pre-Test and Post-Test

Group	The experimental group (26 students)		The control group (24 students)	
	pre-test	post-test	pre-test	post-test
Mean	26.23	28.08	25.24	23.00
Std.	3.398	1.896	4.085	2.858
Variance	11.545	3.594	16.690	8.167
Interval	13.00	5.00	16.00	9.00
The least score	17.00	25.00	14.00	18.00
The highest score	30.00	30.00	30.00	27.00
The results of homogeneity test	F value	1.338	Sig.	0.253
The results of Levene’s test	F value	6.895	Sig.	0.05

Table (2/C). The Results of ANCOVA Analysis for the Difference between the Means of the Scores of the Control and Experimental Groups on Torrance Post-Test of Academic Achievement

Source of variance	Sum of squares	df.	Mean square	F value	Sig.	Eta-squared
The correct model	554.372	2	277.186	221.818	0.001	0.902
Intercept	119.065	1	119.065	95.282	0.001	0.665
Variance (pre-test)	225.865	1	225.865	180.749	0.001	0.790
The experimental effect	254.584	1	254.584	203.731	0.001	0.809
Error	59.981	48				
Total	34007.000	51				
Corrected total	614.353	51				
R squared	0.902		Adjusted r squared		0.898	

Table (2/D). The Results of the Least Significant Difference (LSD) Test for the Means of the Scores of the Control and Experimental Groups on the Torrance Post-Test of Academic Achievement

Group	Mean	The adjusted mean	
		Experimental group	Control group
Experimental group	27.799	-	4.510
Control group	23.289	-4.510/=*	-

Based on table (2/a), there isn’t any statistically significant difference between the scores of the control and experimental groups on the academic achievement pre-test. That indicates that both groups shared equivalent academic achievement levels before conducting the experiment. Based on table (2/c), there is a statistically significance difference –at the statistical significance level of (a=0.001)- between the scores of the experiment group and control groups on the academic achievement post-test. The latter difference is for the favor of the experimental group. Thus, the second hypothesis is accepted.

Based on the aforementioned table, the impact size is 0.809. That indicates that the proposed program plays an effective role in raising the academic achievement of the students. Based on the results, the researchers found that the

thinking-based training can significantly improve students' academic achievement. The latter result is consistent with the result concluded by Al-Mutairi (2015), Sriwongchai (2015), Selvi (2015) and Lin et al. (2015).

In the light of the aforementioned results, teachers can use enrichment activities for promoting creativity in several courses. Such courses may include music, art, and physical education courses. The use of enrichment activities shall contribute to developing students' talents. It shall contribute to providing the society with skillful artists. Enrichment activities can be used for improving the academic performance of slow learners and the students who suffer from learning difficulties. That is because those activities play a significant role in improving students' achievement. The researchers believes that such students of low academic achievement should be provided with programs that include enrichment activities.

10. Conclusion and Recommendations

It was found that that the proposed program is effective in raising the academic achievement of students and promoting creativity among them. That means that teachers and curricula developers must provide more attention to enrichment activities. In addition, parents should employ enrichment activities while teaching children at home. That shall positively affect the children's development. It should be noted that having much consistency between the results of the present study and the results of the aforementioned studies indicate that the results of this study are reliable. It indicates that the proposed program titled (creativity lamp) is effective in developing students' creative thinking. In the light of the results, the researchers recommend:

- Implementing similar programs for developing primary students' creative thinking.
- Implementing the proposed program titled (the creativity lamp) in all the primary schools in Kuwait.
- Holding courses and workshops for teachers in the aim of developing their creative thinking skills
- Re-implementing the program on secondary schools in other cities in Kuwait.
- Adding enrichment activities to the curricula of primary school students in Kuwait.

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Contribution

Dr. Abdalnaser led this research, focused on literature and conclusion. In addition, he developed the program of Creativity Lamp. Dr. Sara supervised and applied the program of Creativity Lamp, and took the statistic side.

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