

# The Degree Of Practice Of Conceptual Maps By Mathematics Teachers At The Elementary Stage In Jerash Region From Their Point Of View

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## Abstract

This study aimed to determine the degree of practice of conceptual maps by mathematics teachers at the basic stage in Jerash region from their point of view, the arithmetic averages and standard deviations of the degree of conceptual mapping practice by mathematics teachers in the Jerash region were extracted from their point of view, the study shows that There are statistically significant differences ( $\alpha = 0.05$ ) due to the effect of gender, where the value of F is 22.953, with a statistical significance of 0.000, and the differences are in favor of males. And there are no statistically significant differences ( $\alpha = 0.05$ ) due to the effect of experience, where the value of P is 0.600, and the statistical significance is 0.439, and There are statistically significant differences ( $\alpha = 0.05$ ) due to the effect of the educational qualification, where the value of P is 8.013 and with a statistical significance of 0.005, and the differences are in favor of higher than the bachelor's degree.

**Keywords :** conceptual maps, Mathematics teachers, Jerash region and elementary stage.

## Introduction:

After the spread of the constructivist theory of (Jan Piage) in education, many modern learning theories appeared on its approach, which were developed by the scientist (Uzabel) and established the theory of (verbal learning with meaning) where this theory arose in the late twentieth century, It is the theory on which the conceptual mapping strategy is based, This theory is one of the learning theories that are based on the principle that learning does not have a meaning for the learner unless it is linked to his previous knowledge structure formed by him, and concept maps are one of the most important educational applications of this theory. (Al-Sherbiny, 2001, p. 105.).

The concept maps strategy was based on the ideas of (Uzabel), which were developed by the two scientists (Novak & Gowin)) at (Cornell University) in the United States of America, and they benefited from the ideas of (Uzabel) with regard to meaningful learning, in finding an innovative teaching method, which is Concept maps, which depend on the integration of new information with the learner's cognitive structure, thus re-forming his cognitive structure. (Nasr, 2009, pg. 1371) quoted from (Qatami and Al-Rousan, 2005, p. 14).

Conceptual maps are an illustrative means used in educational institutions, in order to clarify all the basic and sub-concepts that include the prescribed course, and also contain multiple and diverse information regarding the nature of its

teaching, which includes the time period specified for the study process, and the various and multiple educational sources.

The first use of the idea of conceptual maps in the teaching system began in 1963, and it was associated with institutions that are based on the implementation of the idea of advanced and advanced education, which had an effective role in participating in providing assistance to students, by finding a reference plan for them in order to understand how they deal with the content of the subject The course they will study, and familiarization with the most important definitions included in the sections of the prescribed course. With the passage of time, conceptual maps became among the many and varied ideas applied in many educational institutions, which resort to the use of a number of panels showing the school sections, , and also shows the names of the educational teachers in them, the locations of the classroom environments, and other information, which contains all the basic details related to the prescribed subjects that are taught on the school campus. These conceptual maps have developed in education through the computer, which has had an effective role. Through the issuance of digital types of concept maps.

Conceptual maps are a horizontal and vertical arrangement of a number of definitions and concepts and focus on the use of the pyramid shape during their distribution, which is divided into several classifications, among which there are interconnected shares through a set of basic and sub-relationships, and the importance of conceptual maps is through providing assistance during the clarification process. Concepts from the unclear content mentioned in the course material. It is used as an appropriate method for critical thinking, which is based on motivating and encouraging students to express their opinions through the conceptual map. It also focuses on the application of a specific type of

education during the semester. It is one of the types of visual arts, which is easy for the student to understand and assimilate and to clearly recall all the details of the subject.

Conceptual maps are schematic forms that include a set of concepts, arranged and sequential from top to bottom. The general or comprehensive concept is placed at the top of the map, and the gradation is done from top to bottom, where the less general concepts, until we reach the specific concepts, end with illustrated examples, taking into account That the concepts that have the same degree of generality be in one horizontal plane, and the concepts are linked by lines or arrows on which are written connecting words that explain the meaning of the relationship between them (Nasr, 2009, p. 1383).

Some of them define it as a sequential hierarchical structure in which the most general and comprehensive concepts are placed at the top of the map, and the most specific concepts at the base of the map, and it represents the relationships between concepts through words or phrases written on the lines connecting any two concepts. (Al-Sherbiny, 2001, p. 107) It is a method that teaches students the skills of analysis, the ability to find relationships, set priorities, and plan their ideas in a logical and scientific way. Hence, it can be said that Concept Maps can play an important role in organizing and controlling the teaching and learning process, through organizing the content of the curriculum. It highlights the role of concept maps in finding the appropriate method that shows the interconnected chains between the concepts in the curriculum, which facilitates the students' comprehension of the study material and the achievement of effective learning. (Al-Sherbiny, 2001, p. 116).

Concept maps are defined as graphic planning that has two dimensions, in which the concepts of academic subjects and research are placed in a hierarchical manner; So that at the top

of the pyramid are placed the materials of the basic concepts of high comprehensiveness and little privacy, and placed at the base of the pyramid the materials of concepts with low comprehensiveness and high privacy, and these concepts are linked between each other through an understandable relationship. Concept maps are a way to represent the relationships between ideas, images, and different words, It is used in the areas of planning, teaching, summarizing, and evaluating academic subjects, and knowing the students' ability to understand and assimilate those concepts in them, in addition to testing the student's ability to remember previous concepts.

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Joseph Novak developed the concept map technology, with the help of the research team at Cornell University in 1970 AD, which was considered a way to represent knowledge sciences for young students, and over time it was used as a tool to increase learning from different sciences, by representing technical knowledge by individuals and groups. Education, and Novak relied on David's cognitive theory Ausubel or what is known as the theory of assimilation in these maps, and he stressed the importance of

having prior knowledge before starting the learning process with these maps, and that the most influential element or factor in the learning process is the learner himself, Novak taught young students at the age of six years, and provided them with teaching aids that facilitate the process of their assimilation of science.

From the above, the main task of concept diagrams appears; They work to clarify the main ideas that the teacher should focus on when learning any educational task, and to clarify the paths and paths that the teacher and the learner can take to link the meanings of the concepts, and after completing the learning task, the concept charts provide the teacher, or the learner, with an Schematic of what has been collected.

Conceptual maps are a means that the teacher resorts to in order to develop and advance the education process, in order to clarify concepts and work to train the person on skills, and to accustom the educated person to sound habits and the growth and progress of trends. Fundamental to university education, The importance of concept maps comes from their multiplicity of uses in planning, implementation and evaluation. They are used to assess students' prior knowledge about a subject, and to evaluate students' knowledge and understanding of new concepts. They are also used in planning and teaching the lesson material, as well as in summarizing the lesson material. They are also used as a tool for evaluation. The lesson at the end of the lesson (Qatami and Al-Rousan, 2005). The concept map is of great importance to the learner and the teacher alike, as it helps the learner to search for relationships between concepts and the similarities and differences between them, linking new concepts to previous concepts, distinguishing similar concepts and separating important information and marginal information, and making him a listener, categorizer, organizer and order of concepts, and helps him in Revealing the ambiguity or inconsistency of the text

material while preparing the concept map, and it gives the learner some science processes to achieve meaningful learning and help him solve problems, increase academic achievement, and retain learning (1998, Ormord), (2009, Ozkan & Ozdilek) pointed out the great importance of the concept map in developing educational models that lead to improving the achievement performance of students, as concept maps are useful tools in enhancing the learner's academic achievement and work to support and strengthen it, give meaning to concepts, and deepen their understanding of the concepts in any unit of study and provide the factor of correlation and harmony between the elements of the educational material.

As for the teacher, it helps him to observe the progress of students and their abilities in building new scientific knowledge on them. Conceptual maps are used for planning and for learning. They are also a tool for evaluating students at all levels of education. They also enhance the learning process and increase academic achievement in science, which led to their widespread use in all fields of scientific education, to the extent that they became an integral part of courses, textbooks and other references related to teaching Maths. A specific direction is not required to create the conceptual map (from bottom to top; from left to right; from inside to outside), but it is desirable that the direction of the line representing the relationship between two concepts should be from top to bottom.

Concept maps achieve the principle of organization by taking the idea of hierarchy in building the ideas contained therein, and this gives the map meaning for these concepts and the sequence in dealing with the lesson. As for the principle of continuity, it can be achieved through the successive implementation of the teaching of concepts as indicated by the arrow correlations illustrated by the conceptual map. As for the network relationships and intersections between concepts, they reflect the image of integration

between concepts. The teacher proceeds to a preparatory stage for the lesson, in which he refers to the lesson map, using it as an advanced organizer, to take a pre-conceived idea of the lesson and all the elements of knowledge in it.

When the teacher finishes the process of implementing the lesson, there are two directions for using the map. Either the students, in groups or individually, create a concept map and submit it to the teacher for review and evaluation.

The steps of conceptual maps determine after the lesson to be explained, analyze its content, determine the objectives expected to be achieved by students, and prepare a concept map. The lesson is presented according to the following stages:

1- The teacher announces the name of the main concept, and displays the board that contains the concepts

The subject of the study.

2- The teacher divides the students into groups, and chooses a name for the group from the new lesson, such as the multiplication group, the division group...etc.

3- The teacher defines the concepts.

4- The teacher presents the concepts of the current lesson according to a hierarchy from the most comprehensive concepts to the least comprehensive concepts, without using linking tools between these to each other to put words, and appropriate linking tools.

5- The teacher asks the students to draw the concept map collaboratively, and after noticing

Their work and discussion in it presents the conceptual map that he prepared in advance.

6- The teacher presents a set of examples on the topic. so that you are married

opposite, and graded from easy to difficult.

7- The teacher asks questions about the lesson, provides appropriate reinforcement, and provides feedback.

8- Evaluating learning concepts, deducing the rule, and writing it on the board through the map conceptual, and assigning students to draw the map on their notebooks.

9- Homework: solving the exercises, assigning students to prepare a new lesson, and preparing a concept map for it. (Maqableh , Al-Falahat, 2010)

### **Study problem and questions:**

It is noticeable that there is a clear weakness among students in general in Jordan in the subject of mathematics, and this weakness is evident through the continuous complaints by students every year about the questions of the high school exams, and the low success rates in this subject. Perhaps the most prominent reason for weakness is the students' lack of mental skills; In most cases, students do not possess sufficient mental skills, and this requires the search for effective teaching methods based on exploiting the maximum mental energies of the learner. One of these means is the use of concept maps by mathematics teachers in the basic stage, and the study answers the following questions:

The first question: What is the degree to which mathematics teachers in the basic stage in Jerash region practice conceptual maps from their point of view?

The second question: Are there statistically significant differences ( $\alpha = 0.05$ ) in the degree to which mathematics teachers in the basic stage in Jerash region practice conceptual maps from their point of view due to the variables of gender, experience, and educational qualification?

### **Purpose of the study**

The current study aimed to reveal the degree of practice of conceptual maps by mathematics teachers at the basic stage in the Jerash region.

It also aimed to reveal the size of the differences in the degree to which mathematics teachers practice conceptual maps at the basic stage in Jerash region due to gender, experience, and qualification variables?

### **The importance of studying**

The importance of this study lies in that it deals with a variable of conceptual maps and their use in teaching mathematics, which is a teaching strategy that may contribute to encouraging mathematics teachers to employ modern techniques to solve the problem of general weakness in mathematics in Jordan. It is also hoped that this study will enrich the Arabic library so as to help students in the assimilation of mathematics, and thus increase their academic achievement. It is also in response to the continuous calls made by the Ministry of Education, and in response to the recommendations that emerged from the conferences and educational meetings, all of which focused on directing education towards developing thinking skills through curricula and teaching strategies practiced by teachers in the classroom.

### **Procedural definitions**

This study dealt with the following concepts:

1. Conceptual maps: They are schematic forms that include a set of concepts, arranged and sequential from top to bottom. The general or comprehensive concept is placed at the top of the map, and the gradation is done from top to bottom, where the less general concepts, until we reach the specific concepts, end with illustrated examples It has, bearing in mind that the concepts that have the same degree of generality are in one

horizontal level, and the concepts are linked by lines or arrows on which are written connecting words that explain the meaning of the relationship between them (Nasr, 2009, p. 1383).

2. Elementary stage: Basic education is compulsory and free education in government schools. A student is accepted in the first year of basic education if he has completed the sixth year of his life at the end of December of the school year in which he is accepted.
3. Mathematics: the study subject for the basic stage according to the system of the Ministry of Education in public schools in Jordan

### Study limitations

The results of this study can be generalized under the following limitations:

- 1- This study was limited to male and female primary school teachers in government schools affiliated to the Directorate of Education in Jerash Governorate. The sample was also selected by the available method from the study population who are on the job for the year 2021/2022 in the semester second semester of the academic year.....
- 2- The results of this study were determined in the scale prepared for this study.

### Method and Procedure

#### The study population and its sample

The study population consisted of all primary school teachers, males and females, in government schools affiliated to the Directorate of Education of Jerash Governorate in northern Jordan. The number of schools is 5 according to the statistics of the Department of Educational Statistics for the academic year 2022 a sample of

the study population was chosen randomly, and their number was 106.

#### Previous studies

The study (Youssef, Afaf 2019) aimed to reveal the effect of the concept maps strategy in improving the grammatical skills of seventh grade students. The study members consisted of (60) students, with two divisions, randomly selected from among the seventh grade people in King Abd School The second God of Excellence, in the Irbid region for the academic year 2016/2017, and one of the people was randomly selected to represent the experimental group that was taught using the concept maps strategy, while the second group was considered the control group that studied grammar using the traditional method. The results of statistical analyzes showed that there were significant differences Statistics between the average scores of the experimental and control groups on their performance in the grammar test, in favor of the experimental group. The results of the T-test for two independent groups revealed a statistically significant presence between the averages of the experimental and control groups in my skills: distinguishing between grammatical concepts, and applying grammatical concepts in useful sentences. , in favor of the experimental group.

The study (Maqabilah Al- Falahat 2010) also aimed to investigate the effectiveness of the concept maps strategy in the achievement of eighth-grade students in the subject of Arabic grammar compared to the usual method by answering the following main question: Are there statistically significant differences in the eighth-grade students' achievement in Arabic grammar is attributed to teaching method, gender, and the interaction between gender variables and teaching method? The study population consisted of the eighth grade students in the Directorate of Education of the Petra District for the second semester of the academic year 2005/2004 AD, and their number was (574) students. The effect

of teaching using conceptual maps on the achievement of the eighth grade students in grammar in two divisions, and the experimental one consisting of two divisions that was studied using a mapping strategy.

Concepts. The study used two tools; The first: an educational material organized using conceptual maps, and the second: an achievement test consisting of (30) multiple-choice items. The validity of the test and the conceptual maps were confirmed by presenting them to specialized arbitrators. The following results appeared: There were statistically significant differences in favor of the experimental group that was studied using the concept mapping strategy, attributable to gender, and the absence of statistically significant differences due to gender, and the absence of significant differences due to the interaction between gender and method.

The study (Al-Balawi, Al-Juhani, 2017) entitled the effect of using concept maps on the academic achievement of sixth-grade students in social and national education, indicated that there are no statistically significant differences between the achievement averages of the control group that studied in the usual way and the experimental group that studied using concept maps At the level of memory of Bloom's cognitive levels. In order to test this hypothesis, the arithmetic averages and standard deviations of the students' achievement in the achievement test were calculated at the level of remembering according to the method of teaching, and that there are no statistically significant differences between the averages of the achievement of the control group that studied in the usual way and the experimental group that studied using concept maps at the level of understanding from Bloom's Cognitive Levels. In order to test this hypothesis, the arithmetic means and standard deviations of the students' achievement in the achievement test were calculated at the level of understanding according to the teaching method followed, and then the t-

test was used for independent samples to reveal the significance of the differences between these averages.

The study (Al-Rahamna, Aziz, Al-Shaalan, Amal, 2020) aimed to develop creative thinking skills among talented tenth grade students in King Abdullah II Schools for Excellence, through the application of a program based on the use of conceptual maps in teaching and its impact on that. The quasi-experimental approach was applied to a sample of 86 male and female students who were distributed into two experimental and control groups, where their number was (43) students for the experimental group and (43) for the control group. It was applied to the students of the experimental group only, and the results revealed that there were statistically significant differences between the average responses of the members of the experimental and control groups in the post application in favor of the experimental group, and there were no differences between the average responses of the experimental group members in the post and follow-up applications, which indicates the effectiveness of the program and the survival of its effect. In developing the level of creative thinking skills of the study sample.

#### **Statistical Standard:**

The five-point Likert scale was adopted to correct the study tools, by giving each of its paragraphs one degree out of its five degrees (strongly agree, agree, neutral, disagree, strongly disagree), and it is represented digitally (5, 4, 3, 2, 1) on Ranking, and the following scale has been adopted for the purposes of analyzing the results:

From (1.00 - 2.33) few

from) 2.34- 3.67 (medium

From (3.68-5.00) Large

The scale was calculated by using the following equation:

(maximum scale (5) - minimum scale (1)) /  
number of required categories (3)

$$=(5-1)/3=1.33$$

And then add the answer (1.33) to the end of each category.

### Construction veracity:

To extract the construct validity of the scale, the correlation coefficients of the item with the total score of the scale were extracted in an exploratory sample from outside the study sample that consisted of (30)--, and the coefficients of the item's correlation with the total score of the scale ranged between (0.40-0.83), and the following table shows that.

Table(1) Correlation coefficients between the paragraph and the total score of the scale

paragraph number	correlation coefficient	paragraph number	correlation coefficient	paragraph number	correlation coefficient
1	.83(**)	11	.75(**)	21	.82(**)
2	.41(*)	12	.74(**)	22	.74(**)
3	.40(*)	13	.64(**)	23	.45(*)
4	.64(**)	14	.79(**)	24	.72(**)
5	.42(*)	15	.69(**)	25	.47(**)
6	.75(**)	16	.68(**)	26	.47(**)
7	.69(**)	17	.57(**)	27	.69(**)
8	.71(**)	18	.79(**)	28	.68(**)
9	.77(**)	19	.76(**)	29	.56(**)
10	.81(**)	20	.43(*)		

\* Statistically significant at the significance level (0.05).

\*\* Statistically significant at the significance level (0.01).

It should be noted that all coefficients of Correlation was acceptable and statistically significant, so none of these items were deleted.

### Stability of the study instrument:

To ensure the stability of the study tool, the test-retest method was verified by applying the scale, and reapplying it after two weeks on a group

outside the study sample consisting of (30), and then the Pearson correlation coefficient was calculated between their estimates in both times if it reached ( 0.86).

The stability coefficient was also calculated using the internal consistency method according to Cronbach's alpha equation, if it reached (0.82),

and these values were considered appropriate for the purposes of this study.

### The study sample:

Table (2) Frequencies and percentages according to the study variables

	Categories	Repetition	The ratio
Gender	Male	88	47.8
	Female	96	52.2
experience	10 years or less	99	53.8
	More than 10 years	85	46.2
Qualification	Bachelor's degree or less	128	69.6
	Higher than Bachelor	56	30.4
	The total	184	100.0

**The first question:** What is the degree to which mathematics teachers in the basic stage in Jerash region practice conceptual maps from their point of view?

To answer this question, the arithmetic averages and standard deviations of the degree of conceptual mapping practice by mathematics teachers in the Jerash region were extracted from their point of view, and the table below illustrates this.

Table (3) Arithmetic averages and standard deviations of the degree of practice of conceptual maps by mathematics teachers at the basic stage in Jerash region from their point of view arranged in descending order according to the arithmetic averages

Rank	Number	Paragraphs	Average	standard deviation	Level
1	20	Use concept maps to help students distinguish between different .geometric shapes in mathematics	3.88	.631	High
2	25	I make sure to use concept maps to help simplify some mathematical concepts for students	3.86	.558	High
3	23	Make sure to use concept maps to illustrate some of the geometric .shapes in mathematics	3.83	.424	High

Rank	Number	Paragraphs	Average	standard deviation	Level
4	29	I am keen to use concept maps to solve the mathematical problems that .students face in mathematics	3.81	.732	High
5	2	Relate concept maps to the modern .learning strategy for mathematics	3.80	.599	High
6	26	I am keen to use concept maps to solve the problems that students face .in mathematics	3.77	.638	High
7	6	I help students to organize ideas clearly using concept maps for .mathematics	3.76	.578	High
8	1	Make sure to use the concept maps related to the topic of the mathematics .lesson	3.75	.676	High
9	9	I work on linking the conceptual maps .of mathematics to the students' reality	3.75	.788	High
10	11	I prepare remedial plans for weak students using concept maps in .mathematics subjects	3.73	.757	High
11	18	I discuss concept maps with students to determine their mastery of mathematics	3.70	.765	High
12	15	Ensure the permanence of the use of conceptual maps in learning .mathematical concepts	3.68	.775	High
12	19	Varied use of concept maps to help students retain mathematical concepts	3.68	.822	High
12	24	Varieties in the use of conceptual maps in mathematics for their role in improving students' academic .achievement	3.68	.782	High

Rank	Number	Paragraphs	Average	standard deviation	Level
15	4	The nature of the mathematics subject content requires the teacher to apply .conceptual maps	3.66	.726	Medium
16	3	I follow students' activities while .mapping concepts for mathematics	3.64	.604	Medium
17	5	Organize students' times while preparing concept maps for .mathematics	3.64	.541	Medium
18	17	Participate students through concept .maps in building geometric shapes	3.62	.709	Medium
18	21	Participate students in constructing concept maps to draw their attention .towards mathematics	3.62	.724	Medium
20	22	I make sure to use mathematical concepts to provide feedback on .topics in mathematics	3.61	.724	Medium
21	12	Variations in the use of concept maps to accommodate students' individual differences in mathematics	3.58	.833	Medium
22	27	I am keen to use conceptual maps to develop scientific research skills for .mathematics	3.58	.685	Medium
23	14	I am keen on the horizontal integration of the mathematics subject with other academic subjects using .conceptual maps	3.56	.781	Medium
23	16	Participate students in building concept maps to identify the main topics sections of the mathematics lessons	3.56	.805	Medium
25	13	Develop students' self-assessment of mathematics through conceptual .maps	3.51	.794	Medium

Rank	Number	Paragraphs	Average	standard deviation	Level
26	8	Assign students to complete activities related to mathematics topics using .concept maps	3.48	.830	Medium
26	10	I evaluate students' performance during conceptual mapping of the .mathematics subject	3.48	.766	Medium
28	28	I am keen to use concept maps to develop creative thinking and critical thinking skills for the mathematics .subject	3.46	.815	Medium
29	7	Put the students into groups to prepare concept maps for the mathematics .subject	3.44	.779	Medium
		Total degree	3.66	.419	Medium

Table (3) shows that the arithmetic averages ranged between (3.44-3.88), where Paragraph No. (20) states, "I use conceptual maps to help students distinguish between different geometric shapes in mathematics" came in the first place with an arithmetic average of ( 3.88), and paragraph No. (25), which states "I am keen to use conceptual maps for their contribution to the simplification of some mathematical concepts for students" came in second place with an arithmetic average of (3.86), while paragraph No. (7) and its text "I distribute the students in groups to prepare The conceptual maps of the Mathematics topic" ranked last, with a mean of (3.44). The arithmetic mean of the degree of conceptual mapping practice by mathematics teachers at the basic

Table No. (4) Arithmetic averages and standard deviations of the degree to which mathematics teachers in the basic stage in Jerash region practice conceptual maps from their point of view according to the variables of gender, experience, and educational qualification

stage in Jerash region from their point of view as a whole was (3.66).

**The second question:** Are there statistically significant differences ( $\alpha = 0.05$ ) in the degree to which mathematics teachers in the basic stage in Jerash region practice conceptual maps from their point of view due to the variables of gender, experience, and educational qualification?

To answer this question, the arithmetic averages and standard deviations of the degree of practice of conceptual maps by mathematics teachers at the basic stage in Jerash region were extracted from their point of view according to the variables of gender, experience, and educational qualification, and the table below shows that.

		Average	Standard division	Number
Gender	Male	3.80	.374	88
	Female	3.53	.417	96
Experience	10 years or less	3.67	.421	99
	More than 10 years	3.65	.418	85
Qualification	Bachelor's degree or less	3.61	.440	128
	Higher than Bachelor	3.78	.342	56

Table (4) shows an apparent discrepancy in the arithmetic averages and standard deviations of the degree of practice of conceptual maps by mathematics teachers at the basic stage in Jerash

region from their point of view due to the different categories of variables of gender, experience, and academic qualification. Table (5).

Table No. (5) Triple variance analysis of the effect of gender, experience, and educational qualification on the degree to which mathematics teachers in the basic stage in Jerash region practice conceptual maps from their point of view.

Contrast source	sum of squares	degrees of freedom	mean squares	q value	Statistical significance
Gender	3.499	1	3.499	22.953	.000
Experience	.092	1	.092	.600	.439
Qualification	1.221	1	1.221	8.013	.005
Rung	27.437	180	.152		
total	32.119	183			

It is evident from Table (5) that:

- There are statistically significant differences ( $\alpha = 0.05$ ) due to the effect of gender, where the value of F is 22.953, with a statistical significance of 0.000, and the differences are in favor of males.

- There are no statistically significant differences ( $\alpha = 0.05$ ) due to the effect of experience, where

the value of P is 0.600, and the statistical significance is 0.439.

- There are statistically significant differences ( $\alpha = 0.05$ ) due to the effect of the educational qualification, where the value of P is 8.013 and with a statistical significance of 0.005, and the differences are in favor of higher than the bachelor's degree.

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