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The Degree To Which Mathematics Teachers in The Upper Basic Stage in Nablus Governorate Possess The Concept of Conceptual Understanding From Their Point of View

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Abstract: The current study aimed to identify the degree to which mathematics teachers at the basic stage in a governorate possess Nablus for the concept of conceptual understanding from their point of view. The study sample consisted of (102) mathematics teachers, with a percentage of (26%) From the study population, and to achieve the objectives of the study, a questionnaire consisting of (25) items was constructed, and the validity and reliability of the tools were verified The study was carried out by applying it to a survey sample from the study population and outside the study sample, and the researcher used the descriptive method Analytical analysis of the suitability of the study for such research, and the results of the study showed that the overall degree of mathematics teachers' possession The concept of conceptual understanding (3.547) was high, and the results of the study showed that there were no statistically significant differences depending on the variable Gender, scientific specialization, and teaching experience. The study recommended the necessity of using multiple representations of concepts that work To deepen conceptual understanding, provide electronic equipment within schools, and give teachers training tools on how to use and deal with it.

Keywords: conceptual understanding, conceptual knowledge, conceptual linking, multiple representations, problem solving

INTRODUCTION

Mathematics is considered one of the important and necessary sciences for any individual, regardless of his culture, because it takes up an important place in life, and the individual needs it in many matters related to his life (Abbas and Al-Absi, 2007). Mathematics is the language of communication in our daily life, a necessary basis for the rest of the various sciences, and an important tool. It is essential for understanding the environment in which we live, and it is also considered a means of communication at the global and international level, in light of the multiplicity of cultures. Therefore, it requires intensified efforts by those working in the field of education to achieve a better sports education for all students, starting from the classroom (Al-Rifai, 2019).

Teaching and learning mathematics has received great attention over the centuries, and interest has increased recently after many changes and developments have occurred efforts began to be made by specialists in the teaching process, including teaching methods, preparation, training and qualification of teacher educators and global calls for the development and improvement of mathematics curricula and methods for evaluating learning, the concept of conceptual understanding emerged for mathematics, it is necessary to understand what it means and how to develop and evaluate it (Bani Atta, 2018).

Understanding is one of the necessary goals to facilitate the way to teaching and learning mathematics, and each person is unique in how he understands things linking ideas, just as understanding varies from one person to another, understanding is considered to be the development of links between ideas, facts, and processes, and that it is a work relationships between concepts facilitate the perception and understanding of new information by linking similarities and differences to overall relationships and relationships moving between diverse models and thus developing understanding is the process of linking representations into an organized and coherent network. This process requires recognizing the relationships between a piece of knowledge, network elements, and the structure as a whole (Barmby *et al.*, 2009).

The student can connect conceptual maps and then works to form relationships between concepts and mathematical ideas that are built in which relationships overlap and integrate to become more coherent and interconnected, and procedural (automatic) understanding, automatic understanding of the concept occurs by linking it with concepts that have not been reviewed by the learner, and from here he has a deficiency in understanding, that is, in other words, by memorizing separate and incomplete facts. With other

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ideas, it is done through; Therefore, the understanding process is very weak because the linking process in that case is weak (Johanston *et al.*, 2010).

Conceptual understanding is not the process of providing the student with information and knowledge, but rather a process of interaction between the environment surrounding the student the mathematical knowledge he has is one of the most important factors that the student needs in the learning and teaching process to make up ideas mathematics is tangible by representing it with words, pictures, or symbolic representation, in order to deepen conceptual understanding in a good way. And overcoming weaknesses during the learning process. It is preferable to link the mathematical concept to the environment surrounding the student (Hussein, 2014).

Conceptual understanding contains several sections, including: conceptual knowledge - multiple representations of concepts – Conceptual linkage – Clarification of procedures- Solve problems, and maintain conceptual understanding of facts and the learned techniques are connected, which facilitates the process of remembering, using and reconstructing (Mahendra & Purwati, 2019).

In addition to what Benhour did, mentioned in (Arbie *et al.*, 2020), to divide the components of concept-rich learning into : five components: the first component is Practice, which means that in order for the individual to learn the mathematical concept, he must do two tasks Practice and apply it by doing many activities that reinforce the concepts, training on them, and repeating them. The second component is diversity of contexts, which are intended to discuss students' solutions and identify students' mistakes to avoid them in the future, the third component is Preparing the meaning of the concept, which consists of clarifying the concept and representing it with symbols and words, which leads to increasing students' understanding of it, the fourth component is Recontextualization, which means formulating the concept in another way through linking new knowledge to previous knowledge, correcting misconceptions and knowledge, and the last dimension, which is verification, is completed this is done by urging students to transfer the knowledge and concepts that the student has learned to the new life situations and problems that he will face in the future.

Balka, Hull, and Miles (2015) point out that a good starting point in the process of conceptual understanding states: previously reviewing the principle of the learning process, it is believed that students learning mathematics for understanding makes them self-confident and aware it revolves around them, they are able to solve mathematical problems that require time and effort, and they have the ability to explore mathematical ideas new students, thus obtaining highly competent learners.

The National Council of Teachers of Mathematics (2000) points out the importance of conceptual understanding which played an important role in students' performance, and is considered a fundamental goal in the process of learning and teaching mathematics, and conceptual understanding also reflects the extent to which students are able to justify situations that require awareness and understanding of definitions and relationships. It is concluded that students who have the ability to distinguish concepts and provide examples, define principles, understand and interpret symbols and meanings, and formulate definitions in a correct way, comparing concepts, identifying the differences between them, and linking the concepts to each other, then they will be able to solve mathematical problems easily.

THE STUDY PROBLEM:

The teacher has an important and key role in the process of students' acquisition of mathematical concepts, and this will not happen unless teachers possess mathematics for mathematical concepts in general, and in particular, mathematics teachers' possession of conceptual understanding is of great importance in supporting self-confidence in the teaching and learning process, it helps in learning concepts correctly and helps the learner in learning new procedures and methods based on previous knowledge, it has become an important necessity for mathematics teachers to have conceptual understanding, and for this reason, a sense of the problem is generated. The study answered the following question: To what extent do mathematics teachers in the upper basic stage possess the concept of conceptual understanding in Nablus Governorate?

STUDY QUESTIONS:

The problem of the study is determined in the following questions:
The first question: What is the degree to which mathematics teachers in the upper basic stage possess the concept of conceptual understanding in Nablus Governorate?

The second question: Are there statistically significant differences between the average responses of mathematics teachers in Nablus Governorate in the degree of their possession of the concept of conceptual understanding according to the variables of gender, scientific specialization, and teaching experience?

Study Hypotheses:

- There are no statistically significant differences at the significance level ($\alpha = 0.05$) between the arithmetic averages of the scores of possession of the concept of conceptual understanding among male and female mathematics teachers in Nablus Governorate due to the gender variable.

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- There are no statistically significant differences at the significance level (α = 0.05) between the arithmetic averages of the scores of possession of the concept of conceptual understanding among male and female mathematics teachers in Nablus Governorate due to the scientific specialization variable.
- There are no statistically significant differences at the significance level (α = 0.05) between the arithmetic averages of the scores of possession of the concept of conceptual understanding among male and female mathematics teachers in Nablus Governorate due to teaching experience**.**

The Importance of Studying:

- The importance of the study is divided into two main axes:
- Theoretical importance:
- The advantage of the current study is that it used a modern and contemporary topic for a wide range of teachers, and it is expected to add theoretical literature related to the concept of conceptual understanding.

Practical Importance:

It also benefits curriculum planners and designers that work to prepare and qualify the teacher professionally and academically to apply comprehension skills conceptualization by teachers through training them on it, and educational decision-makers in the Ministry also benefit from the results of the study Palestinian education and education, and revealing the weaknesses and deficiencies of mathematics teachers in their possession of the concept of conceptual understanding, which urges the Ministry to hold seminars and workshops to raise the competence of teachers to possess the concept of conceptual understanding and apply it in their lessons.

Objectives of The Study:

- The current study aimed to identify the degree to which mathematics teachers in the upper basic stage possess conceptual understanding skills and apply them in their lessons from their point of view.
- Detecting differences in the degree to which mathematics teachers possess the concept of conceptual understanding and apply it to their lessons according to the variables of the study (gender, scientific specialization, teaching experience).

The Limits of The Study:

- Human limitations: The current study was limited to a study sample of mathematics teachers for the upper basic stage in schools government in Nablus Governorate, numbering (102).
- Temporal limitations: This study was implemented during the academic year 2023-2024
- Objective limitations: The current study was limited to the possession of the concept of conceptual understanding by male and female mathematics teachers in the upper basic stage in Nablus Governorate**.**

Terminological And Procedural Terms:

- Conceptual understanding is defined as: the student's ability to identify, understand, interpret, and justify mathematical ideas and the relationships between them (Doherty, 2012). It is defined procedurally: the ability of male and female teachers to answer the questionnaire items that were specially prepared to determine the extent of their possession of the concept of understanding Conceptual mathematics.
- Conceptual linking: A process that helps students create clear mathematical links, relationships, and ideas between mathematical knowledge and its applications (Al-Sidawi and Khazaal, 2017) It is defined procedurally through answering the paragraphs of the third axis in the questionnaire, which expresses the teacher's ability to link various mathematical concepts, identify similarities and differences between them, and infer relationships and arriving at new concepts.
- Multiple representations: mathematical embodiments of mathematical concepts and ideas, in order to give the same information in more than one form (Asli, 2001) Learn procedurally by answering the paragraphs of the third axis of the questionnaire and expressing the extent of the teacher's ability to represent data in ways various linguistic, algebraic, engineering and electronic concepts to clarify concepts for students.
- Problem solving: the process of applying the knowledge or information that the individual has acquired and the experiences he has experienced in new situations that he has never encountered before he learned it before (Abu Zeina, 1994). It is also known as solving problems procedurally by answering the paragraphs of the fourth axis in the questionnaire expresses the teacher's ability to translate problems into mathematical symbols and determine what is required of the problem choosing the most appropriate method to solve it and being able to verify the correctness of the solution.

Previous Studies:

Al-Rifai's (2019) study aimed at the effect of the effectiveness of a program based on sports communication in developing conceptual understanding and reducing the level of anxiety mathematics among eighth grade students in Irbid. The study sample consisted of (54) eighth-grade female students. The study adopted the quasi-experimental approach, and a test was constructed to measure conceptual understanding, and a mathematics anxiety scale, and the results of the study indicated there were significant differences between the two groups on the conceptual understanding test, and these differences were in favor of the experimental

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group. While the results indicated differences on the mathematics anxiety scale; The experimental group compared to the control group.

Abu Odeh's study (2018) aimed to identify the level of conceptual knowledge and procedural knowledge in order to teach mathematics to the primary stage basic education among student teachers at the Islamic University of Gaza, where the study sample consisted of (181) in the Basic Education Department at the College Education, the researcher used the quantitative and qualitative descriptive approach, and the study tool was built from the mathematical knowledge standards MKT that was developed it was built at the University of Michigan, in addition to using the individual interview tool. The results of the study showed that the level of knowledge The conceptual crisis needed to teach mathematics for the basic stage among student teachers at the Islamic University of Gaza was (34.66%). to a low degree, while the level of conceptual knowledge reached (53.97%) with a low degree, while the study recommended preparing training teachers with skills to teach conceptual and procedural knowledge in a balanced manner.

Atta's study (2018) aimed to identify the level of conceptual understanding of symmetry in mathematics among students at Tafila Technical University , knowing the existence of statistically significant differences in the level of their conceptual understanding of isomorphism due to the variables of gender, university major, and level their cumulative average. The study sample consisted of (135) male and female students in the Calculus (2) course, and an instrument test was constructed. For conceptual understanding on the subject of symmetry, the results of the study indicated that the level of conceptual understanding among students in symmetry in general and their understanding for reflexive symmetry and reflexive-withdrawal symmetry, it was moderate. The level of students' understanding of rotational symmetry and their understanding of symmetry as a network was of symmetries was low, while their level of understanding of withdrawal symmetry was high, while the results of the study were that there were no significant differences. Statistical in the level of conceptual understanding of symmetry among students is attributed to the variables of gender, university major, and the level of their cumulative GPA**.**

Zoya's study (2017) aimed to investigate the extent to which mathematics teachers in engineering possess conceptual and procedural knowledge in future schools. The study sample consisted of (36) teachers. The researcher used the descriptive and inferential approach, and the study tool consisted of a test, there are (20) items to measure conceptual and procedural knowledge, while the results of the study indicated a decrease in conceptual knowledge compared to procedural knowledge Where is the place of study? You must return to studying in English and confirm**.**

Al-Enezi's (2014) study aimed to identify the degree of importance and use of some models by middle school mathematics teachers teaching in teaching mathematical concepts and the obstacles to their use in the Kingdom of Saudi Arabia, where the study sample consisted of (101) teacher, and the researcher used the descriptive analytical method and the study tool consisted of a questionnaire, while the results of the study indicated that the use of mathematics teachers had a moderate degree of some teaching models, and the degree of importance of their use was moderate, while it was obstacles to its use were moderate, and the study recommended preparing training courses for teachers in order to employ teaching models in the teaching and learning process.

The study by Miqdadi *et al.* (2013) also aimed to measure the conceptual knowledge and procedural knowledge of fractions among (105) of the classroom teachers' students, in the College of Education at Yarmouk University, as well as investigating the relationship between the levels of anxiety of classroom teachers' students regarding mathematics and their performance with their performance, data was collected using two tools: the first measures the students' knowledge of fractions through their conceptual knowledge and procedural knowledge, and the second measures the students' anxiety regarding mathematics the results indicated a low arithmetic mean for their conceptual knowledge and procedural knowledge compared to the level of mastery determined by the arbitrators, while the results showed that there were statistically significant differences between the average performance of students on the conceptual knowledge test and their average performance on the procedural knowledge test in favor of procedural knowledge ,there is also a moderate negative correlation between students' performance on the fractions test and their anxiety about mathematics.

The study of Christou and Vosniadou (2005) aimed to determine the effectiveness of conceptual change strategies in the way students interpret algebraic symbols in schools in Athens, Greece, and the extent to which this affects their knowledge. The study sample was composed of (57) male and female students, (36) eighth grade students, and (21) ninth grade students, (13) female students and (26) male students, of the students of Athens schools in Greece, the students were divided into two groups, the first experimental and the second control, and the two questionnaires were constructed by the researchers examined the students' elementary algebraic concepts, and the questionnaire consisted of the following concepts: natural numbers, integers, and real numbers. The results of the study were shown using the one-way ANOVA test. The pre-test and post-test were

conducted for the two groups while the results showed that the differences were in favor of the post-test.

STUDY METHODOLOGY AND PROCEDURES:

Study methodology:

The researchers used the descriptive approach to reveal the extent to which mathematics teachers possess conceptual understanding, in order to suit this approach for such a study**.**

Study population:

The study population consisted of all mathematics teachers for the 2022/2023 academic year, numbering (398) male and female teachers For the upper basic stage (5-10) in Nablus Governorate.

The study sample:

The study sample consists of (102) mathematics teachers, representing (26%) of the study population. The researcher used a random sample. Simple and representative of a number of mathematics teachers for the upper basic stage (5-10). Random selection is the best method. Representative of the community. This allows the researcher to reach conclusions about the research communities based on the behavior of the samples and its characteristics. Random sampling also provides an equal opportunity to gather members of the research community (Nasser, 2017), and the following table shows the characteristics of the sample:

Table No.1 shows the characteristics of the study sample members.

variable	Levels	Number	Percentage
Gender	Male	53	52%
	Female	49	48%
	The Total	102	100%
Teaching experience	5 Years And Less	41	40.2%
	5-10 Years	42	41.2%
	More Than 10 Years	19	18.6%
	The Total	102	100%
Scientific specialization	Mathematics	29	28.4%
	Methods of Teaching Mathematics	73	71.6%
	The Total	102	100%

Study Tools:

The researchers built the study tools after reviewing the theoretical literature and previous studies related to the objectives and subject of the study, as a study The study tool consisted of: a questionnaire to measure the extent to which mathematics teachers possess conceptual understanding.

Study Tool:

Conceptual understanding questionnaire the conceptual understanding questionnaire consisted of (25) items and four domains, where the first domain consisted of (6) paragraphs, and the second domain the second domain consists of (6) items, the third domain consists of (6), and the fourth domain consists of (7) paragraphs, where the questionnaire consisted of five alternatives to answer (always, often, sometimes, rarely, never), the teacher chooses what he deems appropriate.

Validity And Reliability of The Tools:

The questionnaire was prepared in its initial form, consisting of (25) paragraphs, after presenting it to a group of experienced and specialized arbitrators. To become the questionnaire in its final form and that the questionnaire measures what it was designed to measure, the stability of the conceptual understanding questionnaire was verified from during the calculation of the reliability of the domains, the total score for the reliability factor of conceptual understanding was (90.0).

Table.2: indicates the reliability coefficients for the resolution areas.

The scale	Number of paragraphs	Cronbach's coefficient (total score)
Conceptual understanding scale	28	0.90

The reliability coefficient for all areas was as follows:

The field	Number of paragraphs	Cronbach's coefficient (total score)
Conceptual knowledge skills	6	0.87
Conceptual linking skills	6	0.82
Multiple representation skills	6	0.84
Problem solving skills	7	0.84

This indicates that the scale has reliability and can be used in the current study according to the Nunnally scale, which was based on (70.0) as the minimum reliability limit (Nannally & Bernstein, 1994).

Study variables:

The current study included the following variables:

First: the independent variables

- Gender has two levels (male, female)
- The specialization has two levels (mathematics, methods of teaching mathematics)
- Teaching experience has three levels (1-5 years, 5-10 years, above 10 years).

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Second: Dependent Variables:

Conceptual understanding: It is measured by the score obtained by mathematics teachers in Nablus Governorate in the conceptual understanding questionnaire that was prepared specifically for this study.

The study sample responses were entered using the Statistical Package for Social Studies (SPSS) program, in order to analyze the study questions, arithmetic averages were calculated for the study items and their fields. In order to answer the study questions and hypotheses**.**

The following levels have been approved:

Table 3: Correction key for interpreting the study paragraphs.

Arithmetic Average Period	Degree
Less Than 1.8	Very Low
1.8 - 2.59	Low
2.6 - 3.39	Medium
3.4 - 4.19	High
More Than 4.2	Very High

PRESENTATION AND DISCUSSION OF RESULTS:

What is the degree to which mathematics teachers in the upper basic stage possess the concept of conceptual understanding in Nablus Governorate?

To answer this question:

Arithmetic means and standard deviations were calculated for the mathematics teachers' ratings on the conceptual understanding questionnaire for college journals**:**

Table 4: Arithmetic means and standard deviations of mathematics teachers' ratings on the conceptual understanding questionnaire for college journals.

Domains	SMA	Standard Deviation	Degree
Conceptual knowledge skills	4.05	0.583	High
Conceptual linkage	3.66	0.586	High
Multiple representations	2.92	0.750	Medium
Problem Solving	3.56	0.595	High
Total Degree	3.547	0.474	High

It is clear from the results of Table (4) that the overall score for the conceptual understanding axes among mathematics teachers in Nablus Governorate was High with an arithmetic mean (3.547) and standard deviation (0.474), "and the axes they possessed the most were (mathematical knowledge skills) to a high degree, and the least axis they possess is (multiple representations) to a moderate degree.

The researchers attribute the current result to the increase in mathematics teachers' use of the field of conceptual mathematical knowledge skills compared to other axes, the reason is that conceptual knowledge is the basic and most important element that a teacher must possess due to the ease of doing it, the multiple representations of the concept were lacking to a moderate degree due to the lack of use by mathematics teachers. Their use of tables and graphs is based compared to other methods of representation, as it is considered the traditional method of representing concepts and data**.**

Arithmetic means and standard deviations were calculated for mathematics teachers' ratings on the Conceptual Understanding Questionnaire, which is divided into several areas:

The First Area: Conceptual Knowledge Skills

Table 5: Arithmetic means and standard deviations of the estimates of the study sample members on the conceptual understanding questionnaire for the field of conceptual knowledge.

Paragraphs	SMA	Standard Deviation	Degree
Able to interpret the concept linguistically	4.30	0.6720	Very High
Able to explain the meaning of the concept accurately	4.12	0.6340	High
Able to give examples and examples of the concept	4.13	0.8290	High
Able to mention the distinctive and non-distinctive features of a concept	3.96	0.8070	High
Able to state the elements of the concept's own attribution set	3.99	0.8020	High
I discuss a specific concept and point out the similarities and differences between it and another concept that I learned previously	3.81	0.7540	High
Total Degree	4.05	0.583	High

It is clear from the results of Table (5) that the overall score for conceptual knowledge skills among mathematics teachers in Nablus Governorate was High, with a mean (4.05) and standard deviation (0.523), and the most approved items were (able to explain the concept Linguistically) and to a very high degree, and the most disagreed paragraphs are (I deal with a certain concept and show the similarities and differences

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between it and another concept that I learned previously) and to a high degree**.**

The researchers attribute the current result to the thinking skills used by mathematics teachers, as the ability to interpret the concept linguistically it is at the lower levels of thinking in the mental-cognitive field. As for the teacher finding similarities and differences between two concepts, this comes in higher levels of thinking, including critical thinking and problem-solving skills, require higher training and practice until the teacher masters them mathematics teachers find it easier and faster to use lower-level thinking skills, and this is confirmed by the current result.

The Second Area: Conceptual Linking

Table 6: Arithmetic means and standard deviations of the estimates of the study sample members on the conceptual understanding questionnaire for the field of conceptual linking.

Paragraphs	SMA	Standard Deviation	Degree
Able to link the mathematical concept to the learner's previous experiences	4.0	0.876	High
Able to identify similarities between a mathematical concept and other mathematical concepts	3.81	0.754	High
Able to identify the differences between a mathematical concept and other mathematical concepts	3.81	0.780	High
Able to give different life examples of the concept	3.63	0.730	High
Able to link the concept mathematically to its applications in other journals	3.40	0.904	High
Able to link different concepts and deduce relationships between them	3.35	0.779	Moderate
Total Degree	3.66	0.586	High

It is clear from the results of Table (6) that the overall score for conceptual linking skills among mathematics teachers in Nablus Governorate was High with an arithmetic mean (3.66) and a standard deviation (0.586), and the most approved items were (able to link the mathematical concept based on the learner's previous experiences) and to a high degree, and most of the non-agreed paragraphs are (able to link different concepts and conclude relationships between them) to a moderate degree.

The researchers explain the current result by the degree to which mathematics teachers possess conceptual linking skills to their ability to link concepts mathematics with the learners' previous experiences is easier for them than inferring relationships between different concepts, and their ability falls from linking with previous experiences, giving examples and showing similarities and differences between different concepts until arriving at a conclusion about the relationships between the concepts**.**

The Third Area: Multiple Representations

Table 7: Arithmetic means and standard deviations of the estimates of the study sample members on the conceptual understanding questionnaire for the field of multiple representations

Paragraphs	SMA	Standard Deviation	Degree
Able to embody and represent mathematical concepts graphically (using tables and graphs)	4.30	0.972	Vere High
Able to translate mathematical concepts in an engineering manner	3.06	1.051	Moderate
Able to translate mathematical concepts in a symbolic way	2.96	0.984	Moderate
Able to translate mathematical concepts using tangibles	2.64	1.088	Moderate
Presents the mathematical concept in a verbal manner	2.44	1.077	Low
The mathematical concept encourages making mathematical representations using computers	2.15	1.112	Low
Total Degree	2.92	0.750	Moderate

It is clear from the results of Table (7) that the overall score for multiple representation skills among mathematics teachers in Nablus Governorate was medium, with an arithmetic mean (2.92) and a standard

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deviation (0.750), and the most approved items were (able to embody and represent mathematical concepts graphically (using tables and graphs) to a very high degree, and most of the paragraphs are not approved, which are (encourages the concept the mathematician is able to perform mathematical representations using computers to a low degree.

The researchers attribute the result to the teachers' use of traditional methods of representing data (tables and graphs) for ease of use dealing with it and the low cost of using it, while the section on encouraging the use of computers in mathematical representation came in at a low level, and this is attributed to there are several factors, the most important of which are the lack of the necessary electronic equipment in the school environment, the lack of it in abundance, the difficulty of teachers dealing with computer programs, and their lack of experience.

Fourth Area: Problem Solving

Table 8: Arithmetic means and standard deviations of the estimates of the study sample members on the conceptual understanding questionnaire for the field of problem solving.

Paragraphs	SMA	Standard Deviation	Degree
Able to translate problems into mathematical language accurately	4.05	0.849	High
Determine the difficulty level of the word problem according to the mathematical operations used	3.82	0.837	High
Able to distinguish between the data and what is required in the problem	3.66	0.802	High
I believe that organizing ideas is one of the most important factors that help in solving problems	3.50	0.780	High
Have the ability to find unusual solutions to problems	3.47	0.817	High
Able to identify the best solutions to the problem	3.41	0.708	High
Able to evaluate your results in solving problems	3.01	1.029	Moderate
Total Degree	3.56	0.595	High

It is clear from the results of Table (8) that the overall score for problem-solving skills among mathematics teachers in Nablus Governorate was High with an arithmetic mean (3.56) and standard deviation (0.595), "The most approved paragraphs were (able to translate Problems refer to mathematical language accurately) to a high degree, and most of the paragraphs are not approved, which are (able to evaluate your results in solving problems) to a moderate degree.

The researchers attribute the current result to the ability of mathematics teachers to solve problems, as they demonstrated the ability to translate problems into mathematical language accurately, identifying difficulties and challenges, and the ability to distinguish between data and what is required, and to find solutions and alternatives to choose the best alternative, if you demonstrate problem-solving ability to solve problems in mathematical concepts.

TO ANSWER THE SECOND QUESTION, THE SECOND QUESTION WAS CONVERTED TO NULL HYPOTHESES:

First Hypothesis:

There are no statistically significant differences at the significance level ($\alpha = 0.05$) between the arithmetic means The degrees of possession of the concept of conceptual understanding by male and female mathematics teachers in Nablus Governorate are attributed to the gender variable.

Table 9: Arithmetic means, standard deviations, and t-test for the study sample's responses towards.

Domains	Gender	Number	SMA	Standard Deviation	Df Degree of Freedom	T Value	Significance Level
Conceptual knowledge skills	Male	53	4.2390	.47872	100	3.345	0.001
	Female	49	3.8503	.62384			
Conceptual linkage	Male	53	3.8396	.45404	84	3.116	0.002
	Female	49	3.4830	.65814			
Multiple representations	Male	53	2.7138	.57677	84	-0.032	0.003
	Female	49	3.1531	.84904			
Problem Solving	Male	53	3.5633	.54788	100	0.055	0.956
	Female	49	3.5569	.64960			
Total Degree	Male	53	3.5879	.34118	100	0.783	0.436
	Female	49	3.5127	.53741	76		

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It is clear from Table (9) that there are no statistically significant differences at the level ($\alpha = 0.05$) between the average answers of male and female teachers on the conceptual understanding questionnaire, the total score was (0.436), which is greater than (0.05). Therefore, the null hypothesis was accepted and the alternative was rejected**.**

The researchers attribute the current result to the fact that the field of conceptual knowledge and conceptual linking among males was higher than that among females, as males they focus on knowledge in its component form and focus on teaching the concept, while the field of multiple representation came in favor of females, and this indicates females have monotony and scrutiny of conceptual knowledge, and the result was that in the area of problem solving, there are no differences between males and females in this field receive the same training in problem-solving skills**.**

Second Hypothesis:

There are no statistically significant differences at the significance level ($\alpha = 0.05$) between the arithmetic averages of the scores of possession of the concept of conceptual understanding among male and female mathematics teachers in Nablus Governorate due to the specialization variable. Scientific.

Table 10: Arithmetic means, standard deviations, and t-test for the study sample's responses towards**.**

Domains	Scientific Specialization	Number	SMA	standard deviation	DF Degree of freedom	T value	Significance level
Conceptual Knowledge Skills	Mathematics	29	4.051	.60110	100	-.006	0.995
	Methods of Teaching Mathematics	73	4.052	.58126			
Conceptual Linkage	Mathematics	29	3.724	.65204	100	.604	0.547
	Methods of Teaching Mathematics	73	3.646	.56173			
Multiple Representations	Mathematics	29	3.000	.78047	100	.636	0.526
	Methods of Teaching Mathematics	73	2.895	.74095			
Problem Solving	Mathematics	29	3.738	.54675	100	1.935	0.056
	Methods of Teaching Mathematics	73	3.489	.60324			
Total Degree	Mathematics	29	3.633	.48534	100	1.092	0.278
	Methods of Teaching Mathematics	73	3.519	.46987			

It is clear from Table (10) that there are no statistically significant differences at the level ($\alpha = 0.05$) between the average answers of male and female teachers on the conceptual understanding questionnaire, the total score was (0.278), which is greater than (0.05). Therefore, the null hypothesis was accepted and the alternative was rejected.

The researchers explain the current result in that there are no differences depending on the scientific specialization variable, as universities aim in their outputs to achieve their goals what is sought is to prepare and train mathematics teachers appropriately and to hone their professional personalities in a fair manner without distinction by specialty, whether it is methods of teaching mathematics or mathematics.

The Third Hypothesis:

There are no statistically significant differences at the significance level ($\alpha = 0.05$) between the arithmetic averages of the scores of possession of the concept of conceptual understanding among male and female mathematics teachers in Nablus Governorate due to the variable of teaching experience.

Table 11: One-way analysis of variance (Anova) test, responses of the study sample towards:

Variable		Sum of Squares	Df Degree of Freedom	Mean Square	F Value	Statistical Significance
Conceptual Understanding Among Mathematics Teachers in Nablus Governorate	Between Groups	1.207	2	0.604	2.772	0.067
	Within Groups	21.552	99	0.218		
	The Total	22.759	101			

It is clear from Table (11) that the value of the significance level is (0.067). It is greater than (0.05). Therefore, we accept the null hypothesis and reject the alternative. Therefore, there are no statistical differences in the arithmetic averages for the degree of conceptual understanding among mathematics teachers in Nablus Governorate due to the choice of teaching experience**.**

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The researchers explain the current result in the absence of statistically significant differences depending on the teaching experience variable, because education in its annual plan subjects male and female teachers to intensive training courses in the presence of all teachers without exception, which makes them maintaining the development of their professional performance so that the same performance is distributed among the schools, that is, uniformity in the competence of teachers, which makes the teaching experience no difference between teachers.

RECOMMENDATIONS AND SUGGESTIONS:

- Using multiple representations of mathematical concepts and linking them together.
- Providing electronic equipment for teachers and training them on how to use it.

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