The Effect of the Exam and Electronic Correction on the Metacognitive Thinking of Postgraduate Students

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Abstract

Impact of the electronic exam on the development of systemic thinking for postgraduate students (PhD) of the Faculty of Physical Education and Sports Sciences - Mustansiriya University for the academic year 2017-2018. The aim of the research was to find out the impact of the electronic exam in the development of systemic thinking for postgraduate students of the Faculty of Physical Education and Sports Sciences / Mustansiriya University. The results of the research that the electronic exam program and all the materials of the second course has a positive impact on systemic thinking. The electronic exam helped to develop the scientific level of the materials of the second course for postgraduate students (PhD).

1. Introduction

Developed countries have taken care of human development and have prepared the appropriate means to achieve these goals. The civilized state has the right to take care of its distinguished and talented children, especially those with high mental abilities, because they are the real wealth that contributes to the development and education of thinking, and because thinking is the process by which intelligence is exercised through its activity on experience, that is. It includes the ability to use intelligence and bring it to reality. And the interest in the subject of thinking is as old as man, as it always required the use of the mind to adapt to the environment with its countless variables, which over the ages posed great challenges that man had to face in order to guarantee himself the survival and continuity of life. And in all sports, agricultural, cultural and scientific disciplines, and because mental abilities are affected by genetics and the environment and can be developed by providing appropriate means and the environment that help develop mental abilities. Higher education and scientific research by providing modern scientific laboratories, and among those laboratories is the electronic computer laboratory to be used in the electronic exam and electronic correction and to leave the old methods that take a long time to obtain results and need corrective committees, objection committees, high financial costs, observers and correctors who may be exposed to errors in correction, which leads to It makes educational work exposed to problems that may not be a catalyst for mental and scientific development.

2. Research Problem

Man was able to achieve most of his material needs through research and investigation, but he was not able to achieve all his desires and psychological needs. Through thinking, a person can deal and control the problem situations that he faces in his daily life.

And controlling it by using solutions that come through thinking, and through it he can satisfy his psychological needs and acquire knowledge and experiences that qualify him to adapt with himself and with the environment, whether social or natural, and understand the nature of things, analyse, interpret and divide them and take appropriate decisions.

Most specialists in the educational and psychological fields assert that mental abilities, especially metacognitive thinking, can develop in the case of the development of the means used in education, especially modern ones, as well as the appropriate environment for learning. There are many types of thinking, especially metacognitive, critical, creative, systemic and probing.... ..etc, and called for new visions calling for the inevitability of introducing the cognitive approach, as one of the methods of organizing content, which presents the different experiences in a logical form.

The Ministry of Higher Education emphasizes the use of study systems commensurate with the tremendous development in education, and among these systems is the transition to the curriculum system, which helps to develop the mental abilities of the student and helps to build the personality of the new generation with self-reliance to obtain good results. Hence the problem of research began to identify the impact of Exam and electronic correction in the development of metacognitive thinking among postgraduate students (PhD) to be the beginning of other studies and research for types of thinking.

3. Research Objective

The use of modern methods and means such as the electronic exam and electronic correction lies in developing thinking to obtain mental processing of sensory inputs in order to form ideas in order to perceive sensory stimuli and judge them as an investment of time where the student obtains the degree of the exam immediately after turning off the computer and this makes the student psychologically comfortable and does not question the His answers and keep the student away from accusing the corrector (the teacher) and providing the economic aspect, that is, we do not need answer brochures or observers from the professors, and we achieve speed in announcing the results, and this requires appropriate thinking. Cognitive...etc

4. Theoretical studies

There have been many calls and appeals in recent times to reconsider the traditional methodology in education, which relies on indoctrination and stuffing information away from thinking, and called for new visions calling for the inevitability of introducing the metacognitive approach as one of the methods of organizing content, which presents the different experiences in a logical form that appears It emphasizes the interdependence, interaction, overlap, intertwining and integration between these experiences and works to link and interact with the learner's previous knowledge in his cognitive environment with what he will learn from new experiences, which makes what he learns meaningful and reduces the effort he makes to link new experiences with those that happened. This enables him to make a change in the form of new knowledge, which makes him able to summon it in different life situations.

4.1 Definition of thinking

Thinking is a gift from God Almighty, as He singled out human beings from the rest of the creatures, and it represents the highest types and most complex forms of human behaviour, and it is the highest rank of the ranks of mental work. Given the complexity of mental operations, these operations performed by the brain in response to millions of stimuli, and views have varied between scientists and researchers. Educators about the definition of thinking because of the differences and multiplicity of philosophical and theoretical foundations and trends.

In order to show the different viewpoints in the definitions of thinking, we will try to present a number of them, namely:

Where (De Bono, 2003) sees that there is no one agreed upon definition of thinking because most of the definitions are related or similar to one of the levels of thinking, someone might say that thinking is a mental activity and say that it is the logic that depends on experiences, and all this is true at a certain level or he may see Thinking is a rational exploration of experience that aims to reach a goal. This goal may be achieving understanding, solving a problem, or judging things.

Mayer believes that thinking may occur when an individual faces a problem and needs a decision and solution.

While Barbara Presscisn believes that thinking is a complex cognitive process due to the acquisition of knowledge, or that it is an organized process aimed at providing the individual with knowledge, and Solso sees that thinking is a cognitive mental process in response to new information after complex processing that includes imagination and analysis And making judgments and solving problems, and Baron goes to the fact that thinking is very important in people's daily lives because it seeks to achieve the goals of the individual, or seeks to solve the problem.

It should be noted here that the individual may arrive as a result of thinking to solve his problems without the need to implement them in practice, and that the decision or idea that lives in the mind of its owner and is not applied abroad is not an idea

Rather, it is just an illusion in the head of its owner, since ideas lie in their beneficial results that add something new to knowledge, and thinking is a stable process in the brain and based on the foregoing, it can be said or indicated that thinking is characterized by the following characteristics.

1- Thinking is a purposeful activity or behavior or mental action that comes from the brain, and it does not happen in a vacuum but in certain situations.

2- Thinking is an innate behavior that changes with the change in the individual's experiences, quantitatively and qualitatively, that is, through the interaction of genetics with the natural environmental aspect (the natural and social environment).

3- It is a characteristic of humans, which distinguishes it from the rest of living creatures because it contains a sophisticated level of thinking

4- Thinking is a relative concept, so it is not conceivable that the individual reaches the degree of perfection in thinking, or achieves and practices all kinds of thinking, as man cannot alone solve all the problems he faces or surrounds him.

5- Thinking occurs in different forms and patterns that may be logical, symbolic or verbal.

6- It is an invisible or tangible behaviour that is inferred by the behaviour of the individual.

7- It consists of a set of interaction of cognitive processes and experiences.

4.2 Characteristics of thinking

Science has benefited from the various primary materials inherent in nature (iron, aluminum, copper, lead, chlorine, bromine..... and others). Thanks to reaching and interaction between the properties of those materials. A good and mature scientific researcher is always looking for the properties of things so that he can control, predict and understand them.

The question: Was psychology able to know the characteristics of thinking? He studied thinking over decades and in different directions, including descriptive, analytical and empirical. These studies reached important facts for thinking, namely:

1- It occurs when a person does not have an immediate habit with which to face the situation.

2- It must include a period of time that elapses between receiving the stimulus and the appearance of the response.

3- Thinking is an implicit internal process that we do not see directly, but we infer it from the behaviour of the performance that comes from the individual in a situation that requires thinking.

4- Thinking is based on symbols that mediate between the environment and the underlying internal processes that ultimately lead to behaviour.

4.3 Thinking Necessities

Thinking is a necessity to keep pace with the demands of life and adapt to it: the saying of filling students' minds with information is no longer useful. The most important thing is to teach students how to use and employ their information in useful ways that will benefit them and their society with benefit, self-realization and happiness in work and marriage, and most importantly, that we teach the student what he wants to learn It is not what we want to teach, and teach him how to think about solving his problems, not to learn ready-made solutions to situations and problems, which is what is happening in the advanced world of education today. Because those who learn ready-made solutions will find it difficult to solve the increasing problems in the age of technology.

Socrates, the martyr of intellect, preceded all men when he debated with people in Athens and taught them how to think, so that he was called the midwife of minds, and even paid the price for his thinking. Adapting to the successive developments in this fast-paced age requires the teacher to teach his students new skills to use in new situations. Rather, we all need to think about searching for sources of information necessary for all areas of our social, religious, cultural, political, economic, psychological, professional, etc... even if they are stored. A person has information about situations he has gone through, so he needs to think about choosing the information needed to deal with the different situations that confront us in all areas of our lives. Any distinction is appropriate for this situation or that.

2- Thinking is necessary to discover every unknown in this universe: Islam has called for people to use their minds and to think about the creation of the heavens and the earth and everything that God has created in this universe in order for them to believe in him and to gain insight into the realities of existence and adapt them to his happiness and to be able to worship his Lord. The facts of the universe are stars and planets And the heavens and the earth are among the means that indicate the Creator and His greatness for the sake of His Unity, glorification, glorification, and true belief in Him. Thinking is a part of worshiping the Almighty Creator

3- Teaching the individual how to obtain information is much more important than teaching him the information itself: because the individual who learned the information and did not learn how to obtain it will remain dependent on others and will remain unable to access the information necessary for him, which hinders his progress in various aspects. His life, which will make him feel frustrated and low self-concept, and a decline in high mental activity, but the tendency to monotony in this activity and stop thinking may occur if a person continues to rely on past situations.

4- Thought is necessary for everyone, especially if the focus is on its function and on its magical and wondrous ability in managing and facilitating the affairs of life and overcoming difficulties for the benefit of human beings. It offers humanity.

5- Thinking is one of the necessities and requirements of purposeful education that can play a role in developing thinking processes and skills that enable individuals to develop their competencies.

6- Thinking is important to achieve success in school and public life and through it self-realization can be achieved. In the field of work, where sound thinking helps the individual to succeed and feel happy and superior. The student also enables the student to create good relationships in the school environment with his comrades, teachers and relatives, which helps him to achieve academic achievement. The applicant through whom he can join the university to achieve the goals of that individual and then join a job through which the individual can achieve himself.

7- Thinking is necessary to achieve the different needs of the individual, whether they are biological or cognitive, or related to his security and respect and the development of his knowledge. If a person had not been characterized as thinking and using it in all aspects of his life, he would not eat bread, build a house, ride a car, become a doctor or an engineer, nor gain the appreciation of others and obtain his security and safety.

8- Thinking is a necessity in order to develop and develop society and achieve the well-being of its members, as the credit is due to thinking about developing people's lives and achieving their well-being. To defy it, conquer it, adapt to it, make it serve him, and make it a palatable ride for whatever he wants. Using the technology of his idea, he was able to live in a comfortable house, drink cold water in the hot summer, enjoy warmth in the cold winter, communicate with others, and use devices and tools that contributed to solving many problems. His life problems, to enjoy all that is useful, to conquer disease, etc., all because of his employment and his use of his mind and brain.

9- Thinking is a necessity for the development of education. Thinking serves both the teacher and the learner together. Through thinking, the human being was able to develop the largest curricula, and make them suitable for the age stages of the students and help to adapt the classroom environment and devised techniques and means that helped in the preparation and training of teachers to use modern methods of teaching. Instead of relying on the method of punishment, thinking about modern methods of learning has become a planned system, a curriculum based on scientific methods that suit the needs of the learner on the one hand, and the needs of the society that looks at the educational system from a productive rather than a consumerist view. Freedom to choose the material, method, and method, and to participate in the preparation, improvement and development of programs, which led to an increase in the individual's motivation towards learning. All of this came as a result of human thought and his creative intellectual output.

4.4 Reasons to think

1- Excitement: A person often asks many questions, regardless of his age, and asks why? Through which he wants to learn about the things that surround him in a manner of surprise and astonishment? The child wonders and wonders why lightning and thunder happen? Why does water evaporate? In sum, when an individual is faced with an astonishing situation that he had no prior experience with, he is astonished and confused about this, and

then wonders why this happens, and begins to think about the causes and remains in his state of intellectual pursuit until he finds the reason. This surprising astonishment is the movement of human thought, prompted by curiosity to find solutions to many daily problems.

2- The existence of a problem: the individual feels confused when he encounters it and cannot solve it. The monkey Kohler tried to reach the banana at the top of the ceiling, but he could not. He thought of putting the two pieces of the stick together to become a long stick, and then climbed onto the chair holding the stick. To reach the banana and get it. The problem is the basis of finding a solution, without it, a person does not think as if he is sitting in heaven because everything around him is available and accessible and does not need to make an effort to think.

3- Decision making: Dilution are called to take many decisions in our daily life every hour, minute or day. marriage. The decision contains firmness and mental activity (thinking) that pushes the person to reach it, and it is not easy and important for organizing the life of the individual, and of course there are many factors that govern decision-making, and what is important in it is decision-making.

4- Curiosity: The love of curiosity and the discovery of the unknown and its going up and riding on it is one of the reasons that motivate thinking, and the English proverb says Curiosity killed the cat. For the mental development of man, through which much of our progress has been discovered, curiosity leads to thinking.

5- The need for invention and a sense of challenge: The proverb says, "Necess is the mother of invention." Humans have biological, cognitive, security and other needs. Therefore, man sharpened his mind and thinking to obtain these needs for his survival and development. Many inventions came as a result of filling a need or deficiency faced by man in His daily life prompted him to invent the car, the plane for transportation, the telephone for communication, the heater, the air conditioner, and others.

6- Human nature in itself: Man is a thinking animal by nature. Since his birth, he is born with a brain that is qualified to grow and think about all aspects of life, and he is constantly thinking about everything that happened in the past, is happening in the present, and will happen in the future.

7- Enjoyment: The thinker enjoys his idea, especially if it follows up with the ideas of others. Many people who read are those who feel the pleasure of reading and enjoy the ideas they read. Therefore, the pleasure of thinking is one of his motives. Some even describe the reading thinkers as sending books (Worm of books). The inventor, the innovator and the student, when he gets what he wants, feel pleasure and pleasure because it satisfies part of his needs. On the contrary, the student who fails feels frustrated.

4.5 Metacognitive thinking

Despite the wide range of perceptions and frameworks in contemporary learning theories, two issues emerged about the nature of learning. The first issue: Learning tends to be self-regulated learning, where effective students take responsibility for the methods they use in their learning. These methods are close to their inclinations and interests and they are familiar with them. As for the second issue, it includes beyond the given information, as students must actively use new knowledge to construct meaning, in other words, students must move from the role of the passive participant of information to the role of the active future, and to achieve this They have to think critically and effectively about the topics they are learning. Going beyond the information given means that students have to generate meaning, challenge expectations, make comparisons, or apply ideas in new contexts. Critical thinking and creative thinking help effective learning, because they both work on Help learners develop a deeper, more rational understanding of ideas and concepts.

4.6 What does good thinking look like in the classroom

Below is a set of examples of behaviours and thinking skills in the classroom that are concerned with teaching thinking, noting that each of the points listed below includes some kind of purposeful activity around the idea, concept or topic. The key to teaching thinking is to work on getting students to perform mental behaviour, as they tend in this classroom to do the following:
- Taking the time to carry out thought processes.
- Putting many skills, alternatives and options when making any decision.
- Looking at what is behind the obvious thing, in order to reach a more comprehensive concept of the subject.

- Challenge hypotheses and inquire about the validity of the given information.
- Finding problems and working to solve them, and surprising unfamiliar issues.
- Searching for alternative solutions, or working on generating new solutions.
- Attention to details in order to reach a deeper and more comprehensive understanding.
- Linking ideas to knowledge previously learned by students, whether inside or outside the school.
- Searching for reasons, and dialogue from multiple points of view.
- Demonstrate with examples when generating a specific point.
- Finding new and effective ways to apply knowledge.
- Expect different results.
- Claiming evidence.
- Anticipate difficulties and obstacles to thinking.
- Using graphs such as advanced organizers and concept maps.

4.7 Trends in teaching and learning to think

The tracker of the trends of teaching thinking sees a clear difference between theorists of this science, as some researchers tend to teach thinking through separate self-contained programs, while another group of researchers sees teaching thinking through the content of the prescribed subjects. Given the depth of the gap between these two trends, a third trend has emerged that is trying to reconcile them. The following is a presentation of these trends in teaching thinking.

The proponents of this trend refer to the teaching of thinking as an independent topic in itself, and the theorists of this trend report a number of benefits arising from that, as the independent lessons are more powerful in imparting the skill of thinking because of the possibility of being taught by the teacher in a systematic manner, as each Skill in thinking over the previous one, and it is certain that these programs have been used in many teaching-learning situations and thus have achieved the desired benefit through the refinement and development processes that took place during their actual application (Sternberg & Williams, 2004).

In the same context, Debono believes that learning to think as an independent course (a set of independent skills) is among the school subjects assigned to students as a promising investment in the educational field, as it will develop the mental skills of the learner, which will contribute to the development of individuals' performance in various educational tasks, and thus They enable them to face the various challenges imposed on them in a rapidly changing world where competition is intense, which makes them feel good mental health that works to adapt them to the environment they are dealing with, and thus unleash their creative energies (De bono, 1998).

Bayer (1990) sees that there are a set of conditions that should be taken into consideration in teaching thinking as an independent skill, including:

Learners' awareness of the activities and mental processes that they carry out.

Maintaining the focus of students' attention while learning.

- Training on the target skill sequentially.

Employing developmental feedback while learning thinking skills.

Learners talk about what they are doing.

- Students express, during the implementation of tasks and mental activities, the strategies they use (self-talk).

The trainers create sufficient opportunities to apply the learned skill in different situations.

There are programs that belong to this direction, including the Curt Program, the Master Thinking Program, the Philosophy Program for Children, and other programs.

The owners of this trend point out that thinking develops better through its use within the curricula for students. However, independent programs for teaching thinking are weak in that what the student learns in thinking lessons is likely not to be transferred to other study subjects, meaning that the transmission of the effect of Learning is weak, and therefore the independent program leads to a pattern of thinking specific to a specific situation through the lesson of thinking, and then it may be forgotten after the end of this lesson. A team of researchers found that religious people usually neglect the application of the learned mathematical thinking skills in classroom lessons in schools, as well as tend not to employ them in various aspects of life.

Also, teaching thinking in an independent way makes the relationship unclear with other variables, meaning that the student may not find the useful link between the thinking skill and the field of its application in various daily activities. Also, leaving school subjects and teaching thinking through special programs or through a separate subject will lead to students' anxiety, and then they will feel alienated from the educational method they are accustomed to through traditional school subjects. As for integration programs based on integrating thinking skills through content The study subjects, in which the relationship appears strong and clear, and thus the student is able to apply thinking skills in an easy and clear manner whenever he needs them. The theorists of this direction confirm that teaching thinking through school subjects enhances learning of mental processes in the prescribed subjects, so that the concepts of the subjects are based on (Sternbery & Williams, 2004).

The proponents of this team, headed by Frase, see an average opinion in teaching thinking, so that thinking is taught independently, taking an integrative curve with the content of the prescribed subjects, and he pointed out that thinking skills need to be learned directly before they are applied in the content of the subjects (Cotton, 2002). Teaching thinking takes place through the process of blending the two previous trends so that there are independent programs for thinking that enable students to see the relationships between the different steps in the thinking processes, and the coach or teacher has a clear role in this. In return, teachers teach thinking skills through the content of the subjects. In the same context, Sternberg and Williams (2004) indicate that, despite the lack of experience of teachers in teaching this type of thinking, it is assumed that teachers and trainees have sufficient experience to teach thinking skills through the subject, to be able to integrate these skills in teaching the content of the subjects they teach to students.

Thinking programs based on integration require a great effort from teachers and trainers, as this trend assumes that teachers train themselves on how to use the thinking skills that their students need, through conscious, effective and creative planning to teach these skills. The goal behind these efforts is to work on improving students' thinking skills, and then the teacher trains his students to take responsibility for integrating thinking skills into their daily practices, not only in the usual classroom sessions at school, but in the various aspects of the activities they do in their lives.

In the search for preference among the three different trends, experiments and research have confirmed the effectiveness of each of these trends in developing thinking, whether teaching thinking as an independent skill, or in the form of special programs to teach thinking, or by including thinking skills in different academic subjects. The researcher (Kitn) indicated that teaching thinking as an independent skill, or teaching thinking through different study subjects, leads to improving students' performance on different measures of creativity (Cotton, 2002).

Debono is considered one of the scholars who focus on teaching thinking skills in a direct way, and believes that thinking is a skill that can be taught and developed among learners, as he was able to design a set of programs through which thinking can be taught as a skill, and his famous program (Cort) is at the forefront of international programs It is used in teaching thinking in schools and universities in many countries of the world (De Bono, 1998).

4.8 electronic exam
The e-learning unit aims in the electronic exam to have a special centralization and a clear mechanism for the tests so that it is easy for the faculty member to book the exam date and conduct it, provide technical support to the member, and provide the member with the results of his students easily and safely, while maintaining the confidentiality of questions and results.

4.8.1 Steps to take an online exam
1- Coordination with the e-learning unit regarding the method of uploading the test to one of the available systems.
2- Contact the e-learning unit to book an exam appointment
3- Fill out the test form on the Moodle system, while adhering to the conditions for conducting the test.
4- The certified test result is delivered to the Graduate Studies Division.

4.8.2 General Features
• The possibility of controlling the difficulty level of the questions.
• Student, teacher and site administrator accounts are protected with an encrypted username and password.
• Only specific device numbers (IPs) are defined to enter the test.
• The ability to print students' answers after completing the exam
• Immediately showing the results after the exam with a printed report with the student's answers and the grade obtained.
• Reducing the chances of cheating in exams through the multiplicity of exam models among students, as well as the different order of questions and the order of answers.
• Faculty members were able to follow students' grades in an easier way, and thus reach the elements of weakness and strength in students' achievement of the scientific subject and then develop it better.
• In courses directed to large numbers of students, the use of the electronic exam saves the material costs of traditional exams in terms of papers and printing, as well as saving time and effort spent in correction work and the examination committee, as well as ensuring justice in the assessment.

4.8.3 General Instructions
1- The teacher should try and test the test before taking the test to avoid any mistake that might occur.
2- The teacher must coordinate with the e-learning unit to schedule his tests and find suitable labs for him if possible, at least one week before the test date.
3- Proctors are provided for the test by the teacher according to the number of students and the booked laboratories.
4- Verifying the student's attendance and identity, and logging in and out of the system is the responsibility of the teacher.
5- Any error that occurs during the preparation of the tests, such as choosing the wrong option or the preparation that leads to unacceptable results, is the responsibility of the teacher.
6- The responsibility of the e-learning unit during electronic exams is limited to providing technical support
7- The teacher must provide at least one hard copy of the test to be used in the event of an emergency.

5. Experimental method
The researcher relied on the college council's decision to adopt the exam and electronic correction for doctoral students and for all lessons after conducting experiments on a sample from outside doctoral students (Master's) to prepare the computer lab and using the electronic calculator centre at Al-Mustansiriya University to provide the college with the system for the electronic exam.
According to the ministry's directives to adopt the exam and electronic correction for postgraduate students for one subject for the year 2018-2019 and with the support of the presidency of the university, the necessity of conducting the exam and electronic correction, a meeting of the College Council was held in this regard and all the problems facing the establishment of this exam and correction were discussed, especially the modernization of the computer lab In cooperation with the calculator centre at Al-Mustansiriya University, a meeting of graduate studies professors was held to discuss the new method, the type of questions and the program used, and postgraduate students were directed to leave the previous traditional exams and approve the exam and electronic correction that depends on deep study and to achieve the answer from multiple possibilities to choose the appropriate solution for all The M.C.Q subjects he works in in international tests and the quality of these questions or options depends on the program used, and there are several programs to conduct this type of test as follows:
1- All statements are wrong.
2- All statements are true.
3- One of the statements is true.
4- Two of the statements are true.
For all subjects of the second course for PhD students.
The professors were assigned to adopt a question bank of no less than 250 questions for each subject, and that the questions should be from three clearly understood options.

Several experiments were conducted to ensure the success of the new experiment, depending on the provision of electrical current and the safety of devices and tools necessary for the success of the exam and electronic correction. All operations were completed with great success, praise be to God.

5.1 Post test
The electronic test was carried out on 3/6/2018-2019 for all compulsory and optional subjects. Statistical bag (SPSS) was used to extract the results.

6. Results
The results of the research shown in Table (1) revealed that there were statistically significant differences at the level (0.05) between the tribal and remote measurements and in favour of the dimensional measurement in measuring metacognitive thinking for graduate students (PhD) in the College of Physical Education and Sports Sciences / Al-Mustansiriya University For the academic year 2020-2021, where the arithmetic mean in the tribal measurement was (14.20) and the standard deviation (9.93), while in the dimensional measurement only, the arithmetic mean (18.80), standard deviation (3.00) and the calculated T value (7.37), which is greater than The tabular (T) value of (1.76), which indicates that there is a significant relationship between the tribal and remote measurements and in favour of the dimensional measurement for postgraduate (PhD) students (the research community), and this means that the examination and electronic correction program that was applied to (the research community)) has contributed positively to achieving a higher level in the systemic thinking test and this is a reflection on the educational attainment of postgraduate students (PhD) and for all the subjects prescribed in the (second) course, which are training science, psychology, English language, kinetic analysis, rehabilitation of injuries, teaching methods. Where the results of the examinations were positive for all students. What supports this is that contemporary education seeks to teach the individual how to learn and how to think, starting from focusing on the development of different skills for different types of thinking, perhaps the most important of which is thinking beyond what is the matter... in view of the rapid developments in the scientific, social, cultural and other systems.

Although we cannot ignore contemporary learning theories in cognitive achievement, modern and organized means of obtaining knowledge and learning have emerged: Learning tends to be self-regulated, where effective students take responsibility for the methods they used in their learning, Certainly, these methods are close to their inclinations and interests, and they are familiar with them. As for the second problem, it includes beyond the given information, as students must actively use the new knowledge to construct meaning. In other words, students must move from the role of the passive participant of information to the role of the active receiver. To achieve this, students must think critically and effectively about the topics that they learn. Going beyond the given information means that students have to generate meaning, challenge expectations, make comparisons, or apply ideas in new contexts. Critical thinking and creative thinking aid effective learning, because they help learners develop a deeper, more rational understanding of ideas. and concepts.

Table 1: It shows the arithmetic means, standard deviations, mean difference, difference of deviations, the calculated (t) value, and the significance of metacognitive thinking (deep).

Symbol	Error ratio	F A	F S	Calculated T value	dimensional		tribal		variable
					A	S	A	S	
spiritual	0.00	2.41	4.60	7.37	3.00	18.80	3.93	14.20	Metacognitive thinking

7. Conclusion

In the course of the research objective and its assumptions, and based on the statistical methods and analysis of the results reached by the researcher and within the limits of his research community and its characteristics, the researcher reached the following results:

The electronic exam and correction program for all subjects of the second course has a positive effect on metacognitive thinking.

The electronic exam helped develop the scientific level of the second course materials for postgraduate students (PhD).

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