

# Difficulties of Applying Creative Thinking Skills in Teaching from the Perspective of Faculty Members in Najran University, Saudi Arabia

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**Abstract** The current study is an attempt to explore the difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University, KSA. The population consisted of all faculty members in Najran University, 700 faculty members. The sample has been chosen randomly, 248 faculty members. The results revealed that the difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University were medium. Furthermore, there were not statistically significant differences for the level of the difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University due to gender, but the differences attributed to qualification and experience. The study recommended the importance of training the faculty members on methods and activities that develop creative thinking skills they have; and the need to develop new curricula and study pals that include activities, which promote creative and critical thinking among faculty members.

**Keywords:** *difficulties, creative thinking skills, faculty members, Najran University*

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## 1. Introduction

Creative thinking is a mental process in which an infinite number of creative ideas characterized by originality, effectiveness and applicability are produced. It helps provide new methods, styles and ideas and contributes to using information to produce, synthesize and analyze knowledge and shedding light on problem solving and predictability. Creative thinking is characterized by excellence, uniqueness and diversity. It helps widen knowledge and awareness of available things, tools and inputs used in producing creative ideas that may be tested, evaluated and modified in accordance with their functional context.

The concept of creative thinking focuses on creating new ideas, tools, styles, solutions...etc. that have four central items; i.e. flexibility, fluency, originality and sentiment to the problem. They can be used in producing new knowledge based on a basis of information and experiences. Here, creative thinking can be used to reuse or change the methods of using, eliminating or adding to them to produce a new effective idea [1].

Creative thinking skills are based on former experiences, information and knowledge on which creative ideas depend. They are also used in generating the different methods and means of problem-solving, handling surprising situations and benefiting from former experiences. Furthermore, creative thinking is far from stereotype and dullness and depends on flexibility. It can

be consolidated by training. Its skills are characterized by originality, fluency, flexibility, sentiment to the problem, brainstorming, providing multiple solutions to problems and handling issues effectively [2]. It is largely affected by the means followed by the faculty members to consolidate and develop its skills among students. The successful teacher does not only depend on curriculum and its content, but it tends to widen the circle and field of students awareness behind the written text and using and merging imagination with previously studied information to achieve new knowledge and creative ideas. This is one of the most important objectives of the educational process that universities and higher education institutions aim to achieve. Students will move to a new stage in which creative thinking is a must and enables them of making decisions creatively. In addition, creative thinking skills enable them to obtain high academic marks and scientifically and practically achieve success in the future. It also enables them to face problems and provide, prepare and predict creative solutions [3].

Consequently, the problems that face creative thinking in the university stage are addressed, such as: weak capabilities of the faculty in fostering creative thinking skills, requiring subjecting them to training programs to empower and develop their teaching skills that positively reflect on consolidating and developing their skills. Hence, students thinking is improved and supported with the knowledge to be transferred into new real situations [4].

This also appears because of the weak teaching environment as it misses means and tools that negatively

reflect on children and limit their abilities of creation, flexibility of thinking and brainstorming. In addition, adopting and sticking to the traditional educational means negatively affect applying creative thinking skills. Universities need to try new educational practices and strategies that consider students' creative abilities and contribute to their development and reinforcement. Additionally, curricula suffer from a clear shortage of activities and exercises that support creative thinking and focus on its skills [5].

Therefore, faculty members mainly endeavor to face the difficulties of applying creative thinking skills because of their positive and direct effects on empowering students and improving their abilities. This is reflected in their achievement and academic results. It can be achieved by integrating their strategies and applications with classroom teaching strategies [6].

### 1.1. Statement of the Problem

Because of her work as a faculty member and the frequent observations of teaching practices, the author realized the importance of creative thinking and noticed difficulties of applying this teaching type. Skills and processes of creative thinking do not automatically develop in students by the traditional ways of teaching, but this learning hinders their development. In addition, it works on limiting such abilities in their lowest limits and levels, especially recalling. They may be also the result of the educational system, university administration, physical environment or the qualification and low level of the faculty member in teaching creatively.

#### Questions:

The study questions are indicated as follows:

1. What is the level of difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University?
2. Are there statistically significant differences at the level of  $(0.05 \leq \alpha)$  on the level of difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University that can be attributed to gender, years of experience and academic qualification?

### 1.2. Objective

The current study aimed to explore the difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA.

#### Significance

The current study is significant because:

- It will add to the field of creative thinking a new theoretical literature, for the enrichment of the Arab library, in general.
- It identifies the level of difficulties of applying creative thinking skills in teaching from the perspective of faculty members.
- It presents a clear view to officials, especially faculty members, of the difficulties of applying creative thinking skills, their applicability and benefit.
- It is hoped to be a basis and reference of other similar studies.

- It can benefit the faculty members in identifying the level of difficulties of applying creative thinking skills in teaching from their perspective, consolidating the educational processes and enhancing effectiveness.

### 1.3. Concepts

The current study covers a set of terms:

*Creation* is a mixture of abilities, readiness and personal features that can promote mental processes, if the appropriate environment is available, leading to original and useful results to the individual, company, community or worker [7].

*Creative thinking* is a mental process that can be used to achieve new conclusions and ideas and leads to different ideas and thoughts resulting from integrating and analyzing former experiences. It includes various skills that can be summarized in originality, singularity, sentiment to the problem and flexibility [8].

*Difficulties of applying creative thinking:* A set of obstacles and problems that hinder practicing or developing creative thinking or using the process of creation to obtain original outcomes, having artistic or technical value to the community [9].

### 1.4. Limitations

The current study is limited to the faculty members of Najran university during the second semester, 2016.

### 1.5. Theoretical Framework

#### Concept of creative thinking:

Creative thinking means using imagination and ideas creatively to provide solutions to a certain problem or produce new tools and uses. It is one of the most important applications that universities and higher education institutions to use to improve the product of the educational process, achieve academic objectives and consolidate students thinking [10]. It is also known as producing new and creative ideas in the form of a product, service or solutions to some problems. It has some skills to be acquired. It is represented in the creative ideas that may be formulated in the form of practical applications to be used and makes positive changes, solve problems effectively [11].

According to Ju, Mai, Kian, et al. [12], creative thinking as a set of mental processes that depend on skills to be used to create new and creative ideas. They can be applied in a way that helps solve problems, predict risks, develop thinking and create creative ideas.

#### Importance of creative thinking:

Creative thinking is important because it is the main engine of the success of the educational process in universities. Consequently, it can be used by students to achieve their educational objectives in academic achievement and knowledge acquisition. Therefore, the faculty members exert efforts to apply its skills to students to consolidate their creativity, cognitive competence and mental capabilities. It also can be used to guide thinking within modern training programs that contribute to widening their thinking. This positively reflects on

enhancing the educational process and achieving aims that are largely affected by creative thinking, ensure the quality of academic education, reinforce their abilities in transforming ideas to creative applications and make positive changes [11]. Currently, education requires using the newest applications and training programs that can be used to consolidate students' creative thinking by providing information and technological systems that ensure all contexts in higher education institutions and universities, contributing to supplying creative ideas that are characterized by originality, effectiveness and modernity. They can be used as key educational practices that produce quality in education and add a great value to the educational process. The notion of creative thinking is one of the most important factors that try to achieve progress and success in universities that transfer the educational process to a new phase of creative style [13].

#### *Creative thinking skills:*

The faculty members are keen on applying creative thinking skills in universities as they are a key in achieving success academically and organizationally. They appear in the ability to analyze, synthesize and arrange ideas and create new and original one. Furthermore, they appear in the ability to solve problems in new, effective and untraditional ways and supporting arguments in a logical and definite order. In addition, the skill of risk predictability and handling urgent situations creatively and using former experiences, whether personal or by others, are the most important skills [12].

Furthermore, deep thinking and the ability to integrate ideas to create knowledge and problem-solving skill creatively, making rapid and affective decisions in case of emergencies, interacting with new contexts easily, fluency in creating endless ideas, flexibility and originality of thinking, adding new ideas, predictability of problems and creating strategies for facing challenges to decrease negative effects are among its most important skills [14].

#### *Difficulties of applying creative thinking skills:*

Despite the great importance of creative thinking skills and positive effects on students' achievement, progress and fostering mental abilities depending on creation, there are some difficulties of application from the perspective of the faculty members in universities and higher education institutions, such as: lack of the educational environment that hinders encouraging creation, creativity and deep thinking, weak curricula that lack exercises of thinking and motivation and shortage of equipment and tools to be used in making activities that foster creative thinking in the classrooms [15].

In addition, there are weak classroom management in interaction with students and encouraging creative thinking that requires the faculty members pass training programs to develop their abilities and facilitate the strategies of applying creative thinking skills in the classrooms. Consequently, the interaction between students and faculty is fostered and the educational process is motivated in both directions; i.e. sender and recipient. Furthermore, many of the faculty members used to use traditional teaching methods, turning the student into a machine of keeping and memorizing. It also did not motivate thinking and creation, whether in problem-solving, adding new ideas or making changes of using new methods [16].

## 1.6. Review of the Literature

In this section, the most significant Arab and foreign studies reviewed by the researcher are listed chronologically, as follows:

#### *Arab studies:*

Elkomety [17] aimed to reveal the obstacles of creative thinking teaching in social subjects among the female students of the primary stage in Jeddah from the perspective of female teachers and educational supervisors and to prepare a teacher manual to face them. The descriptive approach was applied and the sample covered 177 female teachers of the social subjects. Results illustrated that these obstacles may be attributed to the female teachers, curriculum, management and female supervisors. In addition, there were no statistically significant differences that can be attributed to gender, experience, academic qualification and the specialization of female teachers and supervisors. Elheddaby, Elfolfy and Elaley [18] aimed to define the level of creative thinking skills among students- teachers in the scientific departments of Education and Applied Sciences College in Hajjah. It was applied to 111 female students- teachers in the scientific departments. It used Torrance test. Results showed that the level of creative thinking skills among students- teachers in the scientific departments was low. In addition, there were statistically significant differences between the means of students-teachers' scores in the level of creative thinking according to gender, but there weren't statistically significant differences according to females specialized in physics-biology.

#### *Foreign studies:*

Al-khatib [19] aimed to investigate the effect of using creative thinking skills in developing creative problem-solving skills among female students in Princess Alia University College. It was conducted in Jordan, using the analytical descriptive approach. It was applied to 98 female students divided into two groups; experimental and control. Brainstorming strategies were applied as a course of creative thinking skills. Results revealed that there were statistically significant differences between the two groups in creative thinking that could be attributed to using brainstorming strategy in developing creative thinking skills, in favor of the female students of the experimental group. It recommended exerting more efforts to conduct more studies on the effect of creative thinking skills on improving the academic skills of the female students.

Hilal, Husin & Zayed [20] aimed to identify the obstacles and difficulties among university students, hindering the development of creative thinking skills and their effect on the level of creativity in universities. It was conducted in Malaysia, using the analytical descriptive approach on 459 students selected from different universities. It was concluded that among the most significant difficulties of developing and improving creative thinking skills of university studies were: lack of the faculty members' interest in activities fostering creativity, absence of an educational environment appropriate for supporting them among students, weak curricula and shortage of activities and weak financial support dedicated to universities that prevent tools and means of developing creative thinking skills. Consequently, university administration should hire

qualified faculty members with skills that empower students and develop their creative thinking skills. It should also provide an appropriate educational environment with tools and equipment to consolidate creativity and integrate curricula with modern educational programs and strategies.

Chan [21] aimed to investigate students' attitudes towards collaborative learning based on problem-solving using the skills of creative thinking and critical thinking. It was conducted in China, using the analytical descriptive approach on 100 male and female students, divided into 7 educational groups. It was concluded that students' use of the skills of creative thinking and critical thinking contributed to consolidating abilities of problem-solving, characterized by originality, diversity and individuality to help improve their academic marks and improve their intelligence skills using training activities to motivate creativity. It recommended the importance of inserting new curricula, including activities and exercises to motivate students' creative and critical thinking.

Mihardi, Harahap and Sani [8] aimed to explore the effect of implementing a project-based learning model with KWL worksheet on student creative thinking process in physics problems. It was conducted in Indonesia, using the analytical descriptive approach on 126 physics students. It concluded that applying learning-based model positively affected the improvement of creative thinking and skills development among students. Students' activity increased after trying to solve the worksheet including physics problems and that students revealed creative thinking skills by offering new solutions to problems. Thus, it was recommended to make efforts to implement more educational projects to consolidate students' creative thinking.

#### *Commenting on literature:*

Literature related to the difficulties of applying creative thinking skills from the perspective of faculty members varied regarding objectives, statistical populations, methods of sample's selection, tools of data collection and results. A part of it was conducted to reveal the effect of project-based learning model with KWL worksheet on student creative thinking process [8]. Another part was to reveal the problems of creative thinking learning in social studies [17].

## 2. Methodology

The current study used the analytical descriptive approach, by designing a questionnaire. Then, data were collected, organized, categorized and analyzed using (SPSS). After that, there were displayed in samples and templates. In addition, theoretical and practical literature, whether Arab or foreign, was reviewed.

## 3. Population and Sampling

The study was applied to all faculty members of Najran university, KSA; 700 faculty members. A sample was randomly selected. Thus, 248 questionnaires were distributed to the faculty members who were restored according to (BARTLET) table.

**Table 1. Features of the sample**

Variable	Category	Frequency	Percentage
Gender	Female	119	48.0%
	Male	129	52.0%
	Total mark	248	100%
Academic qualification	Bachelor	33	13.3%
	MA.	63	25.4%
	Ph.D.	152	61.3%
	Total mark	248	100%
Years of experience	Less than 3 years	56	22.6%
	3-5 years	50	20.2%
	6-10 years	41	16.5%
	10 years and more	101	40.7%
	Total mark	248	100%

Table 1 illustrates that while females rated 48.0 %, males rated 52.0 %. It illustrates that the populations' academic qualifications of Bachelor, Master and Doctorate rated 13.3 %, 25.4 % and 61.3 %, respectively.

It also illustrates that years of experience of (less than 3 years), (3-5 years), (6-10 years) and (more than 10 years) rated 22.6 %, 20.2 %, 16.5 % and 40.7 %, respectively. After examining the demographic properties of the sample, it could be concluded that in total they provide a reliable indicator of the populations' competence to answer the questionnaire's questions. Thus, there answers can be used to generate the results.

### 3.1. The Tool of the Study

A questionnaire was designed to measure the level of difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA. It consisted of two parts: The first covered basic (demographic) information, such as: gender, academic qualification and years of experience). The second comprised four fields, i.e.:

- Teaching planning: 1-4 paragraphs.
- Teaching objectives: 5-8 paragraphs.
- Teaching methods and activities: 9-12 paragraphs.
- Teaching evaluation: 13-16 paragraphs.

Each phrase was given grades to be statistically processed, as follows: (totally agree: 5 scores), (agree: 4 scores), (neutral: 3 scores, (disagree: 2 scores) and (totally disagree: 1 score).

The following scale was used to analyze data:

The highest ratio- the lowest ratio/ No. of categories=  $5-1/3= 4/3=1.33$  the length of the category. Consequently, categories are classified, as follows:

- from (1- 2.33) low
- from (2.34-3.67) medium
- from (3.68-5) high

Scores were divided into three levels, as follows:

- Low level if the arithmetic means were between 1 and 2.33.
- Medium level if the arithmetic means were between 2.34 and 0673.
- High level if the arithmetic means were between 3.68 and 5.

*Validity of the study tool:*

The surface validity of the study tool (i.e., questionnaire) was verified by being reviewed by 10 evaluators of the specialized faculty members. Based on their opinions, some paragraphs were added, others deleted and the third group was modified till the author got the final draft.

*Reliability of the study tool:*

To test the questionnaire's reliability to measure and validating the intended factors, the author conducted internal coherence test of its paragraphs, using Cronbach's alpha, concluding that there were cohesion, coherence and consistency among the paragraphs.

**Table 2. Reliability coefficients of the level of difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA**

No.	Domain	Cronbach Alpha
1	Teaching planning	0.607
2	Teaching objectives	0.906
3	Teaching methods and activities	0.852
4	Lesson evaluation	0.800
	Total	0.921

Reliability coefficients illustrated in Table 2 indicated the high reliability and ability of performance, in general, to achieve the aims of the study. It illustrates that the high coefficient was 0.906 and the lowest one was 0.607. This indicates the possibility of results of applying the questionnaire. Values of this coefficient (Alpha > 0.60) are appropriate to applying the questionnaire to the study.

*Tools of analysis:*

After collecting data required by the variables of the study, there were coded to be entered to the computer to extract the statistical results. Statistical methods within the Statistical Package for Social Sciences (SPSS) were used to process data obtained by the field study of the sample. The author used the following statistical methods:

- Cronbach Alpha Test to test reliance on the tool used to collect data in measuring the study's variables.
- Frequencies to identify the distribution of the

sample on the demographic variables.

- Descriptive statistics: arithmetic means, frequencies and percentages to describe the opinions of the recipients on the variables to define the importance of the questionnaire's phrases.
- T-test: to hold a dual comparison in testing the questions of the study to verify the statistical significance of results obtained and determining differences to be attributed to dual variables.
- ANOVA test to test the statistically significant differences of the study's demographic variables.
- Scheffe's test to define post-test differences, if any, in ANOVA analysis.

**The first question: What is the level of difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA?**

To answer this question, the arithmetic means and standard deviations of the difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA, in general, and those of each domain in the questionnaire (as shown in Table 3).

Table 3 illustrates that the difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA were medium, with an arithmetic means of 2.85 and a standard deviation of 0.70. The total arithmetic means of the study were between 3.16 and 2.42. "Objectives of teaching" was ranked first, with an arithmetic means of 3.16 and a standard deviation of 0.90. It was followed in the second rank by "teaching planning", with an arithmetic means of 3.15 and a standard deviation of 0.72. "Teaching evaluation" was ranked third, with an arithmetic means of 2.67 and a standard deviation of (0.80). Finally, "methods and activities of teaching" was ranked with an arithmetic means of 2.42 and a standard deviation of 0.87.

Results of the paragraphs of each domain were, as follows:

- *Teaching planning:*

Arithmetic means, standard deviations and ranks of the difficulties of teaching planning were estimated (as shown in Table 4).

**Table 3. The arithmetic means, standard deviations and ranks of the difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA, in a descending order**

No.	Domain	Arithmetic Means.	St. D.	Rank	Difficulty
2	Teaching objectives	3.16	0.90	1	Medium
1	Teaching planning	3.15	0.72	2	Medium
4	Lesson evaluation	2.67	0.80	3	Medium
3	Teaching methods and activities	2.42	0.87	4	Medium
	Total	2.85	0.70		Medium

**Table 4. Arithmetic means, standard deviations and ranks of the difficulties of teaching planning in a descending order**

No.	Paragraph	Arithmetic Means.	St. D.	Rank	Difficulty
2	Academic plans lack organized ideas to apply creative thinking skills.	3.54	1.07	1	Medium
1	Academic plans focus on the low creative abilities.	3.35	1.06	2	Medium
4	Teaching methods focus on stereotypical methods.	3.11	0.95	3	Medium
3	Lectures' planning if totally far from creative activities.	2.64	1.14	4	Medium
	Total	3.15	0.72		Medium

Table 4 illustrates that the difficulties of teaching planning were medium, with an arithmetic means of 3.15 and a standard deviation of 0.72. The arithmetic means were 3.54-2.64. "Academic plans lack organized ideas to apply creative thinking skills" was ranked first, with an arithmetic means of 3.54 and a standard deviation of 1.07 with a medium degree. "Lectures' planning if totally far from creative activities" was ranked last, with an arithmetic means of 2.64 and a standard deviation of 1.14, with a medium degree.

- *Teaching objectives:*

Arithmetic means, standard deviations and ranks of the difficulties of teaching objectives were estimated (as shown in Table 5).

Table 5 illustrates that the difficulties of teaching objectives were medium, with an arithmetic means of 3.16 and a standard deviation of 0.90. The arithmetic means were 3.37 and 2.64. "Teaching objectives are far from developing the skills of problem perception" was ranked first, with an arithmetic means of 3.37 and a standard deviation of 1.01 with a medium degree. "Teaching skills lack originality skills" was ranked last, with an arithmetic means of 2.90 and a standard deviation of 1.00, with a medium degree.

- *Teaching methods and activities:*

Arithmetic means, standard deviations and ranks of the difficulties of teaching methods and activities were estimated (as shown in Table 6).

Table 6 illustrates that the difficulties of teaching methods and activities were medium, with an arithmetic means of 2.42 and a standard deviation of 0.87. Paragraphs were medium and low. Their arithmetic means

were between 2.98 and 2.64. "Weakness of the fund dedicated to the educational research in teaching processes" was ranked first, with an arithmetic means of 2.98 and a standard deviation of 1.01 with a medium degree. "Displaying thinking steps in problem solving" was ranked last, with an arithmetic means of 2.14 and a standard deviation of 1.06, with a low degree.

- *Teaching evaluation:*

Arithmetic means, standard deviations and ranks of the difficulties of teaching evaluation were estimated (as shown in Table 7).

Table 7 illustrates that the difficulties of teaching evaluation were medium, with an arithmetic means of 2.67 and a standard deviation of 0.80. Paragraphs were medium. Their arithmetic means were between 3.00 and 2.39. "A weak relation between evaluation processes and creative teaching outcomes" was ranked first, with an arithmetic means of 3.00 and a standard deviation of 0.91 with a medium degree. "Evaluation methods focus on achievement only" was ranked last, with an arithmetic means of 2.39 and a standard deviation of 0.99, with a medium degree.

The second question: Are there statistically significant differences at the level of  $(0.05 \leq \alpha)$  on the level of difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA that can be attributed to (gender, years of experience and academic qualification) variables?

- *Gender:*

To answer this question, (T) value of the scores' means of the difficulties of applying creative thinking skills was estimated, according to gender (female-male), in Table 8.

**Table 5. Arithmetic means, standard deviations and ranks of the difficulties of teaching objectives in a descending order**

No.	Paragraph	Arithmetic Means.	St. D.	Rank	Difficulty
5	Teaching objectives are far from developing the skills of problem perception.	3.37	1.01	1	Medium
6	Teaching skills lack flexibility skills.	3.21	1.03	2	Medium
7	The teaching method is not capable of developing educational outcomes on creativity.	3.19	1.02	3	Medium
8	Teaching skills lack originality skills.	2.90	1.00	4	Medium
Total		3.16	0.90	Medium	

**Table 6. Arithmetic means, standard deviations and ranks of the difficulties of teaching methods and activities in a descending order**

No.	Paragraph	Arithmetic Means.	St. D.	Rank	Difficulty
9	Weakness of the fund dedicated to the educational research in teaching processes.	2.98	1.01	1	Medium
10	Avoiding asking open-questions that support generating ideas.	2.31	1.16	2	Low
12	There are gaps between the theoretical and practical aspects of creative teaching.	2.23	0.94	3	Low
11	Displaying thinking steps in problem-solving.	2.14	1.06	4	Low
Total mark		2.42	0.87	Medium	

**Table 7. Arithmetic means, standard deviations and ranks of the difficulties of teaching evaluation in a descending order:**

No.	Paragraph	Arithmetic Means.	Standard deviation.	Rank	Difficulty
16	A weak relation between evaluation processes and creative teaching outcomes.	3.00	0.91	1	Medium
14	Being occupied with evaluating ideas before displaying them to students.	2.73	1.00	2	Medium
15	Interest in students' passing the tests.	2.58	1.13	3	Medium
13	Evaluation methods focus on achievement only.	2.39	0.99	4	Medium
Total		2.67	0.80	Medium	

**Table 8. Arithmetic means, standard deviations and (T) value of male and female participants' responses:**

Domain	Group	Arithmetic mean	(T) Value	Sig. Level
Teaching planning	Females	3.18	.428	.669
	Males	3.14		
Teaching objectives	Females	3.17	.098	.922
	Males	3.16		
Teaching methods and activities	Females	2.37	.865	.388
	Males	2.46		
Lesson evaluation	Females	2.62	1.099	.273
	Males	2.73		

**Table 9. one-way analysis of variance in the sample's responses in studying the means of applying creative thinking skills difficulties in teaching according to the academic qualification**

Section	Source of variance	Total of squares	Freedom degree	Means of squares	F-value	Sig. level
Teaching planning	Between groups	4.942	2	2.471	4.957	.008
	Within groups	122.124	245	.498		
	Total	127.066	247			
Teaching objectives	Between groups	7.648	2	3.824	4.913	.008
	Within groups	190.718	245	.778		
	Total	198.367	247			
Teaching methods and activities	Between groups	1.898	2	.949	1.258	.286
	Within groups	184.907	245	.755		
	Total	186.805	247			
Lesson evaluation	Between groups	9.775	2	4.888	8.083	.000
	Within groups	148.144	245	.605		
	Total	157.919	247			

**Table 10. Post-test comparisons using "Scheffe' Test" in studying the means of the difficulties of applying creative thinking skills in teaching according to the academic qualification.**

Section	Categories	Arithmetic Means.	Bachelor	MA.	Ph.D.
Teaching planning	Bachelor	2.87			
	MA.	3.35	.47403*		
	Ph.D.	3.15	.27517	.19886	
Teaching objectives	Bachelor	2.98			
	MA.	3.46	.47547*		
	Ph.D.	3.08	.09574	.37973*	
Lesson evaluation	Bachelor	2.38			
	MA.	2.99	.60931*		
	Ph.D.	2.61	.22812	.38119*	

Results of [Table 8](#) illustrate that there are statistically significant differences at the level of ( $\alpha \leq 0.05$ ) between the arithmetic means of the two groups (i.e. males and females) participants' responses in all domains. It was more than (0.05) which is statistically insignificant.

- *Academic qualification:*

To answer this question, one-way analysis of variance (ANOVA) was used to study the means of the difficulties of applying creative thinking skills in teaching according to the academic qualification. [Table 9](#) illustrates the results.

[Table 9](#) indicates that there are statistically significant differences at the level of ( $\alpha \geq 0.05$ ) on the scores' means of the difficulties of applying creative thinking skills in

teaching according to the academic qualification. Differences were less than (0.05) in all domains; i.e., statistically significant, except for (teaching methods and activities) where they were higher than (0.05). Thus, Scheffe' Test of post-test comparisons was conducted (as shown in [Table 10](#)).

[Table 10](#) shows the values, illustrating differences and statistically significant categories. Digits indicate that there were differences between the intersected categories according to academic qualification. Hence, arithmetic means are scrutinized to define the category with the highest one; i.e. to which differences tend. Here, they were those of (Master degree) in the three domains.

**Table 11. One-way analysis of variance in the sample's responses in studying the means of applying creative thinking skills difficulties in teaching according to years of experience**

Section	Source of variance	Total of squares	Freedom degree	Means of squares	(F)	Sig. level
Teaching planning	Between groups	3.875	3	1.292	2.558	.056
	Within groups	123.191	244	.505		
	Total	127.066	247			
Teaching objectives	Between groups	4.276	3	1.425	1.792	.149
	Within groups	194.090	244	.795		
	Total	198.367	247			
Teaching methods and activities	Between groups	7.643	3	2.548	3.470	.017
	Within groups	179.162	244	.734		
	Total	186.805	247			
Lesson evaluation	Between groups	5.774	3	1.925	3.087	.028
	Within groups	152.145	244	.624		
	Total	157.919	247			

**Table 12. Post-test comparisons using "Scheffe' Test" in studying the means of the difficulties of applying creative thinking skills in teaching according to the years of experience**

Section	Groups	Arithmetic Means.	Less than 3 years	3-5 years	6-10 years	10 years and more
Teaching objectives	Less than 3 years	2.61				
	3-5 years	2.22	.39214*			
	6-10 years	2.16	.44251	.05037		
	10 years and more	2.51	.09229	.29985	.35022	
Lesson evaluation	Less than 3 years	2.87				
	3-5 years	2.72	.14607			
	6-10 years	2.38	.48802*	.34195		
	10 years and more	2.66	.20271	.05663	.28532	

- *Years of experience:*

To answer this question, one-way analysis of variance (ANOVA) was used to study the means of the difficulties of applying creative thinking skills in teaching according to years of experience. Table 11 illustrates the results.

Table 11 indicates that there are statistically significant differences at the level of ( $\alpha \geq 0.05$ ) on the scores' means of the difficulties of applying creative thinking skills in teaching according to the academic qualification. Differences were less than (0.05) in all domains of (teaching methods and activities and teaching evaluation); i.e., statistically significant. In the domains of (teaching planning and lesson objectives), they were statistically insignificant because they rated higher than (0.05). Thus, Scheffe' Test of post-test comparisons was conducted (as shown in Table 12).

Table 12 shows the values, illustrating differences and statistically significant categories. Digits indicate that there were differences between the intersected categories according to academic qualification. Hence, arithmetic means are scrutinized to define the category with the highest one; i.e. to which differences tend. Here, they were those of (less than 3 years) in the two domains.

## 4. Results and Discussion

Discussing the results of the first question: What is the level of difficulties of applying creative thinking skills in

teaching from the perspective of faculty members in Najran University in KSA?

*Teaching planning:*

Results of the arithmetic means illustrated that the difficulties of teaching planning were medium, scoring 3.15. "Academic plans lack organized ideas to apply creative thinking skills" was ranked first. This can be attributed to a finding that the most important random difficulties that face the faculty members of applying creative thinking skills are "making teaching plans". They do not consider the hierarchy of curricula designed to be taught. In addition, academic plans are limited to the lowest creative abilities. This agrees with the results of Elkometry [17] that revealed problems of creative thinking in teaching to be attributed to curriculum, teachers and management.

"Lectures' planning if totally far from creative activities" was ranked lasted. This could be attributed to the weak preparation of lectures based on creative activities caused by focusing on the stereotypical methods of teaching. Consequently, the difficulty of applying creative thinking skills in the university increases.

*Teaching objectives:*

Results of the arithmetic means illustrated that the difficulties of teaching objectives were medium, scoring 3.16. Paragraph (5), i.e. "teaching objectives are far from developing the skills of problem perception" was ranked first. This could be attributed to a finding that teaching methods have the ability to develop creative educational



outcomes, helping in defining problems and finding their solutions. Paragraph (8), i.e. "teaching skills lack originality skills", was ranked last. This could be attributed to a finding that teaching skills followed by the faculty members lack originality and flexibility, helping them use imagination, supporting it with experience and transforming them into a real situation to cause new positive changes. Thus, they are characterized by originality.

#### *Teaching methods and activities:*

Results of the arithmetic means illustrated that the difficulties of teaching methods and activities were medium, scoring (2.42). Paragraph (9), i.e. "weakness of the fund dedicated to the educational research in teaching processes" was ranked first. This could be attributed to a finding that the faculty members depend on the subject of the course. They avoid asking open-questions that support and foster generating ideas and decrease the gaps between theoretical and practical aspects of teaching. This agrees with the results of Hilal, Husin and Zayed [20], revealing the unavailability of an appropriate educational environment to support creative thinking skills. Paragraph 11, i.e. "displaying thinking steps in problem-solving" was ranked last. This could be attributed to a finding that it is a problem that faces the faculty members. If applied, it will widen the horizon of creative thinking, introducing new ideas and making new changes. This agrees with the results of Chan [21], revealing that using creative thinking skills helps foster the ability to provide problem's solutions.

#### *Teaching evaluation:*

Arithmetic means results illustrated that the difficulties of teaching lessons were medium, with an arithmetic means of 2.67. Paragraph 16, i.e. "a weak connection between evaluation processes and creative teaching outcomes" was ranked first because of faculty members' perception of evaluating creative teaching outcomes due to their occupation of evaluating ideas before displaying them to students and students' passing exams. Paragraph 13, i. e., "teaching methods focus on achievement" was ranked last. This could be attributed to a finding that such teaching methods were stereotypical, depending on achievement outcomes. Consequently, difficulties of creative thinking increased.

Discussing the results of the first question: Are there statistically significant differences at the level of ( $0.05 \leq \alpha$ ) on the the level of difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA that can be attributed to (gender, years of experience and academic qualification) variables?

#### *Gender:*

Results illustrated that there are no statistically significant differences at the level of difficulties of applying creative thinking skills in teaching from the perspective of faculty members in Najran University in KSA that could be attributed to gender. This could be attributed to a finding that the level of applying creative thinking skills' difficulties among the faculty did not vary according to gender.

#### *Academic qualification:*

Results illustrated that there were statistically significant differences at the level of difficulties of

applying creative thinking skills in teaching from the perspective of the faculty of Najran University, KSA to be attributed to academic qualification because it affected their creative thinking skills and decreased difficulties.

#### *Years of experience:*

Results indicated that there were statistically significant differences at the level of ( $\alpha \geq 0.05$ ) in the scores' means of the difficulties of applying creative thinking skills attributed to years of experience because the faculty members' experience affected practicing creative thinking. The more experience existed, the fewer problems were faced.

## 5. Recommendations

The following recommendations have been made:

1. Training the faculty members on methods and activities that develop their creative thinking skills.
2. Inserting new curricula and academic plans, including activities that enhance creative and critical thinking for the faculty members.
3. The necessity of conducting more studies on the difficulties of applying creative thinking skills on other populations to obtain deeper and broader results.

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