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The Inference (Available - Well-Established) Among The Heads Of Scientific Departments In The Universities Of The Middle Euphrates

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Abstract

The research aims to: The current research aims to identify: Inference (available - well-established) among the heads of scientific departments in the universities of the Middle Euphrates, as well as the statistical significance of the differences in inference (available - well- established) among the heads of scientific departments in the universities of the Middle Euphrates according to the variables (University In order to achieve the objectives of the research, the researchers built a research tool: Inference Scale - Available - Firm) to the basic research sample consisting of (718) heads and department heads from the Middle Euphrates universities, with a percentage of 50% of the original population using the proportional stratified random method, and after collecting and analyzing data statistically using the SPSS statistical package for social sciences, the researchers reached the following results: The middle students have inference during the per formance of administrative work, and the heads of scientific departments at the University of Karbala are the ones who use solid reasoning at the expense of the heads of the pastors Or in the remaining universities, where it was found that the average of females is higher than The average of males in the inference of the firm, and that the heads of scientific departments of the rank of assistant professor are the ones who use firm reasoning at the expense of the heads of departments in the remaining universities. In light of the results, the researchers made a number of recommendations and suggestions.

Keywords: available, well-established, scientific, Middle Euphrates.

Introduction

Attention to the heads of scientific departments working in universities at the present time (at a time when accelerated decisions vary due to different circumstances), is necessary because they constitute the mainstay of administrative work in all faculties, and they are the ones who bear the greatest burden in the administrative process of professors and students and other possibilities related to their departments. The use of cognitive psychological examination through inference methods clarifies many of their orientations and beliefs in solving administrative problems between superiors and subordinates, as well as students, organizational and scientific affairs in them.As the subject of inference is of great importance and takes a large and wide space in the mental and administrative aspect and in issuing or selecting judgments (Rottmanetal 2012:45). It (inference) is one of the most important manifestations of the scientific, administrative and social maturity of the individual. It shows the individual's belief in principles and public and private issues in solving problems and overlapping in administrative work (Rozin etal 2008:345). It includes two types: Deduction: which refers to the process of inference from a set of general premises until arriving at a truthful, logical conclusion. Induction: It is the process of inference from specific premises or observations until arriving at a general conclusion or a general rule (Gudrun 2003: 8).Inference (deductive and inductive) is the cornerstone of human intelligence, and it was used by Spearman in 1923 in his theory, as it was one of the important indicators of intelligence and general thinking through measurement or representation. Among them, most theories see inference as a treatment of issues, and its skills demonstrate the

individual's ability to think and intelligence (Al-Zayyat 2006: 291-292).

Research Importance

Through the foregoing, the researchers show the theoretical and practical importance of the research, as follows:

1. The scarcity of local and Arab studies that dealt with the issue of both types of inference (firm and available), especially for heads of departments in universities, the importance of the inference variable of its two types (firm and available) that the current research dealt with, due to the urgent need for diagnosis and development for heads of departments in Iraqi universities in their use of one of the two types of inference referred to In contemporary psychological literature.
2. The importance of the scientific direction (for the heads of departments being the mainstay of the administrative and scientific work in the department) on which the research is conducted. It is possible to benefit from the results of the current research in the field of mental or (educational) and administrative development together, and in the field of administrative development and development, rational reasoning with an educational psychological vision.

Research Problem

It is from the nature of man, since he exists, that he searches for a mental method to solve his problems that hinder his personal existence, to help him adapt the circumstances he is going through from time to time. As it progresses or worsens. It is by means of mental reasoning. However, with the manifestations of civilizational and technological development and the diversity of administrative action, it has become affected, rather permanent, in solving these contemporary problems. We thought that he seeks rational reasoning to provide appropriate solutions and logical decisions in his daily and professional life. Artificial intelligence, management technology and other features of rapid development have left the owners of administrative tasks at a loss to adopt the appropriate type of inference. That which is related to the well-established mental controls that push him to use a kind of reasoning in solving his practical problems, and what is available to him from the reasoning to reduce those pressures and harsh controls. And what is established in a specific way in solving these circumstances of administrative and professional controls, at the same time the heads of departments in the scientific and humanitarian faculties exercise a number of varying and accelerating pressures, which require them to solve a consensual mental solution between superiors and subordinates. An appropriate indicator in scientific research to verify the nature of the inference used. Based on the foregoing, the problem of the current research is formulated in the following: What is the type of inference used by the heads of departments (available or well-established)?

Research Objectives: Aims of the Research The current study aims to:

Reasoning (available - well-established) among the heads of scientific departments in the universities of the Middle Euphrates

The statistical significance of the differences in inference (available - well-established) among the heads of scientific departments in the universities of the Middle Euphrates according to the variables (university, specialization, gender, academic degree)

Research Limitations: Limitations of the Research The current study is determined by the following limits:

Objective limit: includes the variables of the current research in finding the relationship between (available-firm) inference.

Human Limit: The research is limited to a sample of heads of scientific departments in the universities of the Middle Euphrates, represented by the University of (Al-Qadisiyah, Kufa, Babylon, Karbala).

Spatial limit: The research was limited to the universities of the Middle Euphrates, in the University of (Al-Qadisiyah, Kufa, Babylon, Karbala) and its affiliated colleges.

Standard limit: The two researchers will use the measurement in paper form, because the heads of departments are included in the attendance of their administrative tasks in the faculties.

Time limit: For the academic year (2021-2022 AD) (1442-1443 AH).

Defining the Terms: Definition of The researchers will address the following definitions:

Available Heuristic, defined by (Abu Jadaan 1999): It is a process whereby the individual employs any idea that came to his mind during the task, arguing that as long as it is available in his mind, it will be suitable for the solution, or at

least it gives it a higher probability than others because it dispenses with A great effort was made to think of other alternatives, although they need more certainty and certainty (Abu Jadaan 1999: 31). Anchoring Heuristic Arafa (Abu Jadaan 1999): It is according to which the individual gives appropriate importance to each information, even if it is very small, before choosing a specific alternative to solve the task (Abu Jadaan 1999: 34) Theoretical definition: The researchers adopted A definition of (Abu Jadaan 1999), its definition is adopted in (firm and available reasoning) for the following justifications:

It is one of the rare definitions identified by him, and he was the first to refer to it in an Arab simplified and clear definition of the concept of firm and available inference. As for the operational definition, it is: The total score obtained by the examinee, who are the heads of the scientific departments in the universities of the Middle Euphrates (Karbala, Qadisiyah, Kufa and Babylon), by answering the paragraphs of the (available - well-established) inference scale that the researchers built.

Theoretical framework and previous studies

The dual process theory of cognition proposes that two distinct processes operate in the human mind, one slow based on experience and the other fast and intuitive (Kahneman 2011: 98). (Kahneman 2011) refers to them as System 1 and System 2 (Kahneman 2011: 101). System 1 consists of a set of independent subsystems that include unconscious outputs and cognitive structures acquired primarily from experience. Although the processes are diverse, decision is rarely the product of different mental systems (Chaiken & Ledgerwood 2013: 90). Whereas in System 2 amplitude depends on working memory and cognitive ability in a situation (Evans 2010: 73).

Accordingly, the cognitive system 1 is based on accumulated experience, and is linked to the cognitive miser principle, as individuals seek to maintain mental effort to simplify decisions (Fiske & Taylor 1991: 101). From this System 1 achieves the goal through mental shortcuts, or available reasoning, and System 2 pursues more important tasks in achieving solid reasoning (Kahneman 2011: 106). shown in figure (1)

Figure (1) according to the classification (Kahneman 2011) in the theory of the dual theory of cognition Cognitive System 1 Anchoring Heuristic

This system consists of a set of independent subsystems that include unconscious outputs and cognitive structures acquired primarily from his past inferential experience. Its personnel, who possess a limited mental capacity, and who are faced with less important and less dangerous tasks, rely on the source of the information to be considered trustworthy. With a consensual view, the deductive position that the ancient philosophers showed, refers to that which requires activating the individual's learned inferential ability in order to reach a logical solution, and often the special situations that need to be solved mentally inferential activity are among the factors affecting the formation of inferential behavior, as the The lack of information related to the situation or its lack of organization and lack of coherence stands as an obstacle to reaching the appropriate solution and using inference in it, and therefore the starting point for solving the inferential problem is the amount of information available about the problem to be solved (Al-Zayyat 1998: 40), as well as the absence of a relationship between the premises or The available information about the inferential position is one of the factors that hinder the solution of the situation (Rajah 1995: 117), and accordingly Abu Hatab sees that inference requires the use of a large amount of diverse information quantitatively and qualitatively about the nature of situations or the problem in order to reach convergent solutions

(Abu Hatab 1999: 17). Thus, premises are the basic building blocks upon which inference is built. Therefore, the solution depends on the abundance and validity of information and premises, as access to false inference is often due to information and premises. Matt on the nature of the inductive position is wrong (Runkle 1981: 20). In his theoretical literature on inference, Sternberg referred to the attempt to link old information that made him constant postulates for use at any time in order to produce and extrapolate new information (Solso 1999: 231) in new situations that he is exposed to and that require a solution to his problems, and confirms (Sultan 2000) that it is a mental process that starts from specific and well-established issues and ends by deriving a new result from those issues (Sultan 2000: 11). It is appropriate to solve the situation (Faraj 2002: 23), and that it does not seek to generate new knowledge from that available information and the established rules of inference, and it excludes the use of certain strategies in logical organization (Jarwan 1999: 56).

Cognitive Systems 2 Available Heuristic

This system refers to a higher mental capacity that is most reflective and analytical to changing reality. This system combines rational judgment and additional information derived from past experience, and requires time and cognitive energy (201: Crockery 2009). This system is usually used when the problem at hand is complex, accuracy is important, and time is not an issue (Crockery 2009: 210).

With a convergent view, In the available induction, it is based on extracting the common characteristic between a group of special cases of the available information and then formulating it in the form of a general rule or a generalization (a result in which these special cases are organized, and this means that the result is included in the information is achieved because of its new uses, and therefore the result is Here they are good and different from what is used in the past from the methods that were reached previously, and that arriving at a new idea or meaning that is not found in the premises requires the presence of another skill that would be extracted from the premises and the situation, as a result of bearing a meaning different from what it contained in the premises. This skill the individual begins with his premises and tries to find the results associated with the renewed reality by using the causal model, within the rule: What if… what will happen? From which both the cause and the premises are linked to producing the result, and even results are derived from them. Others follow the same method, and since the results have a meaning other than what is included in the premises, the new conditions will be generative, and thus it is considered one of the most important inferential skills through this conception (Talafha 1990: 67). Available reasoning includes a set of advanced mental processes that can be used in the formation and evaluation of new ideas, because we believe that they are correct in solving problems, and evaluating proofs and arguments, searching for evidence, reaching conclusions, testing hypotheses, and generating new knowledge they are flexible with (104: 1990 Small). This is confirmed by Evans (2001) that inference in its realities depends on short methods: such as representation inference, availability in inference, and the establishment of inference rules in situations related to the task or problem. Through what is available to him a large amount of preliminary information and accompanying experience to solve the situational problem (Evans 89: 2001). The main difference between the two systems is the processing speeds, in System 1 it is the slow system (Evans & Curtis 2005: 82). Although decision accuracy can be improved through deliberate thinking and effort, limited cognitive resources constrain the overall reliance on the system.

Previous studies: The researchers did not find a clear study directed towards the heads of scientific departments in the inference variable (available - well-established), so the study is considered the first locally, Arab and international.

Research Methodology and Procedures

First: Research Methodology: In the current research, the researchers used the descriptive method Description Research for its suitability in achieving the research objectives.

Second: Population of the Research: The current research community consists of department heads located in the universities of the Middle Euphrates, each of the University of (Babylon, Kufa, Karbala, Qadisiyah, Muthanna), with a total number of (718) heads and department heads.

Third: Sample of the Research: It included the following:

The exploratory sample (clarity of paragraphs and instructions sample The purpose of the

survey sample is to verify the extent to which the sample members understand the paragraphs of the scale and its instructions to them (Faraj 100:1997), calculate the time taken to answer it, and identify the difficulties facing the respondent (Khattab: 2009). 43). The size of the exploratory sample (20) of heads of departments at the University of Karbala, distributed randomly from administration and economics, was characterized by (5) department heads and (3) department heads. And from the Faculty of Law (4) department heads and (1) department heads, and from education for pure sciences (4) department heads and (3) department heads.

Statistical Analysis Sample: The statistical analysis sample for the paragraphs was randomly selected In order to obtain a more representative sample, it was based on the same opinion. However, (Anastasia 1989) indicates that the best sample size for paragraphs analysis is to be in each of the two peripheral groups in the total score (100) individuals, as the percentage (27%) of the sample size in each group was adopted in the total score, so that the number of individualsParagraph analysis sample (370) individuals (Anastasia 1989:27).

The main research sample: The main research sample was chosen by (50%) of the original population, so the sample amounted to (359), and the sample was chosen by random method with a proportional distribution.

Fourth: The search tool:

First Scale: Anchoring Heuristic

In order to complete the construction of the scale, the researchers carried out the procedures, according to their sequence, in succession: First: Defining the concept of inference for atype (the well-established available)

After using the literature contained in the theoretical framework and the adopted definition, the researchers prepared a separate questionnaire to investigate which of these trends in mental reasoning is more representative of the current sample to measure the concept of one of their types of reasoning, which the researchers identified in:

Available Heuristic

Anchoring Heuristic

Formulating the scale items:

After the definition of inference of the type (firm - available) has been defined. And to clarify the nature of the procedural definition, it was adopted in the collection and preparation of paragraphs of each type, so that they are consistent with its definition, and taking into account the nature and characteristics of the sample to which the scale will be applied and who are the heads of departments in the universities of the Middle Euphrates, and after reviewing the relevant literature, the researchers By formulating a number of (verbal declarative) paragraphs, taking into account the conditions for drafting the paragraphs also indicated by the researchers, and the result was a formulation

Available Heuristic paragraphs (1-20) paragraphs

Paragraphs and firm Anchoring Heuristic inference from (21-40) paragraphs

A vertebra in anticipation of vertebrae being deleted during measurement (Psychometric properties of vertebrae). They were divided into alternatives of the type: (always apply, apply often, apply sometimes, apply rarely, never apply), and the following weights were determined on the sequence (1,2,3,4,5).

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Validity and validity of the scale: The apparent validity of the (firm - available) inference scale and its validity:

This process refers to the logical analysis of the content of the scale or to verify its representation of the content to be measured (Alen & Yen 1979: 67), as the scale is examined to reveal the extent to which its paragraphs represent the aspects of the trait that it is supposed to measure (Abdul-Rahman 185:1998). In order to identify the validity of the paragraphs (apparent honesty in terms of importance and clarity of the inference scale of the type (firm - available), the researcher presented the scale of conscious thinking with its paragraphs of (40) to a group of arbitrators and specialists in the field of psychology, measurement and evaluation (Iraqis and Arabs) shown in Annex (2), and the questionnaire prepared for this purpose, Annex (3), and the researchers adopted the percentage, which is to obtain a percentage (80%) or more of the arbitrators' opinions, and to exclude the paragraph that obtained a lower percentage. At a higher degree than the value of a square such as any tabular value of (3.84) at a significance level of (0.05) and with a degree of freedom of one, and accordingly (6) paragraphs were deleted, and with this procedure (34) paragraphs were preceded, the researchers separate them as follows:

In terms of clarity: In the available Heuristic paragraphs, they are the paragraphs (1-2-3-4-5-7-8-9-10-12-13-14-16-17-18-19-20) because they have a value Chi-square of (30) and (100%).

At the time of the non-significant paragraphs, it is (6-11-15) for obtaining the Kai value of (0.53) and at a rate of (43%). And in the paragraphs of Anchoring Heuristic inference are the paragraphs (21-22-23-25-26-27-28-29-30-32-33-34-35-36-38-39-40) for obtaining the value of a square like the sum (19.2) at a rate of (90%). At the time of the non-significant paragraphs, it is (24-31-37) because it has a value of (0.53) and a percentage of (43%). Table (4) illustrates this In terms of importance: In the available Heuristic paragraphs, they are the paragraphs (1-2-3-4-5-7-8-9-10-12-13-14-16-17-18-19-20) because they have a value Chi-square (26.13) at a rate of (97%). At the time of the non-significant paragraphs, it is (6-11-15) for obtaining the Kai value of (0.53) and at a rate of (43%). And in the paragraphs of Anchoring Heuristic inference are the paragraphs (21-22-23-25-26-27-28-29-30-32-33-34-35-36-38-39-40) for obtaining the value of a square like the sum (19.2) at a rate of (90%). At the time of the non-significant paragraphs, it is (24-31-37) because it has a value of (0.53) and a percentage of (43%). Table (5) illustrates this

Table (4) The opinions of arbitrators and specialists regarding the validity of paragraphs in terms of clarity For the scale of inference of the type (firm - available) according to the Chi-square and percentage

inference direction	Paragraph numbers	The response of arbitrators and specialists		percentage	Calculated Chi-square value	Significance at 0.05ρ
		OK	not agree			
Available Heuristic	-9-8-7-5-4-3-2-1 -16-14-13-12-10 20-19-18-17	30	0	%100	30	function
	15-11-6	13	17	%43	0.53	nonfunction
Anchoring Heuristic	-26-25-23-22-21 -32-30-29-28-27 -38-36-35-34-33 40-39	27	3	%90	19.2	function
	37-31-24	13	17	%43	0.53	nonfunction

Table (7) the opinions of arbitrators and specialists in the validity of paragraphs in terms of importance For the scale of inference of the type (firm - available) according to the Chi-square and the percentage

inference direction	Paragraph numbers	The response of arbitrators and specialists		percentage	Calculated Chi-square value	Significance at 0.05ρ
		OK	not agree			
Available Heuristic	-9-8-7-5-4-3-2-1 -16-14-13-12-10 20-19-18-17	29	1	%97	26.13	function
	15-11-6	12	18	%43	1.2	nonfunction
Anchoring Heuristic	-26-25-23-22-21 -32-30-29-28-27 -38-36-35-34-33 40-39	28	2	%100	22.53	function
	37-31-24	13	17	%43	0.53	nonfunction

Setup Scale Instructions:

The scale's instructions are the guide that guides the respondent, and since the paragraphs prepared by the researcher are in a verbal declarative form, so I sought to make the scale's instructions clear and accurate for the university student according to gender, specialization, and type of study, and indicating (√) under the alternative that applies to the respondent. Among the five alternatives (always apply, apply often, apply sometimes, apply rarely,

never apply), if I asked the respondents to answer it, frankly and honestly for the purpose of scientific research, and there is no right or wrong answer as far as expressing their opinion, and that The answer is not known to anyone but the researchers, and there is no need to mention the name in order to reassure the respondent of the confidentiality of his responses (Al-Nabhan 2013: 85).

Scale correction: After preparing the scale items, the Likert method was adopted to formulate response alternatives. The appropriate degree for each paragraph according to the respondent's answer, where the weights were distributed among the alternatives of the five answers as follows: (always apply (5) degrees, apply often (4) degrees, sometimes apply (3) degrees, apply rarely (2) two degrees, do not apply at all(1) degree).

Statistical analysis of the scale items: The following are the verification procedures:

Power of Items

The researchers verified the discriminatory power of the paragraphs using the Contrasted Groups method by applying the scale items to the statistical analysis sample, which amounted to (400) of them, and then determining the total score for each of the respondents' forms, then arranging the forms in descending order according to the total score, from the top degree to the lowest degree, then assigning (27 %) of the forms with higher degrees, and (27 %) of the forms with lower degrees. The number of members of each of the upper and lower extremity groups was (108) department head, and after applying the t-test for two independent samples, to find out the significance of the differences between the upper and lower groups for the scores of each item of the scale, all items of the scale were by comparing them with the t-value. The tabular value of (1.96) is distinguished at the level of significance (0.05) and the degree of freedom (216). Thus, it was found that each of the paragraphs (3-18-28-38) is not significant, while the rest of the paragraphs retained their statistical significance, and thus the number of paragraphs to the limit of this procedure became (30) paragraphs, distributed over the two directions of inference, Table (8) illustrates this.

Table (8) The discriminatory power of the (established - available) inference scale items Using the two terminal group method

inference direction	T	elicit paragraphs	Senior group108		Lower group108		Calculated T-value	Significance at0.05
			the middle	deviation	the middle	deviation		
Available inference Available		1	4.78	.418	4.11	.702	8.52	function
		2	4.64	.587	3.48	.814	12.01	function
		3	4.71	.656	3.60	.864	10.63	function
		4	4.65	.535	4.16	.775	5.41	function
		5	4.88	.327	3.93	.883	10.48	function
		7	4.12	1.258	3.53	1.000	3.82	function
		8	4.80	.576	4.02	.896	7.61	function
		9	4.73	.504	3.46	.847	13.39	function
		10	4.51	.743	3.66	1.006	7.06	function
	.	12	3.75	1.261	2.91	.902	5.63	function
	.	13	3.44	1.499	2.72	1.289	3.78	function
	.	14	4.43	1.447	2.56	.221	5.54	function
	.	16	3.96	1.143	3.28	1.003	4.65	function
	.	17	4.92	.278	4.05	.715	11.79	function
	.	18	2.47	1.632	2.22	1.292	1.25	nonfunction
	.	19	4.49	.870	3.46	.790	9.11	function
	.	20	4.62	.862	3.76	.695	8.07	function
firm infere nce Anchor	.	21	4.47	.837	3.33	.785	10.32	function
	.	22	4.82	.383	3.99	.932	8.56	function
	.	23	4.85	.357	3.96	.927	9.31	function

	.	25	4.92	.278	3.95	.911	10.58	function
	.	26	4.89	.316	3.77	1.056	10.56	function
	.	27	4.80	.469	3.69	1.082	9.78	function
	.	28	2.05	1.555	1.98	.986	0.40	nonfunction
	.	29	4.80	.469	4.13	.821	7.36	function
	.	30	4.99	.410	2.67	.834	8.76	function
	.	32	4.88	.327	3.94	.789	11.44	function
	.	33	4.73	.504	3.99	.815	8.03	function
	.	34	4.60	.595	3.57	.673	11.92	function
	.	35	4.62	.542	3.33	.843	13.38	function
	.	36	3.45	.566	2.67	.621	12.60	function
	.	38	2.84	1.572	2.55	1.088	1.58	nonfunction
	.	39	4.85	.357	4.01	.891	9.09	function
	.	40	4.85	.357	3.87	1.111	8.73	function

*The tabular t-value is equal to (1.96) at the significance level (0.05) and at the degree of freedom (216).

Relationship of the paragraph score to the total score of the scale:

The researchers extracted the amount of the correlation between the score of each paragraph and the total score of the scale by using the Pearson Correlation Coefficient, and using the same analysis sample referred to in the previous paragraph as the statistical analysis sample, which amounted to (400). After using the t-test for the significance of the correlation and comparing it with the tabular t-value of (2.58) at the significance level (0.01), and the degree of freedom (398), the scale was considered structurally valid according to this indicator. It became clear that all the paragraphs achieved a statistically significant correlation that ranged between the level (0.01) shown in Table (9) that illustrates this.

Table (9) values of the correlation coefficients between the degree of the paragraph and the total degree of the scale And the T value of the correlation with the total score of the inference scale of the type (firm - available)

AvailableHeuristic				AnchoringHeuristic			
T	paragraph number	The value of the relationship to the type of inference	T value	T	paragraph number	The value of the relationship to the type of inference	T value
1	1	0.234	4.80	16	21	0.648	6.97
2	2	0.423	9.31	17	22	0.56	6.48
3	4	0.461	6.36	18	23	0.399	8.68
4	5	0.205	4.18	19	25	0.442	9.78
5	7	0.35	7.45	20	26	0.668	8.91
6	8	0.352	7.50	21	27	0.745	4.28
7	9	0.429	9.47	22	29	0.741	7.95
8	10	0.565	7.48	23	30	0.758	9.18
9	12	0.413	9.05	24	32	0.569	8.80
10	13	0.555	9.31	25	33	0.744	8.21
11	14	0.557	4.38	26	34	0.656	6.34
12	16	0.406	8.86	27	35	0.716	5.46
13	17	0.293	6.05	28	36	0.703	9.72
14	19	0.432	9.56	29	39	0.451	7.08
15th	20	0.882	5.85	30	40	0.665	7.53

**The tabular t-value is equal to (2.58) at a significance level of (0.01) and a degree of freedom (398).

*The tabular t-value is equal to (1.96) at the significance level (0.05) and at the degree of freedom (398).

Relationship of the degree of the paragraph with the total degree of the dimension to which it belongs:
The researchers extracted the t-value of the Pearson Correlation coefficient, and it was found that all the correlations, whether between the two domains or the correlation of the two types of inference with the total score of the scale are statistically significant after using the t-test for the significance of correlation and comparing it with the tabular t-value of (2,58) at the level of significance (0.01) And the degree of freedom (398), and this indicates that the two types of inference standardize the general concept of inference, and accordingly, the theoretical assumption matches the experimental analysis, and this is one of the indicators of construct validity (Faraj 1980: 315), and table (10) illustrates this.

Table (10) matrix of internal correlations between sub-domains and the total score of the scale

Relationship Matrix	Available Heuristic	the value T	Anchoring Heuristic	T value	Total marks	T value
Available Heuristic	1	0.00	0.419	20.64	0.742	22.08
Anchoring Heuristic	0.419	20.64	1	0.00	0.799	26.51
Total marks	0.742	22.08	0.799	26.51	1	0.00

**Tabular t-value equals (2.58) at a significance level of (0.01) and a degree of freedom (398).

The relationship of the degree of dimension to the total degree of the scale:
The researchers extracted the matrix of internal correlations between the domains of the (firm-available) inference scale, using the Pearson Correlation coefficient. The table of the amount (2.58) at the level of significance (0.01) and the degree of freedom (398), and this indicates that the two types of inference standardize the general concept of inference, and accordingly, the theoretical assumption matches the experimental analysis, and this is an indicator of the construction validity indicators (Faraj 1980: 315), and Table (10) illustrates this.

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Anchoring Heuristic	0.419	20.64	1	0.00	0.799	26.51
Total marks	0.742	22.08	0.799	26.51	1	0.00

**Tabular t-value equals (2.58) at a significance level of (0.01) and a degree of freedom (398).

Psychometric properties of the (available-established) inference scale: These two characteristics have been verified and as follows
Validity Scale Indicators: Through Types honesty the following:
Face Validity: This was achieved through the procedures referred to in the paragraph on checking the validity of the scale's paragraphs.

construction sincerity Construct validity: The validity of the construction of the current scale was verified through the following indicators mentioned previously in the statistical analysis of the scale items.

Factorial Validity:_
The researchers calculated honesty Amili for scale From During Perform analysis exploratory

factor For the overall scale inferred (30 items), which resulted from meeting the two sub-measures items (the two types of scale), and it was done according to the Principal Components method with Rotation Oblique Rotation in a manner Obilmin, after applying it to the statistical analysis sample consisting of (400), (shown in the statistical analysis). The oblique rotation is appropriate for practical life, due to the overlapping and correlation of variables in the same subject and the inability to explain it with factors completely independent of each other (Gouda 2008: 161). The oblique rotation is preferred because it is more realistic in representing the interrelationships of the factors, and provides us with an accurate picture of the strength of these correlations (Tegza 2012: 72), and the Opelmen method is done by finding a rotation of the extracted original factors, which reduces the product saturations of the factors, and this generates a solution with a simple structure And more inclined, that is, a stronger correlation between the extracted factors (Ghanim 2013: 74). The result of the exploratory factor analysis of the scale domains is that the efficiency of the model used to measure (KMO) amounted to (0.846) and with statistical significance, Teghza (2012) indicated that the test (KMO) for all matrix is required to be higher than (0.5), according to the Kaiser test, and he added that values ranging from (0.8 - 0.9) are good, meaning that the size of The sample is sufficient to perform the exploratory factor analysis, and then increase reliability for factors that will be obtained From Analysis factorial (Tegza 2012: 89), and the Bartlett test (1174.120), which is statistically significant at the level (0.000), indicates that Possibility Perform analysis factor, and the researcher relied on saturation (0.30) and above for each of the paragraphs according to the Guliford test (Guliford 1954:500), and in the case of saturation of the paragraph on more than one factor at the same time, the highest saturation is taken as a statistical sign, but all The saturation of the scale items was higher than (0.5), and the results of the factorial analysis were revealed (3) Factors whose latent root Eigen value exceeds (1), and explain the total variance of the factorial matrix, so that the extracted factors are considered statistically significant as long as their latent roots have a value greater than (1) (Athanasius and Al-Bayati 1977: 276). Table (11) illustrates this.

Table (11) Results of factor analysis of the inference scale And the saturation of its paragraphs with workers (available and well-established)

kind of inference	T	number Paragraph	before recycling		after recycling		Popularity values
			factor1	factor 2	factor1	factor 2	
Available Heuristic	1	1	0.517		0.332		0.685
	2	2	0.414		0.376		0.726
	3	4	0.398		0.28		0.736
	4	5	0.396		0.366		0.658
	5	7	0.373		0.335		0.586
	6	8	0.367		0.635		0.561
	7	9	0.776		0.64		0.789
	8	10	0.736		0.612		0.638
	9	12	0.674		0.526		0.678
	10	13	0.625		0.563		0.756
	11	15th	0.587		0.514		0.683
	12	16	0.573		0.502		0.686
	13	17	0.797		0.551		0.700
	14	19	0.527		0.399		0.614
	15th	20	0.697		0.468		0.723
	16	21		0.774		0.428	0.732
	17	22		0.539		0.426	0.574
	18	23		0.702		0.584	0.647

Anchoring Heuristic	19	25		0.67		0.538	0.626
	20	26		0.622		0.438	0.768
	21	27		0.479		0.527	0.792
	22	29		0.787		0.573	0.708
	23	30		0.609		0.612	0.705
	24	32		0.471		0.635	0.696
	25	33		0.56		0.618	0.619
	26	34		0.718		0.585	0.675
	27	35		0.408		0.449	0.662
	28	36		0.593		0.696	0.649
	29	39		0.634		0.945	0.634
	30	40		0.523		0.709	0.622
cumulative variance					8.022	12,522	
Explained variance					9.441	4.919	

And it turns out From Table (11) The impossibility of obtaining one inference factor from among the two types of inference, as its saturated paragraphs were distributed over (2) sub-factors, and it was shown The Worker first (available) root A latent value of (8.022) is explained by a value of (9.441) of the variance. It consisted of fifteen paragraphs, according to the paragraph number: (1-2-4-5-7-8-9-10-12-13-14-16-17-19-20) whose saturation values ranged between (0.447 - 0.678) All of them are statistically significant. was root latent for the worker The second (firm) with a value of (12,522) It is explained by the value of (4,919) of the variance and it consisted of fifteen paragraphs, according to the paragraph number: (21-22-23-25-26-27-29-30-32-33-34-35-36-39-40) Their saturations are between (0.385 - 0.527), and all of them are statistically significant. The results showed that the rotation did not lead to any supportive results for the one-factor hypothesis, which supports the correctness of the psychometric orientation of the current research, in both types of firm and available inference.

Scale stability indicators Reliability Scale:

Half-segmentation method

The stability coefficient calculated in this way is called the internal consistency coefficient, which aims to indicate the amount of consistency between the two parts of the paragraphs in measuring the trait or characteristic. Al-Yaqubi 2013: 256). From there, the researcher verified the value of the overall stability coefficient of the scale in this way, and it was estimated at (0.723). And the available inference is Available Heuristic with an estimate of (0.756). Anchoring Heuristic inference with a score of (0.733). The overall reliability coefficient of the scale was corrected by the Spearman-Brown equation, and it was a value of (0.84). It is a good stability coefficient.

Cranbach Alpha: To extract stability in this way for the dimensions and for the scale as a whole, the researchers used the Cranbach Alpha equation, as the stability coefficient of the scale as a whole was (0.909), while the available inference was estimated at (0.866). Anchoring Heuristic inference with a score of (0.815). They are good indicators of the stability of the scale, as Cronbach confirmed that the scale that has a high coefficient of stability is an accurate scale. (Cronbach 1964:639)

Describe the (available-established) inference scale in its final form:

After verifying the standard characteristics represented by the indicators of statistical analysis, validity and stability of the scale, the inference scale in its final form consists of (30) items divided into two types: Available Heuristic and the number of its items (15) items. Anchoring Heuristic and the number of its paragraphs (15) paragraphs, and in front of each paragraph there is a five-point scale for the response: (always apply (5) degrees, apply dearly (4) degrees, sometimes apply (3) degrees, rarely apply (2) degrees, do not apply Never (1) degree). Therefore, the highest score that the respondent can get for his answer on the scale items is (150) degrees, and the lowest score he can get is (30), and the hypothetical average of the scale is (90) degrees. Hence, those who obtain values higher than (90) enjoy the available inference, and those who obtain values

less than (90) do not have firm inference, and thus the scale is ready to be applied to the basic research sample.

Presentation, interpretation and discussion of the results

The first goal: the (available - well-established) reasoning of the professor, heads of scientific departments in the universities of the Middle Euphrates:

The results of the research showed that the average degrees of inference (available - well-established) for the research sample of (359) head of department in the universities of the Middle Euphrates, It reached (119.73) degrees, with a standard deviation of (10,422) degrees, and the hypothetical mean was (90). The T-table value of (1.96), at the significance level (0.05) and the degree of freedom (521), and this result indicates that the heads of departments in the universities of the Middle Euphrates have inference in general. According to the available data in Table (1) and Figure (1), they illustrate this.

Table (1) T-test for one sample in inference (available - well-established)
The heads of the scientific departments in the Middle Euphrates universities have

variable	the sample	SMA	standard deviation	hypothetical mean	degree of freedom	T value		Indication level
						calculated	tabular	
inference	**359**	**119.73**	**10,422**	**90**	**358**	**54.044**	**1.96**	**0.05 function**

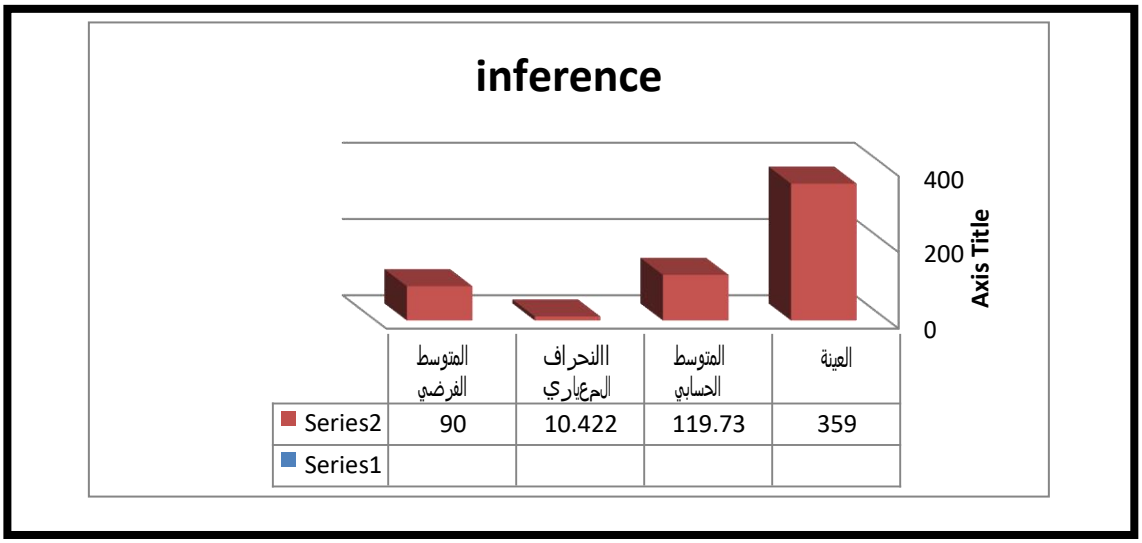

Figure (1) A comparison between the arithmetic and hypothetical mean of the measurement
The scores of the research sample members on the inference scale (available - well-established) among the heads of scientific departments in the universities of the Middle Euphrates

The second goal: The statistical significance of the differences in inference (available - well-established) among the heads of scientific departments in the universities of the Middle Euphrates according to the variables (university, specialization, gender, academic degree).

To extract the differences in the sub-variables for inference (available - well-established) among the heads of scientific departments in the universities of the Middle Euphrates according to the variables (university, specialization, gender, academic degree). The two researchers used two-way ANOVA to reveal the results of statistically significant differences for the variables (university, major, gender, academic degree), and for the interactions of both binary between (university * major) (university * gender) (University * Academic Degree) (Certificate * Gender) (Specialization * Degree)

and for tripartite interactions in (University * Specialization * Gender).

First: Functional values in the inference:
With regard to what was produced by the two-way ANOVA, the researchers found that the significant values were:
statistical differences in each of the (University), where the calculated t-values of (5.701) were greater than the tabular t-value of (3.841) at the level of significance (0.05). This indicates that the head of the department differs in their use of inference in terms of the university (Babylon, Karbala, Kufa, Qadisiyah, Muthanna). And to check which of the university is more used for inference. The researchers intended to use Scheffe's equation to extract the differences between them. Where the difference for the equation was (4.30 96) and this means that there is a difference between the averages. Referring to the same averages, the researcher found that the Karbala University average with a value of (121.085) with a standard deviation of (6.361) was greater than the arithmetic averages of the rest of the Middle Euphrates universities. This indicates that the heads of the scientific departments at the University of Karbala are the ones who use firm reasoning at the expense of the heads of departments in the remaining universities. shown in Table (3) and Figure (3).

Table (3) Fisher's value for the averages of heads of scientific departments In solid reasoning

T	Certificate	SMA	standard deviation	Fisher value
1	Karbala	121.085	6.361	4. 3096
2	Kufa	120.460	9.310	
3	Babylon	119,386	7.835	
4	Qadisiyah	118,560	9.988	
5	synonym	118.432	8.675	

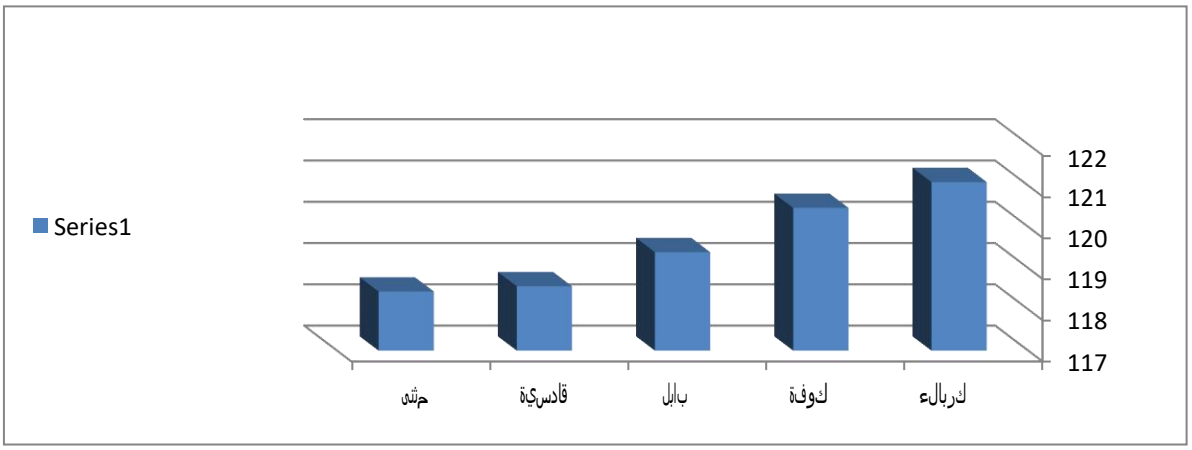

Figure (3) The difference between the averages of universities in the well-established inference
Statistical differences in each of (specialization), where the calculated values of (4.407) were less than the tabular value of (3.841) at the level of significance (0.05). This indicates the existence of a statistical significance for the heads of scientific departments in the universities of the Middle Euphrates in terms of specialization (teaching and teaching). And to check which of the type is more used for inference. The researchers intended to use Scheffe's equation to extract the differences between them. Where the difference for the equation was (7.7125), which means that there is a difference between the averages. Referring to the same averages, the researcher found the following:
ranked first in firm inference: it was found that the average human has a value of (119,619) with a standard deviation of (1.296).
second place in the firm inference: it was found that the scientific average has a value of (119.288) with a standard deviation of (6,333) shown in Table (4) and Figure (4).

Table (4) Fisher's value for the averages of specialization for heads of departments In solid reasoning

T	Type	SMA	standard deviation	Fisher value
1	Humanitarian	119,619	1.296	7. 7125
2	scientific	119,288	6.333	

Second: Non-functional values in firm inference:

With regard to what was produced by the Three Way ANOVA, the researchers found that the significant values were:

And in terms of bilateral interactions, the interaction between (university * major) with the calculated values of (0.67) was less than the tabular value of (3.841) at the level of significance (0.05). This indicates the absence of statistical significance for the heads of scientific departments in the universities of the Middle Euphrates in terms of (university * specialization).

In terms of binary interactions, the interaction between (type * total) with the calculated T-values of (1.291) was less than the tabular T-value of (3.841) at the level of significance (0.05). This indicates the absence of statistical significance for the heads of scientific departments in the universities of the Middle Euphrates in terms of (type * university.)

In terms of bilateral interactions, the interaction between (scientific degree * university) with the calculated T-values of (0.827) was less than the tabular T-value of (3.841) at the level of significance (0.05). This indicates that there is no statistical significance for the heads of scientific departments in the universities of the Middle Euphrates in terms of (scientific degree * university).

In terms of triple interactions, the interaction between (type * specialization * university) with the calculated T-values of (0.746) was less than the tabular T-value of (3,841) at the level of significance (0.05). This indicates the absence of statistical significance for the heads of scientific departments in the universities of the Middle Euphrates in terms of certificate (type * specialization * university). shown in table (9).

Table (9): Results of the Three Way ANOVA on the significance of differences in inference (available - well-established) among department heads according to the variables (type, specialization, Scientific degree, University).

Contrast sources	sum of squares	degree of freedom DF	mean squares	Calculated phasic F	indication ɒ 0.05
the University	**2457,084**	**4**	**614,271**	**5.701**	**function**
Specialization	**474.842**	**1**	**474.842**	**4.407**	**function**
social Type	**732.916**	**1**	**732.916**	**6.802**	**function**
Degree	**1204.406**	**2**	**602.203**	**5.589**	**function**
University* Major	**151.012**	**3**	**50,337**	**.467**	**nonfunction**
University* Gender	**556.297**	**4**	**139,074**	**1.291**	**nonfunction**
University* Degree	**623.683**	**7**	**89.098**	**0.827**	**nonfunction**
Gender* Degree	**1512,998**	**2**	**756.499**	**7.021**	**function**
Specialization* Degree	**518.052**	**1**	**518.052**	**4.808**	**function**
University* Specialization* Gender	**241.004**	**3**	**80.335**	**0.746**	**nonfunction**
The error	**34802.597**	**330**	**107,748**		
total	**43274.89**	**359**			

The table value equals (3.841) at the level of significance (0.05)
The researchers explain their findings through the following results:
The heads of departments in the universities of the Middle Euphrates have a well-established reasoning, in the first place is the University of Karbala, and the assistant professors have a large percentage, and in females it is higher than males, where the humanistic specialization is superior to the scientific in the use of solid reasoning. It is he who will decide the extent of his ability and success in solving subsequent problems (Tawq and Adas 1984: 128). From this, (Erickson) emphasizes that principles, including reasoning, aim to strengthen the bond of social relations, and the individual is accustomed to acting according to his prevailing beliefs, and whatever the individual's appreciation of these laws and rules, he may desire to perform actions or behaviors that are contrary to them (Harre & Lamb 1986:89).).

Conclusions

In light of the findings of the current research, we can conclude the following:

1. The heads of the practical departments at the University of Karbala are the ones who use solid reasoning at the expense of the heads of departments in the remaining universities.
2. Female department heads have a higher established reasoning than males.
3. The heads of departments of the humanistic specialization have a well-established reasoning.
4. Heads of departments with the rank of professor, teacher and assistant teacher have a well-established reasoning.

Recommendations

Based on the results of the current study, the researchers recommend the following:

1. Working on holding educational seminars to develop the available reasoning and reduce the firm reasoning for all heads of scientific departments, especially in light of the current circumstances of the multiplicity of decisions.
2. Developing the reasoning available to the heads of scientific departments (professor, teacher, assistant teacher)
3. Conducting a study similar to what the researchers did on department heads in public universities and comparing it with department heads in private universities.

Suggestions

1. Conducting a similar study on the heads of scientific departments in psychological variables other than those covered in the current research
2. Presenting the results of the current research to the Ministry of Higher Education and Scientific Research to benefit from them
3. Giving lectures to develop the reasoning available to the heads of scientific departments in universities.
4. Lectures to develop the reasoning available to the heads of scientific departments in universities.

References

The Holy Quran

1. Abu Allam, Ragaa Mahmoud (2011), Research Methods in Psychological and Educational Sciences, Universities Publishing House, Cairo - Egypt.
2. Abu Allam, Raja Mahmoud (2013), Quantitative, qualitative and mixed research methods, Dar Al Masira, Cairo - Egypt.
3. Abu Asaad, Ahmed Abdel Latif (2010): Personality Psychology, 1st Edition, The Modern Book World, Irbid - Jordan.
4. Abu Ghazal, Muawiyah (2006): Theories of human development and their educational applications, 1st Edition, Dar Al Masirah, Amman - Jordan.
5. Abu Hatab, Fouad (1999): Mental abilities, Anglo-Egyptian Library, Cairo - Egypt.
6. Abu Hatab, Fouad (2008), Psychological Evaluation, Anglo-Egyptian Library, Cairo - Egypt.
7. Alen, MJ & Yen, WM (1979): Introduction to measurement theory, Monterey, CA: Books/Cole Publishing company.
8. Al-Imam, Mustafa Mahmoud and others (1990): Evaluation and Measurement, 1st Edition, Dar Al-Hikma, Baghdad.
9. Al-Jarjani, Ali bin Muhammad bin Ali Al-Zain Al-Sharif (d. 816 AH), Book of Definitions, Volume 1, i 1, Dar al-Kutub

al-Ilmiyya, Beirut - Lebanon, 1403 AH - 1983 AD.
10. Al-Khatib, Muhammad Ahmad, Al-Khatib, Ahmad Hamid (2010): Psychological Tests and Measures, Al-Hamid House and Library for Publishing and Distribution,
11. Al-Khouli, Muhammad Ali (2000): Methods of Teaching Arabic, Dar Al-Falah for Publishing and Distribution, Jordan.
12. Al-Shahrani, Fahd Yahya (2013): A proposed training program to develop the teaching performance skills of physics teachers at the secondary stage in light of the requirements of integration between science, mathematics and technology, Master's thesis, Curricula and Methods of Teaching Science, College of Education. King Khalid University, Abha, Saudi Arabia.
13. Al-Shawareb, Aseel, Al-Khawaldeh, Mahmoud (2009): Moral and Social Growth, Dar Al-Hamid for Publishing and Distribution, Amman, Jordan.
14. Anastas A. & Urbina S. (1997), Psychological testing, (7th ed.). New York: Macmillan.
15. Anastasi, A (1989). Psychological Testing, (4th ed), New York, Macmillan company.
16. Anastasi, A. (1976), Psychological testing (4 th ed.). New York: Macmillan.
17. Anastasi, A. (1988) Psychological testing. 6th Edition, Macmillan Publishing Company, New York.
18. Anastasi, A., & Urbina, S. (1982). Psychological Testing 7th ed. Prentics- hall International. ?
19. Astson (2007): The Effect of the Conflict's Goal through Avoiding Tactics, Human Communication Research 38(2):222-252.
20. Athanasius, Zakaria Zaki, Al-Bayati, Abdul-Jabbar Tawfiq (1977): Descriptive and inferential statistics in education and psychology, Al-Mustansiriya University Press, Iraq, Baghdad.
21. Bernhard Müllner (2017), The Elements supporting the Learning Environments by Confronting the avoidance Tactics, Educational Research and Innovation, OECD, Publishing, Paris.
22. Beyer, B.K. (1987). Practical strategies for the teaching of thinking. Boston, MA: Allyn and Bacon.
23. Bouazza, Al-Tayeb (2016): In the philosophical reading of scientific induction, Al-Namaa Center for Scientific Studies.
24. Brack, PV (1989) Causal Reasoning and Inference, Making Jading Importance to Story Statements, Child development 60, PP.286-797.
25. Chalabi, Sawsan Shaker (2005): The basics of constructing psychological and educational tests and measures. Aladdin Foundation, Damascus.
26. Chi Wang et al (2012): The Tactics used to resolve the dispute over the Performance of Employees in Universities, Kampala International University (KIU)
27. Cronbach, L.J. (1964). Essentials of Psychological Testing. New York: Harper & Row.
28. Cross, LH & Billingsley, BS (1992): Predictors of commitment, job satisfaction and intent to stay in teaching: a comparison of general and special educators. The Journal for Special Education, 25, 453-471.
29. Daoud, Aziz Hanna, Abdul Rahman, Anwar Hussein (1990): Educational Research Methods, Dar Al-Hikma Press for Printing and Publishing, Baghdad.
30. Dowidar, Somaya Saad (2019): Mental Health of Adolescent Children, Layan Institute for Publishing and Distribution.
31. El-Sayed, Abdel-Rahman Mohamed, (2006) Contemporary Psychology - a cognitive introduction, Cairo, Arab Thought House, Egypt.
32. El-Zayat, Mustafa, Fathi (1988): Learning Disabilities: Theoretical, Diagnostic and Therapeutic Basis: Disorders of Cognitive Processes and Academic Abilities, Universities Publishing House, Egypt.
33. Evans, EM, Poling, D., & Mull, M. (2001). Confronting the existential questions: Children'sunderstanding of death and origins. Paper presented at the Biennial Meeting of the Soci-ety for Research in Child Development, Minneapolis, MN.
34. Ferguson (1991), Chances and Choices: Making Integration Work, Vol. 30, Issue 1.
35. Fiske, S. T., & Taylor, SE (1991). (2 nd ed.). Mcgraw-Hill Book Company.
36. Frandsen, AN (1967): Educational Psychology (2ed). NewYork McGraw-Hill, Inc.
37. Gentner, D. & Smith, L. (2012). Analogical reasoning. In VS Ramachandran (Ed.) Encyclopedia of Human Behavior (2nd Ed.). pp. 130-136. Oxford, UK: Elsevier.

38. Ghiselli et al (1981) (, Meta-analytic investigations of the relation between intuition and analysis, Vol. 30, Issue 1.
39. Guilford, J.P. (1954). Psychometric Methods. New York: McGraw-Hill.
40. Habashi, Najdi and Nice (1991), a study of the components of the need for knowledge for students of the Faculty of Education in Minya, Journal of Research in Education and Psychology, Volume 1, No. 5
41. Hadar, Abdel Aziz (2013): The Diagnosis of Personality Disorders Book, 2ndEdition, Psychology Library.
42. Hammouda, Mahmoud Abdel-Rahman (1998): Childhood and Adolescence (Psychological Problems and Treatment), Cairo - Egypt.
43. Harre, R & Lamb, R. (1986) the dictionary of developmental and educational psychology. Britain. Basil Blackwell Ltd.
44. Harrison, A. (1983): A language testing handbook. London: Macmillan. vi + 144 pp. ISBN 0-333-27174-2
45. Hasson, Tayseer (2004): Quick reference to diagnostic criteria from the Revised Diagnostic and Statistical Manual of Mental Disorders, American Psychiatric Association.
46. HenrySoon.S (1963), Correction of Item – Total Correlation in Item, Psychological analysis, Vol. 28, No.3.
47. Hoffman, Lyean (1982), Diagnosis and Assessment in Family Therapy. Family Therapy Collections, Rockland, Maryland, Aspen Systems.
48. Ibrahim, Abdel-Sattar, Askar, Abdullah (2005): Clinical Psychology in the Field of Psychiatry, Volume 1.
49. James G. March, Herbert A. Simon (1958), Organizations, Published By: Sage Publications, Inc. 87.
50. Jamil, Issam Zakum (2012): Logic and Critical Thinking, 1st Edition, Dar Al Masirah, Amman.
51. Jarwan, Fathi Abdel Rahman (2007): Teaching Thinking - Concepts and Applications, Dar Al-Fikr for Publishing and Distribution, Damascus - Syria.
52. Jaynes, Edwin T. 2003. ProbabilityTheory: The Logic of Science. Cambridge university press.
53. Johnson-Laird, Legrenzi, Girotto,Legrenzi, and Caverni's (1999) mental- model theory of extensional reasoning. Psychological Review, 109. 722–728.
54. Kahneman D. (2011) "A perspective on judgment and choice." American Psychologist. 58, 697–720.
55. Khattab, Muhammad Ahmad (2009): The psychology of the autistic child (definition - classification - symptoms - diagnosis - causes - therapeutic intervention), House of Culture for Publishing and Distribution.
56. Latané, B., & Wolf, S. (1981). The social impact of majorities and minorities. Psychological Review, 88 (5), 438–453.
57. Marlette, G, A & Kristeller, J (1999) Mindfulness and mediation, integrating spirituality in to treatment, Journal of Psychosomatic Research, 2(64), 393-403.
58. Neale, P., Boyce, C. (2006) Conducting In-Depth Interview: A Guide for Designing and Conducting In-Depth Interviews for Evaluation Input. Pathfinder International Tool Series, Monitoring and Evaluation-2.
59. Nickerson, R. S. (1985). Understanding. American Journal of Education, 93 (2), 201–239.
60. Nunnally, J.C. (1976), Vanishing individual differences just stick your head in the sand and they will go away. Journal of Instructional Psychology 3, 28–40..
61. Popper, Karl. (1999). " Falsificationism." In Scientific Inquiry: Readings in the Philosophy of Science, edited by Robert Klee, New York: Oxford University Press.
62. Pritchad, Alan (2013), Learning Methods, 4th Edition.
63. Radwan, Samer Jamil (2009): Mental Health, Dar Al Masirah for Printing and Publishing, Amman
64. Rageh, Ahmed Ezzat (1977): The Origins of Psychology, National House of Printing and Publishing, Cairo.
65. Rashwan, Hussein Abdel Hamid Ahmed (2006): The Origins of Scientific Research, University Youth House for Publishing and Distribution, Alexandria - Egypt.
66. Renko, Mark (2011): Creativity: Its Theories and Topics: Research, Development, and Practice, 1st Edition, translated by: Alawneh, Shafeeq Falah Hassan, Obeikan Publishing, Saudi Arabia.
67. Rifkin, Ryan M.; Lippert, Ross A. (2007): Notes on Regularized Least Squares, Massachusetts Institute of Technology Computer Science and Artificial Intelligence Laboratory.
68. Rottman et al (2012, Causal Systems Categories: Differences in Novice and

Expert Categorization of Causal Phenomena, Cognitive Science A Multidisciplinary Journal 36(5):919-32.
69. Rozin etal (2008), A Pulsational Model for the Orthogonal Polarization Modes in Radio Pulsars, The American Astronomical Society. All rights reserved. Printed in USA.
70. Runkle, James Reade (1981): Gap Regeneration in Some Old-growth Forests of the Eastern United States, Vol. 62, No. 4.
71. Russell, Bertrand (2008): A History of Western Philosophy, translated by: Muhammad al-Shanti, Dar al-Kutub al-Ilmiyya, Beirut - Lebanon.
72. Saleh, Ahmed Mohamed (1991). Piaget's stages of mental development and their relationship to authenticity among third year secondary school students in "Abu Dhabi". Educational Studies, Volume 6, No. 32.
73. Saliba, Jamil (1980): The Philosophical Dictionary, Volume 2, Lebanese Book House, Beirut - Lebanon.
74. Shakib, Mustafa (2007): The Ten Types of Personality Disorders.
75. Taghza, Mohamed Bouziane (2012): Exploratory and confirmatory factor analysis; Their concepts and methodology using SPSS and LISREL packages, Dar Al Masirah for Printing and Publishing, Amman - Jordan.
76. Talfaha, Hamed (1990): The effect of using the historical and traditional method in developing the deductive thinking skills of tenth grade students in Jordan, unpublished MA thesis, Yarmouk University, Irbid
77. Thorndike, Robert, Heagan, Elizabeth (1980), Measurement and Evaluation in Psychology and Education, 4th edition, translated by: Abdul Rahman Adas and Abdullah Zaid Al Kilani, Jordan Book Center, Amman - Jordan.