



COGNITIVE ABILITY OF SCHOOL STUDENTS

Education

**K. M. Basil
Gagarin**

Ph.D. Scholar, Department of Education, Manonmaniam Sundaranar University,
Tirunelveli – 627 012.

**Dr. K. R.
Selvakumar**

Assistant Professor, Department of Education (DD &CE), Manonmaniam Sundaranar
University, Tirunelveli – 627 012. Corresponding Author

ABSTRACT

Cognition is a term referring to the mental processes involved in gaining knowledge and comprehension. These processes include thinking, knowing, remembering, judging and problem-solving. These are higher-level functions of the brain and encompass language, imagination, perception, and planning. The Cognitive science and neuroscience are presently engaged in understanding how brain processes, behavior and cognitively interact. Cognitive neuroscience is actively involved in investigating how human beings are active and in the process of thinking. By using their brains to achieve their goals and fulfill their needs in the context of complex and changing environments. The specific aspects of basic sensory and motor cognition as well as higher level processes of face and word recognition as well as thought, all considered mind-based, are supported by brain regions that are highly and uniquely specialized for those processes, suggesting that the mind-brain interaction occurs through highly specialized unique brain mechanisms are called as Cognitive abilities.

KEYWORDS

Cognitive ability, School students.

INTRODUCTION

Cognitive abilities in students involve the progressive building of learning skills, such as attention, memory and thinking. These skills enable the students to process sensory information and eventually learn to evaluate, analyze, remember, make comparisons and understand cause and effect. Cognitive skills are the core skills of the brain which was used to think, read, learn, remember, reason, and pay attention. Each cognitive skill plays an important part in processing new information. The core notion of cognitive development is that students develop skills and abilities in more or less predictable sequences. While not all students develop at the same rate, they do all pass through common phases of cognitive, physical, and social development.

ORIGIN OF COGNITION

The ancient Greek philosopher Plato studied the mind of people by identifying basic principles buried deep inside them and then using rational thought to create knowledge. This viewpoint was later advocated by philosophers such as Rene Descartes and linguist Noam Chomsky. This approach to cognition is referred as rationalism. Aristotle also believed that people acquire their knowledge through their observations of the world around them. Later thinkers including John Locke and B.F. Skinner also advocated this point of view, which is often referred to as empiricism. During the earliest days of psychology and for the first half of the twentieth-century, psychology was largely dominated by psychoanalysis, behaviorism, and humanism. The field of psychology concerned with the study of cognition is known as cognitive psychology. One of the earliest definitions of cognition was presented in the first textbook on cognitive psychology published in 1967. According to Neisser, cognition is "those processes by which the sensory input is transformed, reduced, elaborated, stored, recovered, and used."

COGNITIVE AND NON COGNITIVE ABILITIES

Cognitive skills identify how the learners are learning their subjects at their best level. Tests of cognitive skills identify how the people efficiently understand new information and recall previously learned information. In contrast, tests of academic skills are a test of what the students know and are more similar to the achievement tests of the child takes in school. Most schools never test the cognitive skills of their students. A good understanding of one's cognitive strengths and needs can be the key to more efficient learning. Cognitive abilities involve conscious intellectual effort, such as thinking, reasoning, or remembering, but the non cognitive abilities or soft skills are related to motivation, integrity, and interpersonal interaction. They may also involve intellect, but more indirectly and less consciously than cognitive skills. Soft skills are associated with an individual's personality, temperament, and attitudes.

COGNITIVE ABILITIES

Cognitive abilities are brain-based skills which are needed to carry out any task from the simplest to the most complex. Their mechanisms comprise of how we learn, remember, problem-solve, and pay attention, rather than with any actual knowledge. For example, answering the telephone call involves perception (hearing the ring tone), decision taking (answering or not), motor skill (lifting the receiver), language skills (talking and understanding language), social skills (interpreting tone of voice and interacting properly with another human being). Cognitive abilities or skills are supported by specific neural networks.

FORMING SENSORY INPUT

The sensations taken around the world is the information via seeing, hearing, tasting and smelling all these are transformed into signals for the easy understanding of brain. The perceptual process allows taking in sensory information and converting it into a signal that the brain can understand and act upon. The brain sends out signals to muscle groups then only the response taking place.

REDUCING SENSORY INFORMATION

The world is full of endless amount of sensory experiences. To make meaning out of all this incoming information, it is important for the brain to be able to reduce the experience of the world down to the fundamentals. The experience of the event is reduced down to the critical concepts and ideas for easy remembrance. Instead of remembering every detail just focuses the attention and

STORING AND RECOVERING INFORMATION

Memory is a major topic of interest in the field of cognitive psychology. People often think of memory as being much like a video camera, carefully recording and cataloging life events and storing them away for later recall. Short-term memory is surprisingly brief, typically lasting just 20 to 30 seconds. Long-term memory can be surprisingly stable and enduring, on the other hand, with memories lasting years and even decades. Memory can also be surprisingly fragile and fallible.

USING INFORMATION

Cognition involves not only the things that go on inside our heads but also how these thoughts and mental processes influence our actions. By giving attention to the world around us, memories of past events, understanding of language, judgments about how the world works, and abilities to solve problems all contribute to the way of how the people are behaving and interact with their surrounding environment.

THE TEN CORE COGNITIVE ABILITIES

- i. Visual motor speed (how quickly eyes and hands work together)
- ii. Processing speed (how quickly respond to new information)

- iii. Attention (ability to sustain focus, even for tasks that might not find interesting)
- iv. Working memory (ability to mentally juggle multiple bits of information for a short time)
- v. Flexible thinking (ability to take feedback and adapt to new instructions)
- vi. Verbal reasoning (ability to interpret language-based tasks)
- vii. Abstract reasoning (ability to interpret non-verbal information, including numbers, shapes and patterns)
- viii. Spatial perception (ability to understand how objects relate in space)
- ix. Verbal memory (ability to remember and recall language-based information over a period of time)
- x. Visual memory (ability to remember and recall objects and pictures over a period of time)

EIGHT HABITS TO DEVELOP COGNITIVE ABILITIES IN STUDENTS

- i. Physical exercise
- ii. Learning by doing
- iii. Curiosity and Creativity
- iv. Social Connections
- v. Meditation
- vi. Brain-storming techniques
- vii. Taking good sleep
- viii. Reduce Stress

CONCLUSION

The main core of the learning is making it more purposeful, meaningful, and based on the student abilities, development, and interests. Skills are typical for student of different ages, what is appropriate for an individual and their familial and community values are more important for accessing their cognitive abilities. The knowledge about the skill development will help them to make daily decisions about the learning experiences offered in the regular school curriculum. Thinking about the experiences and activities include the right kind of goals and instruction for a student. Student with weak skills might benefit from instruction before they start a work.

REFERENCE

1. Neisser, U. (1967). Cognitive Psychology. Englewood Cliffs: Prentice-Hall.
2. Revlin, R. (2013). Cognition: Theory and Practice. New York: Worth Publishers.
3. <http://www.learningrx.com/brain-training-101/what-are-cognitive-skills/>
4. <http://mrrc.isr.umich.edu/publications/papers/pdf/wp298.pdf>
5. https://www.ratswd.de/download/RatSWD_WP_2008/RatSWD_WP_49.pdf