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Philosophy of Metacognitive Thinking and Effective Learning

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Abstract

Cognitive learning theories seek to reduce the role of memorization and repetition and highlight the role of understanding using cognitive strategies. Cognitive learning views the human being as an active and effective person seeking knowledge and learning, and therefore he is positive and seeks to develop his information. And thinking is about it is about a series of mental activities that the brain performs when it is exposed to a stimulus that is received by it One or more of the five senses, which is an abstract concept that involves invisible and intangible activities, and what we observe or touch are in fact the products of the act of thinking, whether in written, spoken, kinetic, or visual form. The individual's cognitive structure and characteristics affect the strategies he uses. Studies have found that differences in students' achievement are mainly due to their characteristics and the strategies they use. Therefore, cognitive strategies can be considered outcomes of both students' cognitive construction and metacognitive skills. The current study deals with identifying the philosophy of metacognitive thinking skills and effective learning through the following axes: The first axis deals with metacognitive thinking skills and their strategies in terms of the concept, its forms, components, and strategies. Which helps to develop metacognitive thinking skills and its importance for the individual. The second axis dealt with effective learning and its relationship to metacognitive thinking skills in terms of the concept and objectives, which is to help the learner acquire information attitudes and skills, while developing strategies that enable him to solve problems inside and outside the classroom. Finally, the third axis dealt with the role of the teacher in developing metacognitive thinking skills and effective learning. Providing opportunities for learners by the teacher has an effective role in developing metacognitive thinking skills, and one of the indications that learners possess metacognitive thinking skills is their ability to make a list of the steps they will take in addition to their ability to determine the step they have reached in implementing the task. The position of this task in relation to the subsequent steps, and when they reach the solution to the problem, they can then explain their answers and the strategy that led them to the solution. The study made some recommendations to activate the role of effective learning and metacognitive thinking skills in helping students who are accustomed to traditional methods of learning to change and move from traditional learning to effective learning, as well as to encourage learners to do things and carry out activities and events on their own, which works to provide them with educational opportunities.

Keywords: *Philosophy of Metacognitive Thinking, Effective Learning*

INTRODUCTION

Learning is an essential element of education and is a starting point for studying and understanding the reality of the human mind. Most of human behavior results from learning, and there is no activity that is devoid of learning. It is a basic process in life that goes with it and extends throughout it. Human society has not progressed except thanks to learning. Cognitive learning theories seek to reduce the role of memorization and repetition and highlight the role of understanding through the use of cognitive strategies. Cognitive learning views the human being as an active and active person seeking knowledge and learning, and therefore he is positive and seeks to develop his information. And thinking is about it is about a series of mental activities that the brain performs when it is exposed to a stimulus that is received by it One or more of the five senses, which is an abstract concept that involves invisible and intangible activities, and what we observe or touch are in fact the products of the act of thinking, whether in written, spoken, kinetic, or visual form. The individual's cognitive structure and characteristics affect the strategies he uses. Studies have found that differences in students' achievement are mainly due to their characteristics and the strategies they use. Therefore, cognitive strategies can be considered outcomes of both students' cognitive construction and metacognitive skills. The main goal of cognitive learning is to help learners prepare information so that they could independently form meaningful learning strategies that ultimately affect their choices, organization, and reception of new information. As learning strategies are essential and necessary for any progress or cognitive development to the extent that metacognitive skills provoke, direct and influence the strategy. Cognitive.

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Metacognitive thinking skills grow and develop during the early school years. Primary school students could perform these skills, and the teacher may have a role in developing these skills by training learners to exchange ideas when performing tasks and by reviewing and evaluating their performance. The goal of effective learning is to help learners acquire a set of skills to develop strategies that enable them to solve the problems they face in their daily lives. Hence, we find the relationship that builds thinking skills beyond and Knowledge and effective learning. One of the goals of effective learning is the ability to encourage learners to participate in setting their goals and striving to achieve them, as well as increasing their abilities to understand knowledge and build meaning for it.

The First Axis: Metacognitive Thinking Skills and Strategies

The model of learning and teaching, or what is called the developmental curve, is linked to the world In the development of logical thinking, the concrete processes that extend from the age of seven to eleven years in which the child begins to develop ways of thinking that replace superstitious thinking and trial and error. For mental development to occur, the teacher must provide the learner with key experiences and activities. The idea of effective contribution to the formation of concepts stems from the use of verbs, and this is what will be referred to as effective learning in the second axis.

As for Bandura, he believes that metacognitive thinking is an evaluation of the learner's activities, which he performs himself and corrects his evaluations, and begins by choosing the appropriate strategies for him, which ultimately lead to solving the problems he faces (Al-Remay, 2003).

In this regard, Livingstone points out that metacognitive thinking is thinking that includes planning processes carried out by the individual for the task, followed by a process of monitoring and understanding the task, then followed by the evaluation process. As for (Mazzerlo, 1998), he believes that metacognitive thinking is an individual's awareness of the nature of his thinking while performing the tasks required of him. They are usually called thinking strategies, which include planning and organizing the individual for the work required of him. (Johnson, 1992) Thinking skills are considered to be cognitive processes and are the basis for the structure of thinking. They are used repeatedly to carry out tasks with the aim of reaching a cognitive vision. Therefore, thinking skills and creating opportunities can be considered extremely important for achieving educational goals (Jarwan, 1999).

Jarwan (1999) explains that thinking skills focus on how and why learners implement clear-cut thinking process skills and strategies, such as application, analysis, and reasoning. These strategies are used in solving problems in daily life and are also used in academic work.

Anderson points out that metacognitive thinking involves continuous monitoring during thinking processes. It is the individual's knowledge and awareness of thinking processes and strategies and his ability to evaluate, that is, how and why does the individual do what he does? From this metacognitive thinking includes effective monitoring, followed by organization and coordination of the metacognitive procedure, to achieve cognitive goals or judge whether the individual knows or does not know how to accomplish the task.

The importance of metacognitive thinking is that it enables the individual to make temporary judgments as well as prepare him to carry out other activities. It also helps the individual to notice the decisions that he makes, and thus makes the individual more aware of the tasks that he undertakes, and then the individual achieves a direction to generate questions that It takes place in his imagination when he searches for information, which helps him form cognitive maps before carrying out the task required of him. After that, the individual moves to another stage, which is evaluation Self-development is one of the important mental processes that ultimately raises the individual's achievement and improves his performance.

Researchers have differed in defining the components of metacognitive thinking skills. There is a trend that sees self-regulation as linked to task-related metacognitive strategies. Which the learner uses When he knows that he can control his actions, attitudes, and interests towards academic subjects. This skill consists of the following sub-skills:

- Commitment to perform a specific scientific mission This skill comes as a result of a decision taken by the learner to choose this task, because his decision comes as a result of his understanding of the educational situation he is going through.

- Positive trend towards Performing the scientific task: It expresses the learner's feeling that he is able to perform the task successfully, relying on his capabilities, or even on the help of others. In this case, he is determined to make the task he is undertaking successful.

- Controlling attention Requirements of the scientific task: It comes as a result of the learner's awareness that he must control the level and focus of his attention to all the requirements of the scientific task and link the requirements in order to perform it accurately (Dillon, 1988).

The second type is the skills of employing knowledge to perform the scientific task: it is the appropriate knowledge that the learner must use to perform the scientific task, and it is the knowledge that is at the learner's fingertips. This skill consists of the following sub-skills:

- Knowledge Revealed: It becomes clear when the learner knows what needs the task requires, and when the learner also knows the real information, or when the learner knows that there is something specific that he must do.

Procedural knowledge: It becomes clear when the learner is able to perform the scientific task, or when he is able to apply a specific strategy to complete the scientific task.

- Knowledge Conditionality: It becomes clear when the learner understands the reason behind using certain procedures, and this knowledge also becomes clear when the learner realizes the reason behind specifying certain conditions and conditions for performing the task, or the reason behind preferring certain procedures over others, or a particular strategy over another strategy.

The third type: skills Procedural control: The learner uses these skills when he performs the evaluation process, planning, or testing his progress to complete the scientific task he is undertaking. It includes three elements:

> Planning: According to this procedure, strategies are chosen to achieve the goals to be achieved This skill is used before and during the performance of the scientific task and is also used when the learner wants to choose the procedures and strategies necessary to perform the task.
>
> Monitoring: at this stage The learner uses this skill while performing the scientific task in order to demonstrate his progress towards successfully completing the scientific task.
>
> Pious: At this stage Ensure the learner's progress and there are some types Evaluation that is suitable for evaluating various metacognitive skills. One of the most appropriate methods for evaluating metacognition skills is the paper-and-pencil method, which is used to evaluate the sub-skills that make up metacognition. Teachers find this type of evaluation an important source for obtaining useful information in planning teaching...

From the above, Woolfolk sees three types of knowledge: declarative knowledge, which is the possession of information and facts. The second type is procedural knowledge, which means the steps associated with solving problems. **Becomes clear when The learner will be aulopiform the task scientific, Or when he is able nonapplications specific strategy for completing the scientific task. As for the third type, it is:** Knowledge Conditionality, which becomes clear when the learner realizes the reason behind using certain procedures, and this knowledge also becomes clear when the learner realizes the reason behind specifying certain circumstances and conditions for performing the task, or the reason behind preferring certain procedures over others, or a particular strategy over another strategy (AbuJado and Nofal, 2007).

Falafel, referred to in (Abu Rayash, 2007), explains that learning metacognitive thinking skills goes through the following four stages:

The first stage: It focuses on arousing the learner's motivation through the stimuli that are presented to him to provide him with opportunities to find the best way to accomplish the tasks required of him.

The second stage: directing the learner to what he will do. This is done in two ways, the first by having a model that the learner observes and the second based on his own experience.

The third stage: Developing the learner's ability to talk to himself, to enable the individual to understand cognitive processes and to develop his skill through practice, while transferring this skill to new situations.

The fourth stage: employing cognitive processes in an automated and effective manner.

The Second Axis: Effective Learning and Metacognitive Thinking Skills

The concept of effective learning is not a new idea because learning itself is an active process, but effective learning as a curve or approach has increased interest in it with the development of education theories (Zamel and Awad, 2008). The beginning of the twenty-first century is the clear emergence of effective education as one of the contemporary educational and psychological trends that has a positive impact on the education process inside and outside the classroom (Saadah, et al. 2006). The goal of effective learning is to help the learner acquire information attitudes and skills, while developing strategies that enable him to solve problems inside and outside the classroom. This is what was referred to in thinking skills strategies Metacognitive, effective learning has the most prominent features. Integrating the learner into learning activities with a focus on thinking that includes analysis, synthesis, evaluation, and developing skills Learners and lack of focus on transferring information while encouraging students to engage in reading, discussion, and writing activities.

For learning to be active and effective, learners must be engaged in reading, writing, discussing, solving a problem related to what they are learning, or in experimental work. More deeply, active learning is what requires learners to use higher-order thinking tasks in relation to what they are learning. Based on the above, effective learning has basic elements that are:

Direct work with objects: This means using objects during learning while involving the senses.

Meditation through practices: Work and practice alone are not enough. Rather, physical and mental activity must be combined in interaction with things.

Intrinsic motivation: Motivation leads the learner to explore and experiment to build new knowledge

Problem solving: Here the learner works to link his previous experience to the real problems he faces and thus arrives at the appropriate solution (Zamel and Awad 2008).

Effective learning includes some types of experience and dialogue. There are two types of dialogue. The first is dialogue with oneself, and this type occurs during the student's thinking when he asks himself. The second type includes dialogue with others, and this type occurs during discussions with students and the activities he carries out with others. As for experience, it is of two types: observational experience, which occurs by watching the event directly or indirectly, such as observing the teacher perform a task in front of the student or listening to professionals. The second type is experience through experience, and this is done through learning through activities such as engineering design, learning music, or criticizing writing.

From the above we see Self-regulation is linked to task-related metacognitive strategies It is used by the learner Which is one of the components of effective learning when the learner is aware that he can control his actions, attitudes, and interests towards academic subjects.

The most prominent benefits of effective learning are:

Learners' previous knowledge during effective learning constitutes evidence when learning new knowledge, and this is consistent with strategies for metacognitive thinking skills in that stimulating information

During effective learning, learners reach meaningful solutions to the problems they face because they link new knowledge or solutions to ideas and procedures that are familiar to them and not using other people's solutions. This is very close to self-regulation in learning metacognitive thinking skills (Abu Haddaf, 2005).

During effective learning, learners receive sufficient reinforcements regarding their understanding of new knowledge. 4 - The need to express an idea during effective learning forces learners to retrieve information from memory, perhaps from more than one topic, and then link it together, and this is like real situations in which the learner will use the knowledge.

Effective learning enhances learners' self-confidence and self-reliance.

Most learners prefer to be active during learning.

The task that the learner accomplishes himself, during effective learning, is of greater value than the task that others accomplish for him.

Effective learning helps change the student's image of the teacher as the only source of information, and this has an important implication in cognitive development related to understanding the nature of truth.

The third axis: The role of the teacher in developing metacognitive thinking skills and effective learning Providing opportunities for learners by the teacher has an effective role in developing metacognitive thinking skills. One of the signs that learners possess metacognitive thinking skills is their ability to draw up a list of the steps they will take, in addition to their ability to determine the step they have reached in implementing the task and their location. This task is for the subsequent steps, and when they reach the solution to the problem, they can then explain their answers and the strategy that led them to the solution. Costa and Kalik emphasize the importance of the teacher in developing metacognitive thinking through implementing a set of the following procedures:

The teacher puts Firstly, a learning strategy to be implemented.

The teacher maintains this strategy throughout the teaching and learning period.

The teacher reflects on the effectiveness of this strategy in terms of the positive changes it has brought about in students' behavior.

The teacher may provide a model of the strategy he intends to use, and the teacher must also give an opportunity to practice and explain its use (Abu Jado and Nofal, 2007). The role of the teacher is to support students' learning by enhancing their attempts to implement a strategy while giving them training for that. This temporary support must focus on the characteristics of the learners, the nature of the material, and the nature of the task. The teacher must withdraw support when he feels that the learners have become more understanding of the task they are performing, as well as the teacher links cognitive teaching to motivation and links assessment to learning outcomes. Learning outcomes vary depending on the type of knowledge that the teacher is interested in directing the teaching process towards developing among his students. Knowledge is the subject of understanding, and it is divided into two parts: knowledge that specializes in specific tasks and knowledge that relates to specific tasks. The first type of knowledge refers to academic and social fields, while the second type refers to the skills required for learning. These include focusing attention, problem-solving skills, and others. Developing this type of knowledge in students enables them to shift responsibility for their learning from the teacher to themselves. This means that if the teacher is interested in teaching skills related to knowledge that are related to specific tasks, and knowing metacognition, then he is helping students learn how to learn. Students who have high metacognition skills are distinguished in planning, dealing with information, and self-monitoring their learning. , recognizing their thinking errors, and evaluating their performance, and these skills may be necessary for learning in cooperative groups. In effective learning, as Zamel and Awad pointed out, citing (Gibran 2002), the teacher is supposed to be a guide to the learner, a facilitator of effective learning, and a good observer of the educational process. From this standpoint, the teacher must do the following:

Helping students who are accustomed to traditional methods of learning to change and move from traditional learning to effective learning.

Allocate sufficient time to examine the principles and concepts on which active learning depends and understand the learning theories that form the basis of active learning practice and that reveal the characteristics of learners.

Choose the strategy Teaching methods appropriate for effective learning.

Providing the material and human resources that help effective learning, including providing the appropriate time and place for this.

Encouraging learners to do things and carry out activities and events on their own, which provides them with educational opportunities.

Providing learners with developmental feedback individually to enable them to realize the positive impact of their active participation in learning.

Providing a friendly, safe environment and providing the learner with exciting experiences for effective learning.

Recommendations

Based on the findings of the current study, we present some of the following recommendations:

- Holding training courses for in-service teachers at different stages to train them on strategies through which metacognition skills can be developed according to their specialization subjects.

- Paying attention to using effective learning strategies and teaching effective skills and strategies for the learning process. The student's acquisition of the skill leads to meaningful learning, and over time the learner becomes more independent and less dependent on others.

- There is interest in strategies for developing metacognitive thinking skills, because their development requires direct guidance at the beginning until the student becomes able to perform these skills naturally without help from anyone.

- Focus on metacognitive skills and give them a place in the curricula and courses, so that these courses are mixed with educational strategies specifically designed to develop metacognitive skills, and present them in programs to prepare teachers, mentors, and school administration.

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