International Journal of Early Childhood Special Education (INT-JECSE)
DOI:10.9756/INTJECSE/V14I5.1055 ISSN: 1308-5581 Vol 14, Issue 05 2022

Systemic intelligence among students of the History Department at Diyala University

Assistt.Prof. Muhammad Adnan Muhammad al-Azzawi(Phd)
Diyala University/College of Basic Education
Mohammed.adnanmm@gmail.com
Researcher / Jassim Mohammed Shehab
Diyala University/College of Basic Education
jassim9425@gmail.com

ABSTRACT
The current research aims to identify:
Systemic intelligence among students of the History Department at Diyala University.
2- The significance of the differences in the systemic intelligence among the students of the History Department at the University of Diyala according to the gender variable (males - females).

To achieve the objectives of the current research, the researcher adopted the descriptive (relational) approach to his study. The research community may consist of (859) male and female students. The current research sample included (266) male and female students who were chosen by the random stratified method from the University of Diyala, College of Education for Human Sciences and College of Basic Education.

The researcher built the systemic intelligence scale for university students based on the Rothmann model (Rauthmann, 2010), and it consisted in its final form of ((32 distributed over (4) main areas, and placed in front of each paragraph (5) alternatives: (always, often, sometimes). , Rarely, never) and the students' answers scores were calculated in the research sample for each scale and the data was analyzed using the appropriate statistical means through the (Spss) program.
The researcher reached the following results:
1- Students of the History Department at Diyala University possess systemic intelligence at a level above average.
2- There is no statistically significant difference in systemic intelligence according to the gender variable (male-female).

keyword: system intelligence

Research problem

Educational institutions in our time face many challenges as a result of the rapid and continuous changes and developments imposed by the control of information and communication technology on various aspects of life, including what is related to the aspect of education reducing temporal and spatial boundaries. And the use of teaching strategies, methods, and evaluation methods that comply with the requirements and challenges of the current stage, in a way that contributes to raising the level of motivation and achievement for university students in order to achieve their educational goals. Internal and external motives, with their strength and patterns, affect his perception of the world, what he thinks about, and the actions he engages in, and the events and changes that include society in all its fields must leave their effects on all segments of society, including university students, and those effects that may burden them or be Obstacles and obstacles to their progress at the level of study or work (Muhammad, 2014: 2) These changes and challenges and For problems that require the individual to change the type of his interaction with problems and to include his style of organization and adaptation, and this requires his organization of systemic intelligence (Al-Feel, 2015: 25), and (Al-Harthy, 2014) indicates that systemic intelligence is related to the issue of life development and realization in all concepts and that the individual's lack of enjoyment This represents a cognitive activity that may make him unable to deal with the problems he faces, and this requires that it be managed systematically without neglecting any aspect of life (Al Harthy, 2014:85), without possessing and practicing the skills of systemic intelligence, students will lose control over themselves, because it is not possible to direct the self in any successful way without contacting with what is happening organized around us, as anyone can achieve success in his life even if he does not possess much verbal, physical, mathematical, emotional, social or personal intelligence Or music, but this cannot be done

without the presence of the capabilities and skills of systemic intelligence within the environment in which the person lives. (2010:11, Hamalainen&Sarinen)

The researcher asked an exploratory question to a sample of professors of the history department. The question included the question: To what extent do the students of the history department possess systemic intelligence? The answers ranged between weak and acceptable, and the largest percentage tended to weak students' possession of systemic intelligence, and this was confirmed by the study (Al-Azzi, 2018), which confirmed that the weakness of systemic intelligence is due to the students' lack of knowledge and skills, as well as their weak life experiences and how to deal with events and situations in a way Systemic intelligence, as all this would affect their vision of various life events and their ability to deal with them, which is the core of the capabilities of systemic intelligence (Al-Azi, 99:2018), and accordingly, the problem of the current research can be determined by answering the following question: What is the systemic intelligence of Students of the Department of History at the University of Diyala?

RESEARCH IMPORTANCE:

The university stage is one of the critical stages in an individual's life, which determines the shape of his future life, and in order for the student to pass this stage successfully, he must make effort and perseverance, bear the academic burdens and university requirements, as well as face the problems of daily life, all of which are a measure of self-satisfaction and possessing a kind of intelligence among the The university student (Shaqqura, 2012: 3), and intelligence is a mental process on which the success of the individual in his life depends on many mental and social abilities and skills. It can be denied the importance of intelligence and its role, whatever its kind, in leading individuals to advance in their lives and reap successes in various fields or in multiple fields, especially those related to the type of intelligence in which the individual excels. The link to include the fields of economy, politics and development in its various manifestations (Sada, 88: 2003), and systemic intelligence enables individuals to perceive the system without neglecting its components and Realizing the relationships of influence and vulnerability between these parts and recognizing the impact of the system on others and on us (Al-Feel, 28: 2015). They have a (2004:21, Westerlund).

research aims:

The current research aims to identify:

1- Systemic intelligence among students of the History Department at Diyala University.

2- The significance of the differences in the systemic intelligence among the students of the History Department at the University of Diyala according to the gender variable (males - females).

search limits:

The limitations of the current research include:-

1- Objective limits: a study of the relationship of systemic intelligence with achievement struggle.

2- Human limits: students of the Department of History in both basic education and education for the humanities.

3- Time limits: the academic year (2022-2021).

4- Spatial boundaries: Diyala University.

Define terms:

Systemic intelligence

Everyone knew him

(Abdul-WahabKamel 2010): It is the system of performing complex systems such as the human brain and scientific systems as intertwined and complex systems, building and organizing work as a team, and then systemic intelligence includes mutual interactions and reactions between the components of the system on the one hand and the external environment on the other, so it is the result The final analysis of the interrelationships between the emotional and cognitive functions of the brain and psychomotor (Kamel, 2010:483).

Hamalainen&Sarinen (2014, Hamalainen&Sarinen): Intelligent behavior in complex contexts and systems, with all their interactions and backlashes.

(2014:18, Hamalainen&Sarinen)

Zaher Shaker (2014): It is a new concept that focuses on the individual's vision of situations and events in an integrated systemic way, and his ability to change and develop systemically within the structure of the system (Shaker, 2014: 6).

Procedural definition: It is the total score obtained by the respondent through his answer to the paragraphs of the systemic intelligence scale.

History Department: Department of History

It is one of the departments affiliated with the University of Diyala. Students are prepared professionally and educationally to obtain a Bachelor's degree in Education, specializing in history, for a period of four years.
https://basicedu.uodiyala.edu.iq

Chapter II

Theoretical aspects and previous studies

The first axis: theoretical aspects

system intelligence

The origins of systemic intelligence:

In the past few years, there have been many types of intelligences, as Gardner indicated that humans possess many intelligences such as linguistic intelligence, musical intelligence and emotional intelligence, and not one intelligence, and far from the crucible of multiple intelligences pioneered by Gardner, systemic intelligence appeared as one of the important topics in the field of intelligence. Educational psychology, despite its short chronological life, exceeds a few years, but it has attracted the interest of many researchers and psychologists in different regions around the world.
(Elephant,2015:29)

In the opinion of Jones and Corner, the concept of systemic intelligence was deduced from previous concepts of intelligence on Gardner (1993, Gardner) and Goleman (2006, 1995).
(2:2011,jones&Corner)

The origins of systemic intelligence can be traced back to many serious scientific works in various branches of science and knowledge, such as the works of Senge (1990), the works of Farouk Fahmy, and Lajawsky (2004, 2002, 1999) Tagawsky and the works of Hamilin and Sarnan (2002, 2004) (Kamel, 2010: 438).).

In (2002) the term systemic intelligence was launched and since then it has been applied to avoid conflicts in environmental management in general, as well as in the classroom, and in leadership and management training, and it has become part of the organizational life movement in (Finland) (Elephant, 2013: 29).

The nature of systemic intelligence:

In essence, systems intelligence depends on Singh's saying, in which he considered (small changes can lead to big results in the system). Simple that can change any system he lives.

Systemic intelligence aims to change a system. If a person notices a change in the behavior of another person, it may lead to a change in his mental model and then his behavior. When a series of this type of change occurs, it can significantly change the output of the system. (Hamilin and Sarnen describe (2014) This process has four dimensions: mental change, cognitive change, individual behavior change, and system change.
(2014:2,Sasaki)

It is noteworthy that systemic intelligence is a modern concept and is based on four basic conditions:
1- Interact dynamically.
2- Mutual interactions between elements in general.
3- Feedback Loops.
4- The system must be supported in its own language to achieve effective communication between its components.

And systems intelligence is very useful in understanding human behavior in complex interactive settings to change the educational reality such as the educational system and the political and industrial system.
(Full, 2010:14)

Systemic intelligence features:

Systems intelligence is concerned with acting intelligently within systems, and that life within systems can be experienced at various levels of intelligence according to many other things, including:
1_ The individual's ability to choose appropriate systems for specific goals, purposes and methods for constructing meaning.
2_ The individual's ability to control the systems and benefit from the momentum they provide.
3_ The individual's ability to benefit from the possibility of changing the system.
4_ The individual's ability to read the actions and behaviors of others within and around the system.

Systemic intelligence expresses a holistic and actually connected ability within humans, as we mentioned earlier, this ability already exists since childhood in the form of implicit, but complex non-verbal skills that operate in the emotional dimension of attachment and subjectivity, systems intelligence depends on those abilities to achieve interdependence, communication and participation, Difficulty may arise in trying to measure systemic intelligence, because it is related to continuous

participation and joint processes, as well as because it is related to communication and the ability to relate to the whole entity.
(2010:16-17,(Hamalainen&Sarinen .)

The importance of systems intelligence:

The success of an individual in his life depends on many psychological and social abilities and skills, and the importance of these abilities and skills and their role in success in life varies according to the nature and content of these abilities, and skills, none of us can deny the importance and role of any kind of intelligence in leading individuals to the path of life and achieving success in various specific areas or areas, especially those areas in which the individuals associated with intelligence are good at.

At first, Helmy El-Fil sees that mental (cognitive) intelligence is no longer seen as the only factor that controls the success of an individual's life, as was believed from the future, but rather to many other factors that are credited with the success of man in various aspects of life, often People with average mental intelligence achieve amazing success in their lives, while others with high intelligence fail in their lives despite the scientific titles they have obtained (Elephant, 2013: 55).

Table1
The difference between systemic and unstructured intelligence

Non- Systemic Intelligence	Systemic Intelligence
There are individual differences in divided mental abilities.	It is not a fixed sum of the intelligence of individuals.
It depends on the individual's development of his own abilities.	It depends on interaction and feedback with other systems.
works solo.	It works as a symphony.
It deals with individual systems.	It deals with complex systems.
He perceives the self as a singular state.	He perceives the self as an interpenetrating part of the whole.
It is based on separate points of view.	Depends on multiple perspectives and angles.
regulates the activity of the individual	Organizes team work.
The person thinks the part	The person thinks of all.
The parts have no meaning in affecting the whole.	System reinforces by awareness and feeling all parts.
Relay.	synchronous.
Searches for items.	Looking for system remnants.

(Full,13:2010)

The main features of systems intelligence:

1- The structure of the system.
The adaptive building blocks.
3- Schedule for structural development.
4- Rules for learning and adapting.
5- Organizing memory in knowledge and logic (Jassim, 2018:45)

Helmy El-Fil sees that one of the characteristics of the intelligent system is that it:

1- He sees himself as part of the system, and realizes the effect of this system on him.
2- Benefit from the feedback generated by the system.
3- Has the ability to be aware of the system, and to understand the factors supporting the system and the factors hindering it.
4- Possesses the ability to intervene in the structure of the system with modification, improvement and development.
5- Possesses initiative and initiative.
6- Possesses a great deal of creative thinking skills.
7- Possesses a great deal of systemic thinking skills.

8- Possesses a great deal of social skills and social intelligence.
9- Has the ability to make good and correct decisions.
-10 He has confidence in the other.
11- He has the ability to lead his life to success.
-12 He has very good personal relationships.
13 Replaces its negative aspects with positive ones.
14 - Collaborative and can work in a team.
(Elephant,2015:62-63)
Systemic Intelligence Levels:

Since the emergence of systemic intelligence as a subject subject to research and experimentation in psychology at the hands of a group of scientists and researchers led by (Hammlinn and Sarnan) in (2002), many attempts have appeared to formulate dimensions, capabilities, and levels for this type of intelligence, but these attempts are very few, They differ from each other, as will be seen in the following:

First, Rothman describes three ways to formulate systems intelligence:
-1 Systemic intelligence as a stable and coherent As A trait.
2- Systemic intelligence as a style of mental processes and behaviour.
3- System intelligence as an ability that appears in the performance of individuals.
(18:2010, Rauthmann)
According to Jones and Korner, the stages of systemic intelligence are:
1- Reflexive system intelligence
2- Attentive system intelligence
3- System Intelligence Active
4- System Intelligence Inspired
8):2011, jones&croner)
Hamilin and Sarnen explain the levels of systemic intelligence as follows:
The first level: seeing the self within the system: This dimension is represented in the individual's ability to see himself and his roles in the system.
The second level: thinking about systemic intelligence: It is the individual's ability to know the productive ways of behavior and the ability to understand the possibilities that emerge from the system.
Level Three: Management of Systemic Intelligence: This dimension is represented in the individual's ability to practice productive methods in the system.
Fourth Level: Supporting Systemic Intelligence: This dimension is represented in the individual's ability to pay attention to the system and to support intelligent behavior systematically.
Fifth level: Management using systemic intelligence: This dimension is represented in the individual's ability to start applying systemic intelligence in his organization.
(2007:50, Hamalainen&Sarinen)
Studies on systemic intelligence
Tormanen Study (2012, Tormanen) Systemic Intelligence Questionnaire:
Tormanen's study (2012) aimed to build a systemic intelligence questionnaire among university students, as it concluded that there are eight components of systemic intelligence. It also aimed to verify the psychometric conditions of the questionnaire. The study sample consisted of (1577) students at Alto University in Finland. The study revealed that There are nine factors for systemic intelligence (active response, meditation, social system skills, positive integration, harmony, systemic awareness, wise action, active exploration).
Elephant study (2013) designing an electronic course based on the principles of cognitive flexibility theory and its impact on the development of systemic intelligence and reducing the cognitive burden among students of the Faculty of Specific Education, Alexandria University:

This study aimed to evaluate the effect of designing an electronic course in psychology based on the theory of cognitive flexibility in the development of systemic intelligence among students of the Faculty of Specific Education at the University of Alexandria, and evaluating the effect of an electronic course based on the theory of cognitive flexibility and its impact on reducing the extraneous cognitive load and the core cognitive burden among students of the Faculty Specific Education at the University of Alexandria, it also aimed to evaluate the effect of designing an electronic course in psychology based on the theory of cognitive flexibility in developing the closely related cognitive load among students of the Faculty of Specific Education at the University of Alexandria. In the fourth stage, the researcher built a measure of systemic intelligence, a measure of cognitive burden and an achievement test in educational psychology prepared by him, in addition to preparing a list of principles for designing electronic courses derived from the theory of cognitive flexibility. The results of the study

revealed that there are statistically significant differences between the average scores of the students of the control and experimental groups in The dimensional and pre-measurement of the abilities of the systemic intelligence and their total sum in favor of the dimensional measurement, as revealed by the A study on the existence of statistically significant differences between the weighted average of the scores of the students of the two groups in the cognitive burden and the extraneous cognitive burden and in the total sum of the types of cognitive burden in favor of the control group, while there are statistically significant differences between the average scores of the students of the control and experimental groups of the closely related cognitive burden in favor of the group Experimental (Elephant, 2013:23).

5- Diab's study (2015): Systemic intelligence and its impact on academic achievement in light of the theory of cognitive burden among university students:

This study aimed to identify the systemic intelligence and its impact on the academic achievement of the student of the University of Hail in the Kingdom of Saudi Arabia, and the research sample consisted of (200) male and female students at the university. Statistics using the . programThe statistical package, and the results of the study concluded that there is a significant correlation between systemic intelligence and academic achievement, and the results also concluded that there are no statistically significant differences between males and females in systemic intelligence (Diab, 2015: 12).

Benefit aspects from previous studies:

1- The researcher benefited from previous studies by looking at the objectives, methodology, and sample, which helped the researcher mature his current research.

2- Help the researcher get the general idea about the topic we are dealing with.

3- Previous studies have an effective role in determining the theoretical framework of our current research.

4- It saved a lot of time and effort for the researcher, because through previous studies, the researcher became comprehensive knowledge about the subject of her research, and this in turn saved a lot of time and effort.

5- Previous studies gave a lot of experience to the researcher, making him more knowledgeable about the subject of his research, and avoiding making mistakes that reduce the value of the research presented.

Research Methodology and Procedures

This chapter deals with a presentation of the research methodology, the research sample, the methods that were used in preparing the research tools and the procedures for applying them to the current research sample, and determining the statistical methods used to process the data.

1- Research Methodology:

The research method means the method used by the researcher when studying a particular phenomenon, through which the various ideas are organized in a way that enables him to treat the research problem (Al-Mahmoudi, (35: 2019), and since the current research aims to reveal the correlation between its variables, so the researcher adopted the descriptive associative approach because The most appropriate approaches are suitable for studying the correlational relationships between variables and revealing the differences between them, and it is not only limited to studying the phenomenon and showing its size and characteristics, but rather it reaches to collect and analyze information and draw conclusions, to be a basis in its interpretation (Al-Atbi, Al-Hiti, 25: 2011).

Search procedures:

The current research community is determined by the students of the preliminary morning study in the History Department in the College of Education for Human Sciences and the College of Basic Education, University of Diyala for the academic year (2021-2022), and the number of students of the research community reached (859) male and female students, distributed according to gender, males and females. 346) male students, while the number of females reached (513) students. Table (2) shows this:

Table (2)Shows the distribution of research community members according to college, gender and stage

percentage	total	Faculty of Basic Education			College of Education for Human Sciences			Stage
		Total	female	male	Total	female	male	
%21.54	185	55	29	26	130	77	53	first

%36.90	317	88	56	32	229	130	99	Second
%22.58	194	58	34	24	136	85	51	Third
%18.98	163	45	29	16	118	73	45	Fourth
100%	859	246	148	98	613	365	248	Total

3-sample research:

It means a subset of the research community, selected from it according to special rules so that the drawn sample is as representative of the study community as possible (Abbas et al., 218:2014), and the sample identifies a group of individuals derived from the original community and truly (honest) representation, ie: That the variables under study be represented in the sample with the same value and level of the original community. (Atifa, 2012: 273), the sample size is large, the results were accurate and objective, and the researcher chose the research sample by stratified random method with a proportional distribution according to a pre-determined percentage and table (3) shows that:

Table (3) shows the distribution of the research sample members according to college, gender and stage

percentage	total	Faculty of Basic Education			College of Education for Human Sciences			Stage
		Total	female	male	Total	female	male	
%21.43	57	17	9	8	40	24	16	first
%36.84	98	27	17	10	71	40	31	Second
%22.56	60	18	11	7	42	26	16	Third
%19.17	51	14	9	5	37	23	14	Fourth
100%	266	76	46	30	190	113	77	Total

search tool:

For the purpose of achieving the objectives of the research and measuring its variables, it was necessary to use a tool for measuring systemic intelligence and a tool for measuring achievement struggle.

Systemic Intelligence Scale:

(Allen&Yan) indicates that the process of building or preparing any scale passes through the basic steps: -

A- Determine the concept to be measured.

B - Defining the areas of the concept.

C - Drafting paragraphs for each field.

D- Statistical procedures for analyzing paragraphs.

E- Psychometric indicators of the scale. (1979:118, Allen&Yan

Defining the concept to be measured (defining the concept of systemic intelligence):

The researcher reviewed a number of research and studies related to systemic intelligence in order to build the appropriate tool for measuring systemic intelligence, such as the study (Elephant, 2013), the Rothmann study (2010, Rauthmann), and the Rani study (2007, Ranne), and since the researcher relied on the Rothman model (2010, Rauthmann) provided a theoretical framework in the treatment of the current research, so the researcher built the scale according to this model, and determined the theoretical definition of the concept of systemic intelligence based on the definition of Rauthmann (2010, Rauthmann) as: “a new and useful concept in understanding human behavior in complex life situations Inside the system and how the individual deals and interacts within the structure of the system even if he does not have objective knowledge about it (Rauthmann 2010:25).

Determining the areas of concept (determining the areas of systemic intelligence): The researcher has identified the areas of systemic intelligence according to the Rothmann model (2010, Rauthmann), which are as follows:

● Total Systemic Perception: a complex system and the actions of the individual within the individual. This system, but also refers to the feedback from this system in this factor. People have perceptual and intellectual patterns that refer to people and environments "working together" as a whole, and their perception can be described as systemic or holistic. This factor reflects all of perception, inclinations or opinion.

● Effective systemic interaction: This factor includes the individual's ability to set plans and develop the system through a future vision, knowledge of strengths and weaknesses, developing them in the future, and setting flexible, adjustable goals.

● Systemic meditation: This factor includes the individual's ability to control and control the system, his continuity of intelligent behavior in a system, his possession of rationality, sensitivity to situations, his awareness and control of his weaknesses, and his respect for the opinions of others.

● Systemic flexibility: This factor includes the individual's awareness of the relationship between cause and effect and the impact of feedback on phenomena, reflecting on his thinking and actions, generating new interpretations, playing with ideas and possibilities, and practicing long-term thinking.

Scale validity:

Honesty is one of the important characteristics that must be taken care of in constructing standards (1971:28, Tyler). Ebel), and is achieved by presenting it to a group of arbitrators specialized in the field that measures the scale (Obaidat et al., 1984: 200)

Statistical means

● Chi-Square
● Person Correlation Coefficient
● Alpha Cronbachs equation
● T-test for two independent samples
● The skew factor, the flatness factor, the standard error, the arithmetic mean, the median, and the mode to know the nature of the average distribution of the answers of the members of the research sample
● One-sample T-test
● One Way Anova Analysis
● Z-test
● Chi-Square

THE FOURTH CHAPTER

PRESENTATION AND INTERPRETATION OF RESULTS

This chapter includes a presentation of the results reached by the researcher according to the objectives of the research, and a discussion of those results in the light of the literature and previous studies that were presented.

the first goal:

Identifying the systemic intelligence among the students of the History Department at the College of Basic Education, University of Diyala.

To achieve this goal, the arithmetic mean of the research sample scores of (266) male and female students was extracted for the systemic intelligence scale, as the arithmetic mean value reached (122.696) degrees and with a standard deviation of (17.979). Its value is (96) degrees and by using the t-test for one sample, it was found that the calculated t-value is equal to (24.217) and when balanced by the tabular t-value of (1.97) at the level of significance (0.05) and the degree of freedom (265) it turns out that the calculated t-value is greater than the t-value tabular, that is, there is a significant difference between the arithmetic mean of the sample and the hypothetical mean of the scale in favor of the arithmetic mean, and Table (4) illustrates this:

Table (4)

The results of the T-test to test the significance of the difference between the arithmetic mean and the hypothetical average to identify the systemic intelligence of the research sample

Indication level	T value	degree	The	Standard	Mean of score	sample

0.05	tabular	calculated	of freedom	hypothetical mean of the scale	deviation		
Statistical function	1,97	24.217	255	96	17.979	122.696	266

In order to find out the differences between each field of systemic intelligence in the research sample, the arithmetic mean, standard deviation and the calculated and tabular T-value were extracted as shown in Table (5)

Table (5) results of (T-test) to test the significance of the difference between the arithmetic mean and the hypothetical average to identify each area of systemic intelligence in the research sample

Indication level 0.05	T value		degree of freedom	The hypothetical mean of the scale	Standard deviation	Mean of score	sample	fields
	tabular	calculated						
Statistical function	1.97	24.481	265	24	4.814	31.226	266	total systemic awareness
Statistical function	1.97	23.298	265	24	5.463	31.805	266	Effective systemic handling
Statistical function	1.97	20.991	265	24	5.179	30.665	266	systemic meditation
Statistical function	1.97	18.072	265	24	5.449	30.038	266	systemic flexibility

It is clear from the following table (5)

1 - The domain of the total systemic cognition: the arithmetic mean was (226.31) and the standard deviation was (814.4) and the calculated t-value reached (481.24), which is higher than the tabular value of (97.1), and it is a statistical function in favor of the arithmetic mean, because the arithmetic mean is greater than the hypothetical average of (24).

2_ The field of effective systemic interaction: the arithmetic mean reached (805.31) and the standard deviation was (463.5), and the calculated t-value reached (298.23) which is higher than the tabular value of (97.1) and it is a statistical function in favor of the arithmetic mean, because the arithmetic mean is greater than the hypothetical average of (24)).

3- The field of systemic reflection: the arithmetic mean was (665.30) and the standard deviation was (179.5) and the calculated t-value reached (991.20), which is higher than the tabular value of (97.1) and it is a statistical function in favor of the arithmetic mean, because the arithmetic mean is greater than the hypothetical average of (24)).

4- The field of systemic flexibility: the arithmetic mean was (038.30) and the standard deviation was (449.5) and the calculated t-value was (072.19), which is higher than the tabular value of (97.1) and it

is a statistical function in favor of the arithmetic mean, because the arithmetic mean is greater than the hypothetical average of (24)).

This result is attributed to: The success of the educational system in educational colleges in developing students' higher-order thinking skills, such as the processes of analysis, synthesis, evaluation and creativity, which are key elements for individuals' possession of systemic intelligence, through courses (educational – specialized – general) which require students to move from The processes of memorization and assimilation to assessment and creativity processes through application, analysis and synthesis to achieve their educational goals and obtain an appropriate level of academic achievement that matches their abilities and skills. These processes are the key to learning systemic intelligence (Hamalainen& Saarinen, 2007, 16), and the researcher believes that the accumulation of different experiences in the research sample, whether in different academic levels and life experiences, and informing them about the different cultures of the countries of the world through what was made available by the Internet and technological and informational developments helped to develop their mental abilities in general and the abilities of systemic intelligence in particular, as well as their Modern strategies and methods used by faculty members in the classroom, which help students to form a vision of linking the elements of the system with each other by identifying the relationships between those elements and how those elements affect each other on the one hand and on the other hand how they affect the system in general. (Scheetz& Yates, 2002) The systemic vision in education helps students to understand information in a coherent manner that affects and is affected by each other and enables students to make and develop decisions.

The second goal:

Finding the significance of the statistical differences in the systemic intelligence of the research sample according to the gender variable (male-female)

It is clear from Table (6) that there is no statistically significant difference at the level (0.05) in the systemic intelligence scale according to the gender variable (female, male) in the research sample. The average score of males was (122.776), with a standard deviation of (19.351), and it The average score of females (122.642) with a standard deviation of (17,056), and the calculated t-value was (0.060), which is less than the tabular t-value (1.97) at the level of significance (0.05) and the degree of freedom (264).

table(6)

The results of the test of the significance of the differences between the mean scores of the research sample for systemic intelligence by gender variable (males - females)

Indication level 0.05	T value		degree of freedom	The hypothetical mean of the scale	Standard deviation	Mean of score	sample
	tabular	calculated					
Not statistically significant	1.97	0.060	264	19.351	122.776	107	Male
				17.056	122.642	159	Female

This result is attributed to: The educational environment within the university institution was able to reduce the differences between males and females through the provision of standardized courses and the use of teaching methods and methods within the classroom that take into account individual differences by faculty members, as well as using methods to evaluate students' performance that depend on objectivity and comprehensiveness. To determine the strengths and weaknesses of students that are compatible with both males and females**.**

Conclusions, recommendations and suggestions

First: Conclusions

1 - The research sample possesses systemic intelligence, because they have the skills of analysis, synthesis, evaluation and creativity, which are the main elements of systemic intelligence.

2- There are no statistically significant differences according to (gender), (college), (study stage), because the educational environment within the university institution was able to reduce the differences between males and females through the provision of standardized courses as well as the use of evaluation methods based on Objectivity and comprehensiveness suit both parties, in addition to the fact that students at this stage gain close experiences through previous stages or life experiences. the problems

Recommendations:

In light of the results of the current research, the researcher recommends the following:

1- The necessity of having curricula to develop the ability of systemic intelligence among university students to enable them to see situations in a systematic manner and to understand relationships and concepts.

2- Holding workshops and training courses concerned with the development of systemic intelligence at all age groups.

Suggestions:

1- Conducting a similar study to reveal the relationship between systemic intelligence and achievement struggle in other academic stages.

2- Conducting a study dealing with systemic intelligence and its relationship to other variables.

Referances

Al-Otbi, Aziz Abbas, Al-Hiti, Muhammad Yusuf (2011): Scientific Research Methods, Concepts, Methods, Analysis and Writing, Al-Yamamah Library, Iraq.

Elephant, Helmy Mohamed Helmy Abdel Aziz (2013): Designing an electronic course in psychology based on the principles of cognitive flexibility theory in developing systemic intelligence and reducing cognitive burden among students of the Faculty of Specific Education, University of Alexandria, unpublished PhD thesis, Faculty of Education - Alexandria University, Electronic library.

• Elephant, Helmy Mohamed Helmy Abdel Aziz (2015): Systemic Intelligence in the Theory of Cognitive Burden, 1st Edition, Cairo, Anglo Library.

• Al-Mahmoudi, Muhammad Sarhan Ali (2019: Scientific Research Methods, 3rd Edition, Dar Al-Kutub, Yemen).

• Jassim, Sarah Jabbar Salman (2018): Systemic intelligence and its relationship to the quality of psychological life among university students, unpublished master's thesis, College of Education, University of Basra, Iraq.

• Atifa, HamdiAboulFotouh (2012): Scientific Research Methodologies in Education and Psychology, Universities Publishing House, Cairo.

• Abbas, Muhammad Khalil, Nofal, Muhammad Bakr, Al-Absi, Muhammad Mustafa, Abu Awwad, Feryal Muhammad (2014): An Introduction to Research Methods in Education and Psychology, 5th Edition, Dar Al Masirah for Publishing, Printing and Distribution, Amman - Jordan.

• Muhammad, Salma Obeid, (2014): Self-determination and emotional experience and their relationship to achievement struggle among university students, unpublished doctoral thesis, College of Education for Pure Sciences / Ibn Al-Haytham / University of Baghdad - Iraq.

• Al-Azi, Hind Nizar Mustafa Muhammad (2018): Systemic intelligence and its relationship to high-ranking thinking among university students, unpublished master's thesis, College of Education - University of Diyala - Iraq.

• Saadeh, Jawdat Ahmed (2003): Teaching Thinking Skills, Dar Al-Shorouk for Publishing and Distribution, Jordan.

• Kamel, Abdel WahabKamel (2010): Systemic Intelligence and Brain Functions (An Analytical Study of Concepts and Applications), Conference of the Egyptian Society for Psychological Studies.

• Al-Thaqafi, Zaher Shaker (2014): Legalizing the Systemic Intelligence Test on Special Education Students, unpublished Master's thesis, College of Education - Umm Al-Qura University.

• Diab, Mohammed (2015): Systemic intelligence and its impact on academic achievement in light of the theory of cognitive burden among university students, research presented at the Education Conference in the State of Qatar.

• Obeidat, Thouqan, Adass, Abdel-Rahman, Abdel-Haq, Kayed (1984): Scientific Research (its concept, tools and methods), Dar Al-Fikr Contemporary, Cairo.

• Allen, M.J., yen, W. M. (1979). Introduction to Measurement Theory. Book Cole, California.

• Ebel, R. L. (1972) . Essentials of Education Measurement. Prentice - Hall, New York .

• Hamalainen, R. P., & Saarinen, E. (Eds). (2007). Systems Intelligence in Leadership and

• Rauthmann(2010): masuringtrit Systems Intervention firt step towards a trait .

• Tyler, L.E. (1971): Tests and measurements, second edition, New Jersey, Prentice-Hall, Inc

• Westerlund, M. (2004): Theory of Constraints Revisited- Leveraging Teamwork by Systems Intelligence. Mat-2.108 Independent Research project in Applied Mathematics. Helsinki University of Technology pp1-29.

• Sheldon, K. M., &Kasser, T. (2008). Psychological threat and extrinsic goal striving. Motivation and Emotion., journal for the philosophy of Religion

• Jones, R., & Corner, J. (2011). Stages and Dimensions of Systems Intelligence. Systems

• Hamalainen, R. P., & Saarinen, E. (Eds). (2010): Essays on Systems Intelligence, Espoo: Systems Analysis Laboratory, Aalto University SchoolofScienceRetrieved from http://systemsintelligence.aalto.fi/SI2010.html
• Hamalainen, R. P., Luoma, J., & Saarinen, E. (2014): On the Importance of Behaviora, Operational Research: The Case of Understanding and Communicating about Dynamic Systems, European Journal of Operational Research.
• Hamalainen, R. P., & Saarinen, E. (Eds). (2007): Systems Intelligence in Leadership.
• Sasaki, y (2014): Systems Intelligence in Knowledge Management lmplementation: Amomentum of the secl. Proceeding of the 15th lnternatioal symposium on science knowledge (kss2014) pp69-74.