Course: Teaching Strategies at Elementary Level (623)
Semester: Spring, 2022

ASSIGNMENT No. 2

Q.1 What is the difference between cognition and metacognition? Discuss in detail the elements of metacognition.

Since the study of cognition and metacognition is an interesting topic in a number of disciplines, one can have an interest to find out the difference between cognition and metacognition. However, for most people these two are very confusing. This is because the line of demarcation between the cognition and metacognition is often difficult to identify since these two tend to overlap. Basically, cognition deals with mental processes such as memory, learning, problem-solving, attention and decision making. However, the metacognition deals with an individual's higher order cognitive processes , where a person has active control over his cognition. The aim of this article is to present a basic understanding of cognition and metacognition while emphasizing the difference between cognition and metacognition.

Cognition can simply be defined as all mental processes and abilities in which people engage on a daily basis such as memory, learning, problem-solving, evaluation, reasoning and decision making. Cognition helps to generate new knowledge through mental processes and also helps to use the knowledge that people have in daily life. Educational psychologists were especially interested in studying the cognitive processes of individuals through the growth and development of children. **Jean Piaget** is specifically important in this sphere since he presented stages of cognitive development of children from the birth to adulthood. They are sensorimotor stage (birth – 2 years), pre-operational stage (2 -7 years), concrete operational stage (7 – 11 years), and finally formal operational stage (adolescence – adulthood). Metacognition is often defined as thinking about thinking. It allows us to complete a given task well through planning, monitoring, evaluating and comprehending. This means while cognitive processes allow normal functioning of individuals, metacognition takes it a level higher making a person more aware of his/her cognitive processes. For example, imagine a child who is completing a mathematical question. The cognitive process would allow the child to complete the task. However, the metacognition would double check through monitoring and evaluating the answer. In this sense, metacognition helps to verify and build the confidence of the child. This is why it can be said that metacognition helps successful learning.

According to **John Flavell** (1979), there are two categories of metacognition. They are metacognitive knowledge and metacognitive experience. The first category of **metacognitive knowledge** refers to the knowledge that helps to control the cognitive processes. This once again has been divided as knowledge of person variable, task variable and strategy variable. These deal with a person's awareness of his capabilities, nature of the task and the method that needs to be accompanied in order to complete the task. On the other hand, **metacognitive experience** involves the strategies used to control cognitive processes so that the individual can accomplish the task successfully. These allow a person to monitor and evaluate while engaging in the process. Now, let us try to identify the key difference that exists between cognition and metacognition.

Q.2 Discuss in detail the types of audio-visual aids.

Audio-Visual aids are also referred to as educational material. Audio means that "hearing" and "visual" means seeing. All such aids that endeavor to create things clear to us through our senses are referred to as "Audio-Visual Aids" or educational Materials. These learning materials create educational things as real as potential and provide us primary data through the organs of hearing and seeing.

Therefore, any device which may be won to create the educational expertise a lot of concrete, effective, realistic, and dynamic are often thought of as audio visual material

According to Burton: "These are sensory objectives, and pictures stimulate stress on the educational method.

According to Carter V Good: "Audio visual aids are those ads that facilitate in finishing the triangular method of learning that classification and stimulation

Characteristics of a Smart Audio-Visual Aid

There are some options; their worth depends upon the extent to that they assist in achieving the subsequent characteristics; these are mentioned underneath the subsequent heads are :

Relevancy

The aid should be relevant to the construct that has to be developed. A really necessary life is the extent to which any help is directly associated with the understanding of the topic matter, a visible aid might be correct to the simplest details, comprehensible and fascinating.

E.g., Use of a Flipchart to justify diet.

Accuracy

It is vital to create the audio visual aids correctly. The aids should be correct in form and size.

Interest

Almost all the topics are often tutored with the assistance of audio visual materials. As a result, it creates interest through visuals, copy, footage, etc. It makes robust subject material fascinating, appealing, and charming

Understandability

Audio visual aids ought to relate the new expertise with past expertise ought to be inside the comprehension of the scholar's World Health Organization are to use it. It ought to one with the previous data, so as to create teaching a lot of erection

Motivation

Audio visual aids ought to encourage learners by overcoming the educational. They must promote the learning of most scholars.

Audio-Visual Aids: Classification

Audio visual aids classification is based on the idea of sensory experience; relatives derive learning, chiefly through direct sensory contact. Keeping this seeable, these are often classified into three main groups:

Audio Aids: These embody Radio, Tape-recorder, Audio electronic equipment, Language laboratory, etc.

Visual Aids: It includes charts, Black and Whiteboard, Maps, Pictures, Models, textbooks, a projector, Transparency, Flash-cards, Print materials, etc.

Audio-Visual Aids: Includes LCD projector, projector, TV, Computer, VCD player, Virtual schoolroom, Multimedia, etc.

Audio-Visual Aids: Advantages

To Challenge the Attention of the Pupils

The teacher who uses devices can usually see that the attention of the whole classroom is on the lesson and that they should not be distracted.

To Stimulate Imagination and Develop the Mental Imagery

Devices stimulate and increase the imagination of the pupils. Intellectual imagery can be used as a vehicle of thought and as a means of clarifying ideas and concepts. As imagination plays a vital role in any innovation and any learning, almost all the innovations are in the form of imagination, and they evolved to be theories and principles.

To Facilitate the Understanding of the Pupils

The most widely acknowledged use of aids, whether visual or audio-visual, is useful in aiding understanding. As we learn everything and anything after understanding otherwise, there can be any learning without understanding. Language learning can be acquired by using models, filmstrips, movies, and pictorial material to supplement textbooks and printed materials. Material devices give significance, importance, colour and imagery body to the idea presented by the instructor.

To Provide Incentives for Action

The use of devices in education, such as pictures and objects, will arouse emotion and incite the individual to act or learn. The teacher must select the right kind of device to excite the students to a worthwhile intellectual activity during the class.

To Develop the Ability to Listen

The ability to listen can be developed best through the use of audio-visual materials. It is also the responsibility of the schools, colleges, and other educational institutions, to provide training for our students to be good listeners first.

Audio-Visual Aids: Disadvantages

- Technical Problems
- Student distraction
- Expenses
- Time
- Space
- Convenience

Audio visuals aids play a vital role in the retention of the topic matter or a protracted amount of your time. Most of the topics within the numerous subjects are often coated by audio-visual aids. This is the explanation that electronic equipment day category space is shifted from black boards to good boards and projectors. It's a production variety of communication using sound and lightweight effects. Not all folks are visual or sense modality learners, the mixture of sunshine and sound promotes and reinforces this retention and permits the audience to hook up with the complete message.

Q.3 As an elementary teacher, how will you integrate technology in your classroom teaching? What tools, technology and techniques will you use to make your teaching more interactive for elementary students?

When technology integration in the classroom is seamless and thoughtful, students not only become more engaged, they begin to take more control over their own learning, too. Effective tech integration changes classroom dynamics, encouraging student-centered project-based learning. The first step in successful tech integration is recognizing the change that may need to happen inside of yourself and in your approach to teaching. When any teacher brings technology into the classroom, he or she will no longer be the center of attention. The level of refocused attention will, of course, depend on the amount and the type of technology (e.g., mobile device, e-reader, laptop, interactive whiteboard) being brought into the classroom. However, this does not mean that the teacher is no longer essential to the learning process. While students may be surrounded by technology at home, it is dangerous to assume that they know how to use it for learning -- this is commonly referred to as the "myth of the digital native," and you can read more about it in this Edutopia blog post: "Digital Native vs. Digital Citizen? Examining a Dangerous Stereotype." Most students still need a guide to help them use digital tools effectively for learning and collaboration.

Integrating Technology Across the Access Spectrum

As discussed in the What is Successful Technology Integration? section, how we define "technology integration" depends on the kinds of technology available and how much access one has to technology. This definition also depends on who is using the technology. For instance, in a classroom with only an interactive whiteboard and one computer, learning will still remain teacher centered and integration will revolve around teacher needs, which are not necessarily student needs. Still, there are ways to use an interactive whiteboard to make it a tool for your students. Even with one computer in the room, there are ways to integrate that one machine into your classroom and still make sure that you and your students are indeed doing things that you couldn't do before, not just doing the same things you did before in a quicker, more efficient way.

Q.4 Critically analyze the approaches of lesson planning in the light of different philosophies.

Philosophy is at the heart of curriculum development. It helps educators in formulating beliefs, arguments, and assumptions and in making value judgments. Philosophy develops a broad outlook, and it also helps in

answering what schools are for, what subjects are important, how students should learn, and what materials and methods should be used. Philosophy provides the starting point . . . in decision making about education in its totality (Ogwara, et. al, 2013). According to Doll (1992: 28), philosophy has the multifaceted effect of helping us to:

- indicate in general what we mean,
- make what we mean more specific and definite, and
- develop what we mean into a useful construct.

Thus, philosophy is a crucial determinant of curriculum trends and the curriculum development process by helping clarify our thought process. And, because philosophy is a process of the mind, there are a variety of philosophical thoughts that need consideration.

To start with, there are two broad categories of philosophy: the traditional and modern philosophies. In each of those categories, there are major philosophies such as idealism, realism, pragmatism, and existentialism, as well as educational philosophies arising from those major philosophies. These include perennialism and essentialism in the traditional category, while progressivism and reconstructionism fall under the modern philosophies.

Idealism

Idealism is considered one of the oldest philosophical systems, whose main proponent was the Greek philosopher, Plato. Idealism advocates that ideas constitute what is real and permanent, i.e. ideas are the only true reality. Idealism also emphasizes the spiritual component of man, i.e., man is a spiritual being.

According to this philosophy, education is the process of development of a person, his/her conscious and spiritual self. The ultimate responsibility for learning rests with learners. The school exists to develop character, increase knowledge, and cultivate aesthetic taste. The teacher is expected to be a model, friend, and guide to the learners.

Realism

The realist's school of thought is traced back to Aristotle, another main, Greek philosopher. According to this philosophy, matter or objects that we see exist by themselves, i.e., they exist absolutely with or without man. In other words, matter is not a construct of the human mind.

The following principles are therefore upheld:

- the principle of independence of matter,
- the principle of orderliness of the world behind its organization, this means that law and order prevail in the universe,
- the principle of the world as real as discovered by the scientist.

Thus, it is possible to have objective knowledge of the world. Our senses are also a source of knowledge. The philosophy also advocates that values exist objectively; they are absolute and eternal.

What then are the educational implication of realism? Following are a few:

- The ultimate educational aim is achievement of knowledge of nature and inner workings of the universe.
- Education is essentially transmission of inherited culture from one generation to another.
- Disciplines of curriculum should contain certain elements of culture.
- Students should learn disciplines to develop intellectual skills to discover important principles and theoretical insights.

Based on this philosophy, there should be a core curriculum for every learner.

Pragmatism

The main proponent of pragmatism was John Dewey (1859 -1952). The proponents of pragmatism were reacting against what they considered as failures or shortcomings of the traditional school system, supported by idealism and realism. Some of the criticisms included:

- Traditional curriculum content included a lot of meaningless and needless content.
- Traditional curriculum did not give a "utility education."
- The curriculum was rigid and did not cater to individual needs of particular learners.

Pragmatists, therefore, advocated for reality being considered as instrumental, i.e., used as an instrument to solve problems. Philosophy is therefore built on practical usefulness, i.e., "cash value of ideas." Hence, truth is what works, what turns out all night. Truth also should be the idea that has been tested, verified, and found effective in solving problems.

If experience is the source of knowledge, it is also a source of education. We learn by doing. However, not every experience is educative; experience must be productive, i.e., produce growth.

Educational Aim: Develop Learners' Ability to Deal with Future Problems

That is, to develop intelligence to solve problems. According to Dewey, the process involves:

- identifying the problem,
- formatting a hypothesis(es),
- gathering or collecting data and tools to solve the problem,
- testing each hypothesis, and
- storing the unity of knowledge for use in some similar situations.

Curriculum

Pragmatists propose a curriculum based on problems that arise out of daily living. School is therefore an extension of home and community.

Methods of Study

These should include:

- problem-solving,
- activity,
- projects, and
- group involvement.

Teachers should be a resource and guide; thus a motivator. Teaching must be child-centered.

For pragmatists, all subjects are vital. However, sciences are favored because the child is able to explore new knowledge.

Existentialism

According to Akinpelu (1981), existentialism is defined as "the philosophy of existence." Sartre (1957) also states that "man is nothing else but what he makes of himself." A person is therefore free to choose the type of life to live and is in control of his/her destiny. An individual is thus free to make choices and be responsible for them.

Reality, therefore, is subjective. Values emphasized are those that the individual chooses freely according to his/her perception.

Implications of Existentialism on Education and Curriculum

The main implication is an emphasis on knowledge and abilities for personal choice. Hence, the need to acquire knowledge and principles of the human condition and acts of choice-making.

Curriculum should have a broad range of subject matter from which learners can choose, i.e., electives, and an inclusion of subjects that involve:

- human emotions,
- aesthetics, and also,
- philosophical subjects.

Most important is that philosophy can free learners to expand their learning and what they believe. Thus, there should be no standard guides for teachers to follow, given that learners are unique.

Educational Philosophies

Based on the major philosophies so far discussed, certain educational philosophies were developed by various scholars. Let us examine some of them.

We begin by pointing out that there are two broad categories of educational philosophies: the traditional and the modern philosophies.

Traditional educational philosophies include perennialism and essentialism; while modern educational philosophies include progressivism and reconstructionism.

Perennialism

Perennialism draws from both idealism and realism. The perennialists believe that the "cement of education, is the common nature of man" (Doll, 1992:29). With that focus, education should be the same for everyone.

Education must therefore pursue perennial truths. These truths are absolute and universal. The philosophy presupposes that there are permanent studies and knowledge that is available, particularly from the great books, which should be taught to all students.

The stress is on significance of reason and intellectual development. Curriculum is expected to contain "important" subjects taught in their customary separate form, e.g., history as history, geography as geography, and civics as civics, rather than combining them and naming them "Social Studies" for example.

Other subjects emphasized on include literature, philosophy, and theology because of their ability to "sharpen the mind."

Essentialism

Essentialism focuses on traditional subjects, reading, writing, and mathematics. This philosophy aims to instill students with the "essentials" of academic knowledge and character development. In the following video, Dr. Thomas Lickona describes the importance of respect and responsibility in schools.

As with perennialism, essentialism is also on the major traditional philosophies of idealism and realism. Essentialist's educational aims are to develop intellectual powers, as well as educate competent persons. Schools should therefore not be side-tracked into catering to the personal problems and social needs of students. Cultural heritage needs should be considered for curriculum making. Essential skills especially reading, writing, and arithmetic (three Rs) and academic subjects such as English, science, and mathematics are given priority in the education process with an emphasis on mastery of concepts and principles of subject-matter.

As with perennials, the curriculum is subject-centered and emphasized separate organized disciplines as opposed to integrated subjects. The teacher in this case is considered an authority in his/her subject field. Moving from traditional educational philosophies, let us now examine more modern ones.

Progressivism

Progressivism is one of the educational philosophies originating from pragmatism. Hence all that we discussed earlier about pragmatism holds true for progressivism.

Besides Dewey's contribution, other scholars in this area include Montessori, Cornelius, and Rousseau. Their studies and research were geared towards identifying the most appropriate type and nature of curriculum for learners.

Progressivists education seeks to promote democratic schooling as well as social living. The other major emphasis is on a child or learner-centered curriculum. The curriculum therefore is based on the learners' interests, needs, abilities, and aspirations, among other characteristics of the learners.

Progressive education curriculum emphasized five approaches to the teaching/learning process, namely:

- teacher-pupil planning of curriculum activities,
- flexible curriculum and individualized instruction
- learner-centered teaching and learning methodology.

Selection of study material in line with the expressed interests and concerns of the learner. Non-formal curriculum activities and physical training in areas like games, related hobbies, and other co-curricular areas.

The aim of this form of education is to provide a learning atmosphere that allows children maximum self-direction and to reduce teacher domination in the teaching/learning process.

Concerning progressivism, the emphasis is on a child-centered curriculum, which necessitates a flexible and broad curriculum. There is also an emphasis on practical skills.

In general, it is possible to identify elements of past education in the present-day curricula in many education systems within the United States and the rest of the world, depending on the past history.

The following video shows a real classroom of 4th- and 5th-grade students who are participating in a **constructivist** social studies lesson. Constructivism is often considered to be an offshoot of progressivism.

Q.5 Today how much educational technology has progressed for its utilization in the classroom? Discuss the historical background of educational technology in the light of its emergence.

Technology has impacted almost every aspect of life today, and education is no exception.In some ways, education seems much the same as it has been for many years. A 14th century illustration by **Laurentius de Voltolina** depicts a university lecture in medieval Italy. The scene is easily recognizable because of its parallels to the modern day. The teacher lectures from a podium at the front of the room while the students sit in rows and listen. Some of the students have books open in front of them and appear to be following along. A few look bored. Some are talking to their neighbors. One appears to be sleeping. Classrooms today do not look much different, though you might find modern students looking at their laptops, tablets, or smart phones instead of books (though probably open to Facebook). A cynic would say that technology has done nothing to change education.

However, in many ways, technology has profoundly changed education. For one, technology has greatly expanded access to education. In medieval times, books were rare and only an elite few had access to educational opportunities. Individuals had to travel to centers of learning to get an education. Today, massive amounts of information (books, audio, images, videos) are available at one's fingertips through the Internet, and opportunities for formal learning are available online worldwide through the Khan Academy, MOOCs, podcasts, traditional online degree programs, and more. Access to learning opportunities today is unprecedented in scope thanks to technology.

Opportunities for communication and collaboration have also been expanded by technology. Traditionally, classrooms have been relatively isolated, and collaboration has been limited to other students in the same classroom or building. Today, technology enables forms of communication and collaboration undreamt of in the past. Students in a classroom in the rural U.S., for example, can learn about the Arctic by following the expedition of a team of scientists in the region, read scientists' blog posting, view photos, e-mail questions to the scientists, and even talk live with the scientists via a videoconference. Students can share what they are learning with students in other classrooms in other states who are tracking the same expedition. Students can collaborate on group projects using technology-based tools such as wikis and Google docs. The walls of the

classrooms are no longer a barrier as technology enables new ways of learning, communicating, and working collaboratively.

Technology has also begun to change the roles of teachers and learners. In the traditional classroom, such as what we see depicted in de Voltolina's illustration, the teacher is the primary source of information, and the learners passively receive it. This model of the teacher as the "sage on the stage" has been in education for a long time, and it is still very much in evidence today. However, because of the access to information and educational opportunity that technology has enabled, in many classrooms today we see the teacher's role shifting to the "guide on the side" as students take more responsibility for their own learning using technology to gather relevant information. Schools and universities across the country are beginning to redesign learning spaces to enable this new model of education, foster more interaction and small group work, and use technology as an enabler.

Technology is a powerful tool that can support and transform education in many ways, from making it easier for teachers to create instructional materials to enabling new ways for people to learn and work together. With the worldwide reach of the Internet and the ubiquity of smart devices that can connect to it, a new age of anytime anywhere education is dawning. It will be up to instructional designers and educational technologies to make the most of the opportunities provided by technology to change education so that effective and efficient education is available to everyone everywhere.