Tikrit University

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Subject : Learning Strategies / M.A. studies

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Factors effective cognitive strategies

The factor effects on cognitive strategies

Several factors can influence the effectiveness and utilization of cognitive strategies in learning. Here are some key factors that can impact cognitive strategies:

1.Prior knowledge: The existing knowledge and understanding that learners possess about a particular topic or subject can influence the selection and deployment of cognitive strategies. Prior knowledge provides a foundation for making connections, organizing information, and applying appropriate cognitive strategies effectively.(Pressley, M., & Harris, K. R. (2006).

2.Motivation and interest: Learners' motivation and interest in the subject matter can significantly impact their engagement with cognitive strategies. When learners are motivated and interested, they are more likely to employ cognitive strategies actively and persist in their learning efforts. Pintrich, P. R., & Schunk, D. H. (2002)

3.Metacognitive awareness: Metacognitive awareness, the understanding and regulation of one's own cognitive processes, plays a crucial role in the effective use of cognitive strategies. Learners who are aware of their thinking processes and have the ability to reflect on their learning can utilize cognitive strategies more strategically and adapt them to suit their needs.(Flavell, J. H. (1979)

4.Instruction and guidance: The quality of instruction and guidance provided by teachers or learning materials can influence the utilization of cognitive strategies. Explicit instruction and modeling of cognitive strategies, along with feedback and support, can help learners understand and apply these strategies more effectively. (Pressley, M., et al. (1992).

5.Learning environment: The learning environment, including the classroom setting, resources, and social interactions, can impact the use of cognitive strategies. A supportive and collaborative learning environment that encourages active participation, discussion, and sharing of ideas can facilitate the adoption and application of cognitive strategies. (Woolfolk, A. E. (2014)

6.Individual differences: Learners have different cognitive styles,

preferences, and abilities. Factors such as working memory capacity, attention span, and learning preferences can influence the selection and utilization of cognitive strategies. It is important to consider individual differences and provide opportunities for learners to adapt cognitive strategies to their own strengths and needs. (Pashler, H., et al. (2008)

7.Task characteristics: The nature of the learning tasks and activities can affect the choice and effectiveness of cognitive strategies. Different tasks may require different cognitive strategies, such as summarizing, note-taking, or problem-solving techniques. Aligning the cognitive strategies with the specific task requirements can optimize learning outcomes. (Dunlosky, J., et al. (2013)

The aspects of cognitive strategies

Cognitive learning strategies refer to various techniques and approaches that enhance the process of acquiring knowledge, understanding, and problem-solving abilities. These strategies are focused on engaging and optimizing cognitive processes such as attention, perception, memory, and thinking to facilitate effective learning. Here are some key aspects of cognitive learning strategies :

1.Metacognition: Metacognition is the ability to monitor and regulate one's own cognitive processes. It involves being aware of one's thinking, understanding how to approach a task, and evaluating one's progress. Metacognitive strategies include setting goals, planning, self-monitoring, reflection, and self-assessment.

2.Organization and Chunking: Cognitive strategies emphasize the organization of information into meaningful units or chunks. Chunking involves grouping related information together, which facilitates easier processing and recall. Techniques such as creating outlines, concept maps, or mnemonic devices help in organizing and structuring information effectively.

3.Elaboration: Elaboration involves expanding and connecting new information with existing knowledge and experiences. It helps in deepening understanding and improving retention. Strategies like summarizing, paraphrasing, asking questions, making connections, and

providing examples are employed to elaborate on the material being learned.

4.Visualization: Visualization strategies involve creating mental images or visual representations of information. This technique enhances comprehension and memory recall. Visualizing concepts, processes, or relationships can aid in understanding complex ideas and making them more memorable.

5.Critical Thinking: Cognitive learning strategies promote the development of critical thinking skills. This involves analyzing information, evaluating evidence, making reasoned judgments, and solving problems. Techniques like evaluating arguments, identifying biases, considering alternative perspectives, and applying logical reasoning are employed to foster critical thinking abilities.

6.Retrieval Practice: Retrieval practice involves actively recalling information from memory rather than passively reviewing it. This strategy strengthens memory retention and promotes long-term learning. Techniques like quizzes, flashcards, and practice tests encourage the retrieval of information, thereby reinforcing learning.

7.Metacognitive Monitoring: Metacognitive monitoring involves being aware of one's own learning processes and making adjustments accordingly. Regularly assessing one's comprehension, progress, and learning strategies helps identify areas of improvement and adapt study techniques accordingly.

8.Scaffolding: Scaffolding refers to providing temporary support or guidance to learners as they gradually develop their understanding and skills. It involves breaking down complex tasks into manageable steps and gradually reducing assistance as learners gain proficiency.

Generally speaking, it can be said that there are two widespread ways of classifying language learning strategies: by skills and by functions. In the first one, strategies are organized depending on their role within the four macro-skills (oral and written comprehension and expression) and on their application in these four areas: vocabulary, grammatical and translation strategies; see Cohen, Oxford and Chi (2002), and Cohen and Oxford

(2002). The second kind of classification organizes strategies according to their function. Under this line, one of the first and most significant classifications related to cognition came from Rubin (1989), who organized it according to the stages he considered necessary in the information processing for cognitive learning: getting process (clarification/verification, guessing/inductive, deductive, and resourcing strategies), storing process (memorization strategies) and retrieval, and using process (practice, monitoring and social strategies). Oxford (1990) and O'Malley and Chamot (1990) took some contributions from the works of Rubin (1975, 1981, 1989) regarding this subject, among others, and made progress in theoretical proposals and classifications. Rose (2012) pointed out that the more widespread classification in research was the classification system proposed by Oxford (1990), who organized strategies into two large groups: direct strategies (those directly involved in manipulating the language and in activating mental processes) and indirect strategies (those which frame and play a supportive role in learning.) These groups include six categories: memory strategies (which relate to how students remember language), cognitive strategies (which relate to how students acquire knowledge about language), compensation strategies, metacognitive strategies, affective strategies and social strategies. On the other hand, O'Malley and Chamot (1990) consider three categories: metacognitive, cognitive and socio-affective, with great similarities to the previous classification .

In spite of their relevant contributions in the field of language learning, these classifications have faced criticism (Dörnyei, 2005; Rose, 2012). This is mainly due to a questionable theoretical basis or to the lack of specificity of the definitions involved. In fact, Rose (2012) summarized that "language learning strategy classification systems have been subject to growing criticism regarding definitional fuzziness and invalid research instruments" (p. 94.)

cognitive language learning strategies with a more grounded basis. For this purpose, contributions of previous models, concepts and studies that provide a better perspective of information processing have been

examined. Understanding how information flows during processing and the relationships among the involved components is a key factor to the objectives of this study.

WHAT ARE COGNITIVE AND LEARNING STRATEGIES?

Cognitive and learning strategies are those procedures that a student uses to succeed with a task that would be difficult without special effort. Strategies can be external aids, like a calculator to help with difficult math problems, a clock and a calendar to help keep track of time, lists to remember things to do, a graphic organizer for complex tasks like writing a story, and the like. Or they can be communication strategies, like asking for help. Or they can be internal mental procedures, like repeating information in ones head or creating associations in order to make the information more memorable. Simple school examples include taking notes during a lecture, asking for clarification of complex material in a text, highlighting important information in a text as one reads, and creating an outline before beginning to write an essay .

Everybody uses strategies when tasks become difficult. For example, most readers, not just those with poor reading comprehension, acquire habits of doing something strategic before, during and after reading a text : Before reading a text: Examples of strategies: previewing the text for orientation to its content; presetting with questions that need to be answered; calling to mind what one already knows about the topic During reading: Examples of strategies: periodically trying to summarize; highlighting important parts of the text; dealing with comprehension breakdowns; taking notes; looking up new wordsAfter reading: Examples of strategies: summarizing the text, reacting to the content, taking notesMost competent readers engage in some such activities without thinking about it on those occasions when comprehension is important. These procedures are habitual, based on years of personal experience that have convinced readers that if they do not do something special when reading lengthy texts, they will probably not understand or remember much of what they read Preschoolers use simple strategies, largely within the context of physical tasks, like seeking help while cutting with scissors, putting their

things away in their cubby so they can find them, and the like. School-age children are expected to be strategic in relation to their abstract cognitive and learning tasks. For example, they are taught to check their work for errors before handing it in; to take organized notes during lectures, and to use systematic study procedures .Being a strategic thinker and learner presupposes that the student has a reasonable understanding of her own abilities so that she can make judgments about what tasks are easy and what tasks are difficult therefore requiring special effort (self-awareness) has goals that she wants to accomplish (goal setting)knows that plans must be made to accomplish goals and can make plans) (planning can initiate strategic behavior) (initiation can inhibit impulses that are inconsistent with goal-directed behavior inhibition)can pay attention to how she is doing (self-monitoring) and evaluate performance in relation to the goals (self-evaluation) can flexibly revise plans and change strategies in response to feedback (strategic behavior)These are the core components of self-regulation or executive functioning; therefore all of the procedures used to promote self-regulation are important in helping students to become more strategic thinkers and learners