MAIN STAGES OF IMPROVING COGNITIVE COMPETENCE

Khalilova Aziza Erkindjonovna
master of KIMYO International University of Tashkent,
Samarkand branch.

ABSTRACT

Improving cognitive competence refers to enhancing an individual's ability to think, reason, learn, and solve problems more effectively. Cognitive competence encompasses a broad range of intellectual skills such as memory, attention, problem-solving, decision-making, and learning. This improvement can be a lifelong process that takes place in various stages, from early childhood development to adulthood.

Keywords: cognitive competences, primary education, critical thinking, problem-solving, teaching strategies.

The main stages of improving cognitive competence can be divided into the following categories:

1. Early Childhood Development (0–5 Years)

The development of cognitive competence starts from birth and continues rapidly during early childhood. Cognitive abilities during this stage are highly influenced by sensory experiences and environmental stimuli. Key aspects include:

• Sensory-Motor Development: According to Jean Piaget's theory of cognitive development, infants and toddlers engage with the world through their senses and motor actions. In this phase, children develop object permanence, the ability to understand that objects continue to exist even when they are not visible. This forms the foundation for more complex cognitive tasks.

• Language Acquisition: As children interact with their environment, they start to acquire language skills, which are essential for cognitive development. Language acquisition enhances their ability to think abstractly and solve problems. (Piaget, J.1952).

2. Elementary and Middle School Years (6–12 Years)

Cognitive competence further develops during the elementary and middle school years. This is when children become capable of more abstract thinking, problem-solving, and logical reasoning. Key developments include:

• Concrete Operational Stage: As Piaget described, children in this stage start to understand concrete events and solve problems logically. They develop the ability to classify objects, understand cause-and-effect relationships, and solve math problems mentally.

• Memory and Learning Strategies: At this stage, children start to develop

strategies for remembering information, such as rehearsal, chunking, and using mnemonic devices. These strategies improve their learning abilities. (Siegler, R. S. 2005).

3. Adolescence (13–18 Years)

Adolescence marks a period of significant cognitive growth. In this stage, the brain undergoes restructuring, and individuals become capable of more complex, abstract, and hypothetical thinking. Key developments include:

• Formal Operational Stage: Piaget's formal operational stage is characterized by the ability to think about abstract concepts and hypothetical situations. Adolescents begin to use deductive reasoning, form hypotheses, and consider multiple perspectives simultaneously.

• Metacognition: Adolescents start to develop metacognitive abilities, which involve being aware of their thinking processes. They learn to monitor their problem-solving approaches and adjust strategies based on feedback, leading to more efficient learning and thinking.

• Cognitive Self-Regulation: At this stage, adolescents develop better control over their attention, impulse control, and problem-solving approaches. These are essential skills for managing academic and social challenges. (Vygotsky, L. S. 1978).

4. Young Adulthood (19–35 Years)

During young adulthood, cognitive competence stabilizes and reaches its peak. Cognitive processes like memory, reasoning, and problem-solving abilities remain strong, although continuous improvement is possible. Key developments include:

• Crystallized Intelligence: This refers to the accumulation of knowledge and expertise gained over time. Young adults often refine their skills and can solve problems more efficiently using knowledge from prior experiences.

• Fluid Intelligence: While fluid intelligence, the ability to solve novel problems quickly, may decline slightly with age, cognitive competence remains highly adaptable. Young adults often engage in complex cognitive tasks like strategic planning and critical thinking in both academic and professional settings. (Baltes, P. B. 2000).

5. Middle Adulthood (36–65 Years)

Cognitive competence in middle adulthood may involve both challenges and opportunities. While some cognitive functions such as processing speed may decline, other abilities improve. Key developments include:

• Mature Problem-Solving: Individuals in middle adulthood often develop expertise in specific areas, leading to more efficient decision-making and problem-solving. They rely on accumulated experience and knowledge to navigate complex situations. (Schaie, K. W. 2005).

• Fluid Intelligence Decline: Some studies indicate that fluid intelligence (the ability to solve novel problems) may show slight declines in middle adulthood. However, individuals may compensate for this decline by leveraging their experience and crystallized intelligence.

6. Late Adulthood (65+ Years)

Late adulthood involves changes in cognitive competence due to age-related decline, but many aspects of cognitive ability remain intact. Key developments include:

• Cognitive Aging: In late adulthood, cognitive decline is often linked to slower processing speed, memory lapses, and reduced fluid intelligence. However, crystallized intelligence and practical problem-solving abilities often remain stable or even improve with age.

• Maintaining Cognitive Health: Cognitive competence can be maintained or improved with strategies like lifelong learning, physical activity, and social engagement. (Salthouse, T. A. 2009)

Programs focusing on cognitive training can help reduce cognitive decline and promote mental fitness.

7. Lifelong Learning and Cognitive Rehabilitation

Throughout life, cognitive competence can continue to be developed. Cognitive training, mental exercises, and continued learning can support the maintenance or enhancement of cognitive abilities. Key strategies include:

• Neuroplasticity: The brain's ability to reorganize and form new neural connections can help improve cognitive function at any age. Activities like reading, playing instruments, and engaging in puzzles or games can stimulate brain activity.

• Cognitive Rehabilitation: For individuals experiencing cognitive decline, cognitive rehabilitation programs can improve memory, attention, and executive function, even in older age.

CONCLUSION

Improving cognitive competence is a dynamic and continuous process that spans across the lifespan. From the rapid development of cognitive skills in early childhood to the maintenance of cognitive function in late adulthood, there are numerous stages at which cognitive competence can be enhanced. With a focus on lifelong learning, neuroplasticity, and cognitive rehabilitation, individuals can optimize their cognitive abilities throughout their lives.

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