How People Learn: Cognitive Monitoring

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Abstract: Metacognition is the cognition of cognition. Metacognition is like an observer who is always watching the process of his or her learning, the cognitive process for any problems and errors. This article focuses on the study of metacognitive monitoring as one of the learning processes used to improve student learning. The article elaborates on how metacognitive learning is used to *acquire* knowledge through progressive learning, critiques the questionable practice of metacognitive learning, and provides a comparative analysis with other learning styles. An in-depth study of metacognition can help further correct and optimize our thinking styles and outcomes and is an essential advancement in our knowledge learning.

Keywords: Metacognition, Reflection, Learning

1. Introduction

Over the years, various scholars have shown interest in examining cognitive monitoring dominance as one of the cognitive strategies. Flavell defined cognitive monitoring as any activity that evaluates or regulates an individual's cognitions, including planning, checking, self-testing, assessing progress, and correcting errors [1]. Generally, various educators use the cognitive monitoring approach in enhancing learning since it plays a vital role in realizing cognitive endeavors. Equally, it is an instructional intervention, especially in receiving significant recognition in reading, communication, and memory literature. The approach uses prior knowledge to enhance the learning process among various people. It entails thinking about thinking based on its two components, cognitive knowledge and cognitive regulations. As an aspect of constructive learning theory, the cognitive monitoring approach enables learners to acquire knowledge and skills by relating old information with new information. As a result, it enhances one's awareness by internalizing and learning what they are taught. It assumes that an individual with metacognitive skills is often aware of how to realistically actualize the learning framework, memory, and tasks assigned. The primary roles of metacognitive monitoring include monitoring and controlling ongoing cognitive aspects. Its application has gone a notch higher to cover various fields, including psychology, such as developmental, personality, social, clinical, and forensic psychology. The present study examines metacognitive monitoring as one of the learning processes used to enhance students' learning.

2. Metacognitive Control Learning Practice

Metacognition learning practice involves developing executive functioning skills. Flavell opined that metacognition learning practice allows one to learn through active and conscious frameworks [1].

According to him, an individual learning through metacognition practice considers the best option for any assigned task. Equally, Flavell noted that not all people work the same while handling similar or different situations [1]. For example, what is suitable in a particular situation might not be vital in the following situation. As a result, he proposed that students need to have more cognitive skills to learn better. Besides, Flavell proposed two steps through which students can learn using metacognitive skills [1]. The first step stresses the importance of learners' ability to know about and applies cognitive skills. It is through recognition that they develop valuable and practical skills. The second step includes providing learners with various metacognition skills. The step requires students to collect and add to their metacognition skills. Miller observed that cognitive learning practice is vital in helping learners achieve their learning goals and objectives, including understanding written texts [2]. Likewise, Miller argued that metacognitive experience stimulates cognitive activity. While noting the importance of metacognitive learning practice, Miller observed that learners sometimes fail to recognize their cognitive skills; for example, when an educator reads a particular text but a student fails to understand it. Although such students might fail to recognize a particular communicated text, some impasses stimulate metacognitive processes as they struggle to rectify errors.

The Metacognition learning process is primarily based on knowledge and beliefs that various factors interact and act to stimulate learning. Nasir et al. observed that metacognition learning practices have three vital components: person, task, and strategy [3]. According to Flavell, "the person category encompasses everything that you could come to believe about the nature of yourself and other people as cognitive processors" [1]. Since it covers various people, it has some subcategories, including intra-individual differences, inter-individual differences, and universal cognition. Based on the subcategories mentioned above, one would learn through their beliefs; for example, once one believes that they can learn various things better, they start developing good listening and reading skills. Equally, once an individual perceives that one of their friends is more socially sensitive, they start developing and enhancing their socialist aspects. Examples of beliefs that stimulate learning in various individuals include beliefs about universal traits of cognition that young learners might develop their knowledge through gradual acquisition. Equally, individuals learn at different levels in their learning process since people have different understandings, such as attending, remembering, communicating, and problem-solving skills and abilities. For example, while several students would be subjected to learning similar skills, some may not understand the intended concept. The variance in their understanding levels defines the rate at which one acquires knowledge and skills. Skinner argued that "the growing individual will also learn that it can sometimes be difficult to determine how well you know or remember a social or nonsocial object of cognition, for example, whether you know it well enough to reach some social or nonsocial goal involving that object" [4]. Therefore, metacognitive learning facilitates learning through a gradual acquisition process.

3. Problematizing Metacognitive Learning Practice

While various scholars have often supported metacognition learning practice as one of the best learning processes, some studies have objected to its relevance in triggering learning. A study by Nasir et al. argued that the metacognitive learning approach stimulates limited metacognitive sensitivity and awareness [3]. Likewise, he argued that the metacognitive learning approach hardly makes use to develop active use of metacognition knowledge and strategies. As a result, this practice does not help facilitate learning, leaving learners struggling and striving for more knowledge. Nasir et al. believed that metacognition learning practice hinders rather than facilitates knowledge development as a limited performance accompanies it. Due to performance limitations among learners, this learning approach reduces instead of increases learners' psychological well-being. According to Norman, metacognition interferes with learners' task performance due to concurrent verbalization of learners 'experiences [5]. He demonstrated that this approach hinders performance

by noting that it uses experience-based to facilitate learning. Since the experience-based learning approach is highly intuitive, it discourages hard work, unlike other learning approaches. A series of empirical studies examining this approach established that it impairs performance. Past studies, including Schooler et al. and Yamada, argued that the metacognitive learning approach suffers from the negative impacts of verbalization on cognitive task performance among learners [5].

Furthermore, metacognitive learning practice entails negative self-evaluation that detracts learners from psychological well-being due to involving judgments and feelings. Educators using this approach often use metacognitive beliefs, a particular form of metacognitive knowledge to spur learning. Norm observed that "a person may—correctly or incorrectly—assume that they are less able/talented than other people when it comes to some cognitive ability" [5]. As a result, when this approach is used as a learning policy or practice, it lowers learners' self-esteem and self-efficacy. Since learning should help one improve performance, this approach hardly meets these aspects. It demotivates learners' from trying their best while learning as they rely on existing resources. Equally, learners could suffer or encounter the same problem since this approach conditions them to believe that some people are highly gifted and able than others. Norm argued that "metacognitive beliefs could also take the form of ideas about how one should ideally be or behave" [5]. For instance, a learner could mistakenly believe that students should learn all subjects and master them. Therefore, this approach is highly subjective to the extent that it might mislead learners.

4. Research Question

Besides using the metacognitive learning approach as the best learning practice, can other approaches like behaviorism, constructivism, humanism, and connectivism learning theories also be used in enhancing/promoting learning? Besides, can other learning theories like transformative, social, and experiential learning theories be used in promoting learning at various educational levels?

5. Alternative Learning Approaches

5.1. Behaviorism Learning Theory

Behaviorism learning theory is another vital learning approach apart from the metacognitive learning approach. Unlike the metacognitive learning approach, it is based on one's behaviors, implying that it is highly concerned with students' interactions with external environments. According to Bond et al., behavioral learning theory believes that students' learning processes are influenced by their behaviors, with external forces determining their learning abilities [6]. The approach hardly considers internal factors (intrinsic factors) as aspects that influence one's learning. Since this theory has been in practice as early as the 19th century, it has received significant recognition amongst various psychologists as one of the best learning approaches. Bond et al. observed that the behavioral learning framework is triggered by one's psychological well-being, which allows one to observe and identify new things in the environment [6]. They correlated this learning approach to positive reinforcement and classical conditioning. However, such approaches had been identified by early scholars like Pavlov, who used dog experiments to observe how behavioral modifications can trigger learning. Pavlov claimed that behavioral modification triggers learning once an individual is motivated by rewarding them. Their findings made this approach one of the best that educators can adapt and apply in the classroom. For example, the approach can be used as a positive reinforcement to aid learning among students, ensuring they master concepts properly. Teaching students based on the positive reinforcement approach is vital in helping learners retain information and move forward to improve their academic life.

5.2. Constructivism Learning Approach

Constructivism learning theory is another vital learning approach. Lavoie et al. argued that constructivism learning theory entails helping students create their learning process based on previous experiences. According to them, learning through past experiences allow learners to apply aspects they were taught in the past lesson, adding them to previous knowledge and experience [7]. As a result, learning through experience is essential in creating the reality of what a learner wants to achieve academically. According to Locklear, the constructivism learning theory is highly concerned with helping learners learn through the active process that is common among individuals [8]. As a result, this learning approach is essential for educators. For example, educators often use this approach to help learners understand that they must apply their past experiences to daily learning of new aspects. Unlike other approaches, when this approach is used to facilitate learning, educators act as a guide to learners, helping them create a new learning and understanding environment. The constructivist learning approach is essential since it helps learners create new processes and reality defined by their past. Therefore, this approach is vital in creating and applying experience in learning new aspects.

5.3. Humanism Learning Theory

Humanism learning theory works closely alongside the constructivism learning approach based on learning through past experiences. However, unlike the constructivist learning approach, it is highly dependent on the self-actualization idea [9]. According to Makransky and Petersen, human functions are based on hierarchical systems of needs [9]. Based on Maslow's model, they identified self-actualization as the topmost need, which is satisfied within a brief moment. At this level, people feel they have satisfied all their needs and is hardly concerned with other needs. As a result, they concluded that every learner often strives for this, and as they strive, learning environments move forward to meet their needs or move away to bar them from meeting their needs. It implies that this approach is vital among educators. For example, educators can use this learning approach to create a learning environment that facilitates learning among students, ensuring learners can get closer to self-actualization. When teachers consider the humanism learning approach as one of the best learning practices, the approach is used to help learners fulfill their emotional and physical needs. Once learners have achieved or realized their physical and emotional needs, they establish a safe and comfortable environment that facilitates learners. Equally, such environments can support learning since they are occasioned with plenty of resources needed to improve the quality of learning.

5.4. Connectivism Learning Theory

Unlike other learning theories, this new theory has received limited recognition among scholars. However, it also stands as one of the best learning approaches as it focuses on how to help learners grow their learning by brokering some forms of connections. The approach's forms of connections can be observed when the approach is used to connect roles and obligations [2]. For example, this approach can connect hobbies, goals, and people with factors influencing learning. Equally, the approach is applicable in the classroom, especially when educators use it to help learners connect things exciting them and help them learn new things in their environments. For example, the approach can be used alongside digital media to make a good and positive connection, improving the overall learning process. As a result, the approach is important because it creates connections and relationships with learners, motivating them to learn new aspects of the environment.

5.5. Transformative Learning Theory

While this study has identified various alternative learning approaches, such identified approaches concentrate on facilitating learning among young learners. As a result, transformative learning theory is a vital learning approach that facilitates learning among adults and young adults. According to its founder, Jack Mezirow, "transformative learning theory focuses on the idea that learners can adjust their thinking based on new information" (as cited in Locklear, A. K. [8]. While researching learning among adults, Jack Mezirow discovered transformative learning as one of the best learning approaches that facilitate learning among adults. At the initial stages of his study, he established that adults hardly use their old understanding in addressing new situations. As a result, he concluded that older adults would best address emerging issues within their environment by developing new perspectives, allowing them to acquire a new understanding of environmental shifts. Mezirow also believed that "students had important teaching and learning opportunities connected to their past experiences and that critical reflection and review could lead to a transformation of their understanding" [8]. He demonstrated that this learning approach is highly important in improving the quality of learning among adult learners. However, it is not a vital learning approach for children as young learners hardly have similar transformative learning experiences.

5.6. Social Learning Theory

Generally, teachers encounter students of different calibers, including disruptive students who tend to interfere with regular learning sessions. Troublesome students often disrupt classroom learning and also cause trouble. However, social learning theory is the best approach to handle such students. Horsburgh and Ippolito observed that social learning theory is concerned with helping young learners acquire new concepts by observing what their fellows do [10].

For instance, students might observe a classmate asking for a treat and getting it, aspiring to get a similar treatment. Equally, they may observe classmates narrating something new they were taught, using the same approach to learn new things from fellow students. Albert Bandura founded this theory while experimenting Bobo doll in the 1960s. Based on the Bobo doll experiment, he observed children learning processes and behaviors, observing that young learners tend to act aggressively with a doll-like toy. The experiment identified four vital social learning theory elements: attention, retention, reproduction, and motivation. Educators can use these elements to facilitate learning; for example, an educator can use these elements as powerful learning tools that guide students to be more aggressive and active in their learning processes.

5.7. Experiential Learning Theory

The experiential learning approach is vital as it concentrates on improving one learning abilities. The approach encourages learners to learn based on past experiences, helping them retain information and recall facts. David Kolb identified this learning approach in 1984 [11]. However, the motive to develop this learning approach originated from past scholars like John Dewey, Kurt Lewin, and Jean Piaget. As a result, he developed this study into various stages to help learners mast concepts acquired in the learning process. The experiential learning theory stages include concrete learning, reflective observation, abstract conceptualization, and active experiential. The first two are vital in grasping various past experiences, while the last two stages transform acquired experiences.

6. Conclusion

While various scholars have identified this approach to have some limitations, it remains one of the best learning practices. Metacognitive learning practice uses an experience-based, highly intuitive

approach, making the overall learning process simple. Equally, as it simplifies learning, it applies to various learning levels, including elementary, high-schools, and college levels. Besides, the approach facilitates learning through various approaches, including skills development which is vital in improving knowledge acquisition. However, despite the identified advantages, it might impair learning due to low performance occasioned by its processes. For example, since it simplifies learning, learners hardly put more effort into knowledge acquisition. For example, once learners are used to simple methods while learning, they are likely to develop it as a habit. Therefore, it might discourage learners from performing some tasks in the future.

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