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Aspects of Metacognitive Knowledge among University Students

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Abstract

The current research aimed to identify: The Aspects of metacognitive knowledge among university students. Differences in the limits of metacognitive knowledge according to variables (gender, stage, specialization). The current research has been determined by the students of Al-Qadisiyah University of specialization (scientific - humanitarian) and the second - fourth stage) and gender (males - females) of the morning study for the academic year 2022-2023. To achieve the objectives of the research, the researcher relied on the following: Use a relational descriptive approach to uncover the limitations of metacognitive knowledge. Adoption of the Al-Abbas 2012 scale within the limits of metacognitive knowledge based on the theory of Hartmann (1998), which consists of 12 fields and (45) items in its final form. To complement this, the researcher applied the scale to a sample of (500) male and female students at Al-Qadisiyah University, who were selected by the random stratified method according to the proportional method, and after collecting the data and processing them statistically using the statistical portfolio (spss), the current research reached the following results: 1- The university students have intermediate knowledge limits that tend to be thicker. 2- There are no statistically significant differences in the Aspects of metacognitive knowledge among the sample members according to the variable (gender, stage, specialization).

Keywords: *The Limits of Metacognitive knowledge*

Introduction

Research problem

The Limitations of the mind lie on a continuum from thick to thin and are a useful way to describe differences between individuals. Thus, the concept of the Limitations of metacognitive knowledge refers to the demarcation of the Limitations between the individual and his external environment within the internal processes of the individual. Thus, the concept of the Limitations of the mind refers to a wide range of Limitations, for example: the Limitations between the self and others (the Limitations between people), the Limitations between the self and the environment (the stimulation barrier), the limits of ease of transition between states of consciousness (wakefulness, daydreaming, hypnosis, meditation, and dreaming), and the organization of mental contents (Jawar, m, 2001:12). Therefore, the researchers believe that it is a problem that requires study and research because of our lack of knowledge about the capabilities and capabilities of university students, as they are an important segment in society in the variable of the Limitations of intercultural knowledge, and because the current research sample is one of the important samples at the cognitive, educational and academic level, it requires research within the limits of their

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intercultural knowledge. Therefore, the research problem crystallizes with the following question:

What is the level of metacognitive knowledge among university students?

Are there statistically significant differences in the limits of metacognitive knowledge according to the variables (gender - stage - specialization) among university students?

The Significance of the study

One of the factors affecting the performance of the student is the Limitations of intercultural knowledge. The concept of the Limitations of intercultural knowledge is of clear Significance in our lives, as this concept has been developed as a dimension of personality, as thick borders against thin borders are originally a personal dimension or a measure of attributes where there are also differences within the individual in the work of borders, The individual works in a more effortless borderline way at certain times and uses his maximum energy at other times. The Limitations of knowledge are located on a continuum from (thick - to thin), which is a useful way to describe the differences between individuals, for example: an individual with very thin borders may have difficulty separating his sense of self from the environment and thus be very emotional and may have difficulty distinguishing between dream and reality, while the individual with thick borders appears to be an emotional person or unaffected by his environment. Many researchers have investigated the relationship between Limitations and other aspects of personality functioning such as neuroticism and anxiety (zborowski et al, 2003: 45).

Hartmann's study (2001) indicated that daydreaming is boundary-related, as he studied the dreams of about 40 students who were presenting a daydream one day and students with slim Limitations had strange dreams compared to the rest of the students with thick Limitations (Hartmann,et,al, 2001: 120).

Based on the above, the Significance of research can be summarized as follows:

First: Theoretical Significance

- 1- The study of the Limitations of intercultural knowledge represents an attempt to understand these Limitations and link them with new aspects of the personality of the university student, which contributes to helping researchers understand his mental processes.
- 2- The current research presents the views on psychological and educational literature in the variable(the Aspects of metacognitive knowledge) among university students to be a frame of reference for the benefit of researchers in future studies.

Second: Applied Significance

- 1- Increasing research information with standard characteristics about the research variable (Limitations of metacognitive knowledge).

- 2- The Significance of identifying the Aspects of metacognitive knowledge among male and female university students, which can benefit from its results for those concerned and officials when preparing the educational program to take appropriate decisions in crystallizing the personality of students and their excellence in academic achievement.
- 3- The two researchers adopt the measure of the Limitations of intercultural knowledge among university students.
- 4- The current study provides a tool for measuring the variable of the research topic to identify the Limitations of metacognitive knowledge , and this enables researchers to benefit from in their future research and can be a fruitful nucleus at the applied and theoretical level, as well as it saves them time and effort.

Research Objectives

The current research aims to identify:

- 1- The Aspects of metacognitive knowledge among university students.
- 2- Differences in the limits of metacognitive knowledge according to variables (gender - stage - specialization)

The limitations of the research

The current research is determined by the students of the University of Qadisiyah from the specialization (scientific - human) and the stage(second - fourth) and gender (males - females) of the morning study for the academic year 2022-2023.

Identifying Terminology

Limitations of Metacognitive knowledge : Defined by:

- Hartmann (Hartmann,1998) It is one of the most important dimensions of personality and is a linear variable ranging from thick borders characterized by the distinction of ideas and feelings, and their separation and thin borders characterized by fluidity and fusion of ideas, feelings, perceptions and tendency to imagine and dreams (Hartmann, 1998 :222).

The researcher has adopted Hartmann's definition (Hartmann, 1998) in defining the concept of the Limitations of knowledge in the current study.

Chapter II/Conceptual framework and previous studies

The concept of the Limitations of metacognitive knowledge refers to the delineation of the Limitations between the individual and the external environment within the internal mental processes of the individual. Thus, the concept of the Limitations of metacognitive knowledge refers to a wide range of Limitations , for example , the Limitations between the self and others (the Limitations between people), the Limitations between the self and the environment (the

incentive barrier), the ease of transition between states of consciousness (wakefulness , daydreaming, hypnosis, meditation, and dreaming), and the organization of mental contents (Camfield, D., 2008:67).

Types of Limitations

The concept of mental Limitations is a very broad concept and includes the features of many personal characteristics, so it is good to study the thin and thick borders together, according to Hartmann, Hartmann discussed a lot of different Limitations and stressed that the Limitations may be unclear and known to all people and that most people believe that there is a kind of border around themselves and between them and the world surrounding them , and the borders may be a thick separation similar to the shield and the borders can be thin and less thick and permeable (Hartmann,1991: 25).

A. Thin Limitations

Ernest Hartmann observed that people with recurring nightmares had distinctive personality characteristics that he described as “unrestricted,” “unprotected,” “weak,” “artistic,” and “open,” and people with these characteristics seemed unable to obscure the frightening images and feelings arising from my dreams, and lacked barriers between their own identity and that of others , or between their own beliefs and unconventional ideas.McCrae, 1994: 25).

B- Thick borders: The concept of thick borders, this term refers to the degree to which the individual keeps his experiences, feelings, thoughts and feelings separate from each other. An individual with thick borders is insensitive, does not particularly trust others, defends himself, actively participates in his profession and adapts to the traditional lifestyle (Camfield, 2008:41).

People with thick borders tend to see the world in terms of “black and white,” while people with thin borders tend to be more aware of “grayscale.” Females have thinner Limitations than males, and Limitations tend to become thicker as individuals age 31: Hartmann, 1998).

A study (1996, et,al, Giambra) indicated that the frequency of remembering dreams is higher in females than in males due to their tendency to thin Limitations (1996:29,et,al,Giambra).

Theories that explain the Limitations of metacognitive knowledge

Theory of Hartmann:Hartmann

That the mental Limitations between is a broad psychological concept and is one of the characteristics that the individual enjoys, which is an important dimension of personality and indicates that some people live their lives in a way (dreamer) more than others. Hartmann developed a clear outline of his theory in the form of a linear connection from conscious awakening to dreaming. He also pointed out that half of the people live most of their lives on the left side of this connection, which is the ideas of focused awakening, while others are from the left and right , while the rest live their lives from the right side of the caller, which is characterized by daydreams

(Hartmann, 1998:220).

His theory focuses on three Subjects: the **first subject** - the dream is one of the most important forms of mental performance and is carried out through a continuum of thinking, the **second subject** - which is that the dream is linked to imagination and daydreams and thinking and it works to link them flexibly and easily, and the **third subject** - revolves and explains that these links do not work randomly but in an organized manner and are guided by the feelings of the dreamer or his emotional fears, Hartman confirms through his theory of the Limitations of metacognitive knowledge, which is one of the configurations of personality, and that these Limitations everywhere from our external and internal world, and these Limitations have a great role in our mental performance and help us understand the different aspects of life, which are the two types of thick and thin borders. (Lewis, 2009:100)

Hartmann emphasizes that the thickness and thinness of borders are very important in understanding what happens to humans from different stages of development, mental illnesses and relationships, and it is assumed that they are important and useful in understanding the work of the human brain. Hartmann believes that borders change with the change of an individual's mental activity and according to the threat he receives, all the events that an individual is exposed to can lead to the rupture of those borders, and the danger or threat can lead to the formation of thick borders and the individual can face the risk of rupture of borders. Hartmann believes that thick and thin borders cannot be studied separately because their study in a holistic understanding of borders is useful in the work of the brain in general (Hartmann, 2011:40-41).

The reasons for the researcher's adoption is that Hartmann's theory

- Being the first theory that comprehensively explained the Limitations of metacognitive knowledge (cognitively, personally, socially and how the individual deals with the stimuli of the environment)
- It is an explanatory theory of the Limitations of metacognitive knowledge and explained two types of Limitations (thin and thick) and the qualities possessed by both parties.
- Hartmann's theory provided a thorough psychological explanation of the limits of cognitive, personal, and social Metacognitive knowledge in individuals and how it deals with the stimuli of the environment.

Chapter Three/Research Methodology and Procedures: To achieve the objectives of the research, the researcher used the descriptive approach, as it is one of the appropriate scientific research methods to study the correlational relationships between variables, and describes the phenomenon or problem as it is in reality and expresses it qualitatively and quantitatively, qualitative expression describes the phenomenon and explains its characteristics while quantitative expression gives us a numerical description that shows the extent of the phenomenon, its size, or

the degree of its association with other phenomena (Abbas,2009: 74).

First: The research community: The current research community is represented by students of Al-Qadisiyah University/second and fourth grade/morning study/numbering (9316) male and female students represented in scientific and humanitarian colleges for the academic year 2022-2023

Second: Research Sample

No.	Faculty	Phase II		Total, II	Stage Four		Total IV	Grand Total
		Females	Males		Females	Males		
7	Computer Science	7	5	12	10	7	17	29
8	Engineering	12	12	24	8	5	13	37
9	Education Scientific Departments	46	24	70	23	12	35	105
10	Physical Education and Sports Science	8	16	24	5	13	18	42
11	Management and Economics	18	15	33	27	23	50	83
12	Science	17	7	24	13	3	16	40
	Total scientific faculties	108	78	186	85	64	149	335
16	Literary	10	7	17	12	9	21	38
17	Law	7	9	17	7	4	11	28
18	Education Humanities Departments	38	19	57	26	15	41	99
	Total humanitarian colleges	56	35	91	45	29	74	165
	Grand Total	164	113	277	130	93	223	500

The researcher used in the selection of the sample the random stratified method Stratified Random Sample (Melhem,2002: 251), where it chose in a proportionate way (500) students from the community of students of the second and fourth stages at the University of Qadisiyah and by (5%) of the research community and by (200) students and(300) students. The percentage of males reached (40%) of the sample, while the percentage of females reached (60%) and the percentage of scientific specialization (67%) and the percentage of humanitarian specialization (33%). The percentage of the second stage (55%) and the percentage of the fourth stage (45%), and table (2) shows that

Table (2) The research sample is distributed according to the variables of gender, specialization and stage of study.

Third: Research Tool

The researcher adopted that the (Al-Abbas 2012) scale of the limits of knowledge, consisting of 45 items distributed over twelve areas, as well as adopting the definition of (Hartman), which he defined as (one of the most important dimensions of personality, a linear variable located between thick borders characterized by the distinction of ideas and feelings and their separation and thin borders characterized by fluidity and integration between ideas, feelings, perceptions and the tendency to imagine and dreams)

The variable included twelve domains of inter-definition Limitations and the Pepin table of domains and the numbers of items that belong to it.

No.	Areas of knowledge frontiers	Item numbers from - to
1	First Field Score	1 × 3
2	Second Field:	4/8
3	Third Area:	9-12
4	Fourth Area:	13-15
5	field 5 Grade	16-20
6	6th Field Grade	21-26
7	7th Field Degree	27-29
8	Domain 8	30-32
9	Domain IX	33-35
10	Tenth Domain	36-38
11	Area XI	39-41
12	Second Field:	42/45

To verify the validity of the items, the Metacognitive knowledge Limitations Scale was presented in its initial form to a group of 18 arbitrators specialized in the field of education and psychology, and they were asked according to the definition set by the researchers for the limits of metacognitive knowledge, the definition of its twelve areas, and their observations and opinions on the validity of the items to measure what was set for it, the validity of the item for the area in which it was placed, modifying, deleting or adding to some of the items of the scale, the validity of the alternatives to answer.

The calculated value of the Chi-Square was adopted as the criterion for the survival of the item and according to the table value (3.84) at the level of significance (0.05) with a degree of freedom (1). All the items were statistically significant and were not deleted as shown in Table (11)

Table(3) K-square values of the arbitrators' agreement on the validity of items

Item numbers	Number of approvers	Number of Disagreements	Ka2 squared value		Percent	Significance level (0.05)
			Calculated	tabular		
	26	-	26	3.84	100%	significant
	25	1	22.154		96%	significant
	24	2	18.615		92%	significant
	23	3	15.385		89%	significant

Statistical Analysis of the Metacognitive knowledge Boundary Scale

The process of statistical analysis of items is one of the basic steps in the construction and preparation of measures, and one of the important conditions for the items of educational and psychological measures is that they are characterized by their ability to distinguish between individuals in the measured capacity, as well as the need for the condition that the degree of the item is related to the overall degree of the scale (Al-Kubaisi, 2010 :271).

Statistical analysis

Nunnally points out that the size of the discrimination sample is related to the number of items of

the scale, as it should be (5-10) times the number of items , to reduce the impact of chance in statistical analysis (Nunnaly, 1978 p:262). Since the number of items of the Metacognitive knowledge Boundary Scale is (45) items , and the researcher has the right to choose the statistical analysis sample between (150-300) individuals, so the researchers chose the statistical analysis sample (300) students from the research community in the proportional random stratified way (Stratified Sample Proportional Random).

Discriminatory power of items

The discriminatory power of items is the ability of items to distinguish between the upper and lower levels of individuals in relation to the characteristic measured by items (Shaw, 1967 p:97). The researchers adopted the two peripheral groups method (Contrasted Group Method) to verify the discriminatory power of the items of the Metacognitive knowledge Boundary Scale, as follows:

- 1- Finding the total score for each field of the Metacognitive knowledge Boundary Scale Form distributed to (students), and arranging it descending from the highest degree to the lowest degree, as it was between (215-120).
- 2- (27%) of the upper group and(27%) of the lower group of grades were chosen to represent the two peripheral groups, and because the statistical analysis sample consists of (300) male and female students, therefore, the number of forms of the upper group members was (81), with grades ranging between (215-182) degrees. As for the forms of the lower group, they were (81) forms, which also ranged in degrees between (160-120) degrees.
- 3- The scale vertebrae were analyzed using the t-test of two independent samples, to test the significance of the differences between the mean scores of the upper and lower groups (Firkson, 1991 :458).
- 4- Comparing the calculated T-value of each item with the table T-value of (1.66) at the significance level of (0.05), and with the degree of freedom (160). It turns out that all items of the scale are statistically significant, which means that all items have a discriminatory force.

The relationship of the score of the item to the total score of the scale

To extract the relationship of the item score to the total score of the scale, the value of the Pearson correlation coefficient between the score of each item of the scale was calculated with the total score of the interval of knowledge, and it turned out that all the items of the scale were statistically significant, because their correlation coefficient values are greater than the table value of (0,113) at the level of significance (0.05) and with a degree of freedom (298), as shown in Table (5).

Table(5) The coefficients of the correlation of the score of the item with the total score of the Metacognitive knowledge Boundary Scale.

No.	Correlation coefficient	No.	Correlation coefficient	No.	Correlation coefficient	No.	Correlation coefficient	No.	Correlation coefficient
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1	0.234	10	356	19	418	28	.448	37	0.149
2	0.339	11	0.359	20	0.432	29	0.513	38	0.221
3	0.302	12	0.298	21	.335	30	0.491	39	0.187
4	0.379	13	290	22	0.222	31	0.493	40	0.238
5	0.441	14	.398	23	0.357	32	0.469	41	0.208
6	0.414	15	0.402	24	481	33	345	42	0.191
7	0.355	16	0.507	25	0.358	34	0.346	43	0.194
8	0.466	17	34	26	0.514	35	278.	44	0.106
9	0.437	18	0.376	27	0.437	36	0.377	45	0.267

The degree of the item is related to the degree of the field to which it belongs

The researchers used this indicator to ensure that each item of the field is consistent with the rest of the items of the field to which it belongs. The researchers used Pearson Correlation statistic to calculate the correlation of each item with the domain to which it belongs to the fields of the Metacognitive knowledge Boundary Scale. Through this indicator, it became clear that all items of the scale belong to their fields, because the Pearson correlation coefficient values were all statistically significant, because they are greater than the table value of the correlation coefficient of (0,113) at the significance level (0.05) and with a degree of freedom (298), as shown in Table (6). Thus, the measure in its final form consists of (32) items.

Table(6) The coefficients of the degree of correlation of the item with the degree of the field in which it is a measure of

Scope	No.	Correlation coefficient	No.	Correlation coefficient	No.	Correlation coefficient
First grade	1	.789	2	833	3	.575
Second Grade	4	571	5	0.694	6	0.648
	7	0.632	8	0.622		
Third grade	9	693	10	0.741	11	672**
	12	644				
Fourth	13	0.719	14	784	15	0.796
Fifth	16	0.640	17	0.605	18	0.640
	19	.733	20	0.677		
Sixth	21	0.595	22	0.494	23	0.689
	24	716	25	.610	26	0.531
Seventh	27	.728	28	0.738	29	701
Table Continues:						
Eighth	30	0.816	31	0.792	32	0.749
Ninth	33	0.792	34	0.876	35	0.722

Tenth	36	0.712	37	0.573	38	0.544
Article (XI):	39	0.658	40	.745	41	.788
Article (XII):	42	0.626	43	0.702	44	0.626
	45	0.498				

Field Score Correlation with Scale Overall Score

The two researchers used this indicator to ensure that there is internal consistency between the areas of the scale between them and the overall score of the scale by finding the correlation between the overall scores of individuals for each area and the overall degree of the scale, that the correlation coefficients for each area of the inter-definition boundary scale are statistically significant at the level of (0.01), as well as the correlation relationship between the same areas to know the structure of the correlation of the fields with each other and using the Pearson correlation coefficient. The results indicated as shown in the table.

Coefficients of Correlation of Metacognitive knowledge limitations Scale Score with Each Other and with the Score

(7) Scope	Table	First	Second Grade	The third	Fourth	Fifth	Sixth	The Seventh	Eighth	The ninth	Tenth	Eleventh	Article (XII):
Total		.389	0.650	.525	474	0.636	0.633	0.650	.617	0.406	0.437	0.386	0.310
First		1	-	-	-	-	-	-	-	-	-	-	-
Second Grade		.292	1	-	-	-	-	-	-	-	-	-	-
Third grade		0.179	0.282	1	-	-	-	-	-	-	-	-	-
Fourth		0.061	268	178	1	-	-	-	-	-	-	-	-
Fifth		0.150	0.339	0.299	.389	1	-	-	-	-	-	-	-
Sixth		0.074	0.411	0.402	205	0.414	1	-	-	-	-	-	-
Seventh		0.171	.388	0.266	0.212	344	0.374	1	-	-	-	-	-
Eighth		226	34	0.301	0.112	0.188	0.300	470	1	-	-	-	-
Ninth		0.034	- 0.056	0.014	0.045	0.117	0.130	0.254	0.318	1	-	-	-
Tenth		.063	-0.128	0.125	0.005	0.188	0.164	277	345	452.	1	-	-
Article (XI):		.060	0.158	0.107	0.083	0.155	0.274	0.153	118	0.011	.276	1	-
Article (XII):		0.185	.089	.024	0.212	0.114	0.100	0.095	0.064	0.119	.053	0.074	1

Reliability indicators of the two scales (Reliability)

Reliability means obtaining almost the same results when the test or scale is reapplied to the same sample after a period of time and using the same instructions. It is also a prerequisite of the research tool because it provides consistency in the test results when reapplied several times (Al-Ajili, et al., 1990 :145). The researchers verified the reliability indicators of the scale using the test and retest method for external consistency and using the Cronbach Alpha equation for internal consistency as follows:

Test method – retest (external consistency) The reliability coefficient extracted by the test method

- retest with the reliability coefficient over time requires reapplication of the test to the reliability sample itself with an interval of time, (Allam, 2000 :162). Therefore, the researchers applied the scale to a sample of (40) male and female students from Al-Qadisiyah University who were randomly selected from the human and scientific disciplines, and reapplied the scale to the same sample after two weeks , and the reliability coefficient between the two applications of the interval of knowledge was (0,811).

The Cronbach alpha equation (internal consistency): In order to extract reliability in this way, the statistical analysis sample scores of (400) forms for the Metacognitive knowledge Boundary Scale were subjected to the Cronbach alpha equation (Alfa Cronbach Formula), and the reliability coefficient reached the Metacognitive knowledge Boundary Scale is (0,847), which is high reliability , so the scale was considered internally consistent and is very stable, and this is confirmed by Cronbach that the scale whose reliability is high is an accurate scale (Cronbach, 1970,p :63).

Statistical Indicators of the Metacognitive knowledge limitations Scale

Statistical Attribute	Frontiers of Metacognitive knowledge
Arithmetic Mean	171.96
Standard error of the mean	1.0185
Mean	172
Mode.	177
Standard Deviation	17.641
Variance	311.202
Skewness!	039
Torsion standard error (Mech.)	0.141
Kurtosis	-004
Standard error of dissociation .)	0.281
Range	95
The lowest score you can get.	120
The highest score you can get.	215
Hypothetical mean	42
Number of items	14
Number of alternatives	5

Chapter Four: Presentation and Interpretation of Results

First Objective: Identifying the Aspects of metacognitive knowledge

To achieve this objective, the researcher analyzed the answers of the research sample of (500) university students, on the intercultural knowledge boundary scale, and the researcher found that the arithmetic mean of the research sample (106,275) with a standard deviation (14,989), and when comparing the arithmetic mean with the hypothetical mean of the scale of (87), and after testing the significance of the difference between the two means using the equation of the T-test for one sample, it appeared that there is a difference between the two means, and in the direction of the sample average, as the calculated T-value reached (**12,987**), which is greater than the table T-values (1,98), At the level of significance (0.05), and the degree of freedom (101), this indicates that university students have the limits of interlocutory knowledge, and as shown in Table (4), this

indicates that university students have the limits of interlocutory knowledge tend to thicken. This result is identical to what Hartmann said, as Hartmann (1988) indicates that individuals with thickening limits have good organization in situations where there is some kind of difficulty and they thus enjoy good rigidity. The researcher explains this result in that university youth go through a positively different mental simulation, and emotional and psychological reliability, which calls The nature of social life in our Iraqi society is different from the rest of the societies because of the different harsh conditions that have resulted in pressures, which made individuals, especially young people, look for feelings of strength and rigidity in the face of things in various aspects of life. This result is similar to the study (Hussein 2018), which indicates that university students have thick intermediate knowledge Limitations, and differed with the study (Al-Abbas 2012), which indicates that students have slim knowledge Limitations.

Table T-test of one sample for the average scores of the research sample in the Metacognitive knowledge limitations Scale

Significance level at 0.05	T-value (t)		Hypothetical average	deviation, perversion, variation Standard	Average	Number of sample members	variable of knowledge
	tabular	Calculated					
significance	1,96	46,010	95	18,415	172,892	500	Limits of knowledge

Second Objective: To identify the significance of differences in the limits of metacognitive knowledge among university students according to gender variables (males, females), specialization (scientific, humanitarian), grade (second, fourth)

To find out the significance of the differences in **the limits of intercollegiate knowledge** among university students according to the variables: gender (males, females), academic specialization (scientific, human),

grades (second, fourth), the researchers used a triple variance analysis, and the results were as in the table.

Table: Analysis of triangular variation in the Limitations of intercultural knowledge according to gender variables (males -females), specialization (scientific -human), and grades (second - fourth)

Source	Sum of squares	Degree of freedom	Mean squares	Pecuniary value		Level of Significance
				Calculated	tabular	
Gender	285.984	1	285.984	0.850	3.84	(Non-significant)
Specialization	211.030	1	211.030	0.627		(Non-significant)
Grade	429.930	1	429.930	1/278		(Non-significant)

Table Continues:

Gender * Specialization	158.280	1	158.280	0.471		(Non-significant)
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Gender * Grade	136.494	1	136.494	0.406	(Non-significant)
Specialization * Grade	97.892	1	97.892	0.291	(Non-significant)
Gender * Specialty * Grade	406.268	1	406.268	1.208	(Non-significant)
Error	165,467.774	492	336.317		
Total	167,193.652	499			

Statistical processing in Table () refers to the following:

There are no statistically significant differences in the degrees of metacognitive knowledge among university students according to gender variables (males, females), as the calculated mortality value was (0,849), which is smaller than the tabular value of (3,84) at the level of significance (0.05) and two degrees of freedom (1-492). This result indicates that the Limitations of intercultural knowledge in females and males are similar, and this result can be explained: University students are at this stage have reached cognitive and mental maturity and have self-confidence and seek to form social relationships through their sense of fruitful belonging, and this is confirmed by Hartmann in his description of individuals of the sloping limits of thickness, whether males or females, which involves looking forward to their future lives optimistically full of good mental health, and the reason for this may be due to education or socialization . 2000:53-5) , Hartmann). There are no statistically significant differences in the degrees of metacognitive knowledge limits among university students according to the variable of the academic specialization (scientific, humanitarian), as the calculated value reached (0,627), which is smaller than the tabular value of (3,84) at the level of significance (0.05) and two degrees of freedom (1-492). This finding indicates that the Limitations of knowledge between scientific students and students of humanity are similar.

There are no statistically significant differences in the scores of the interdisciplinary limits of knowledge among university students according to the variable of the second and fourth grade, as the calculated value reached (1,278), which is smaller than the tabular value of (3,84) at the level of significance (0.05) and two degrees of freedom (1-492). This finding indicates that the Limitations of knowledge between second-grade and fourth-grade students are similar .

There are no statistically significant differences in the limits of intergenerational knowledge according to the interaction of the species (males -females) with the specialization (scientific - human), because the calculated faulty values are (0,471) and this is less than the tabular value of (3,84), and a degree at the level of significance (0.05) and two degrees of freedom (1-492).

There are no statistically significant differences in the degrees of interval of knowledge of the interaction of the gender (males - females) with the grades (second - fourth), as the calculated values were (0,406), which is smaller than the tabular value of (3,84),

There are also no statistically significant differences in the limits of metacognitive knowledge as a

result of the interaction of the specialization (scientific-humanitarian) with the grades (fourth - sixth), as the calculated F value was (0,291), which is smaller than the table F value of (3,84) at the level of significance (0.05) and two degrees of freedom (1-492).

There are no statistically significant differences in the Aspects of metacognitive knowledge as a result of the interactions between the variables of gender (males - females), specialization (scientific-human), and grades (second - fourth), as we find the calculated value of the interactions (1,208) degrees, which is less than the table value of (3,84) at the level of significance (0.05) and two degrees of freedom (1-492).

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