

ROLE OF THINKING ON TEACHING COMPETENCY – PRE SERVICE TEACHERS PERSPECTIVE

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ABSTRACT

The teacher competence includes a thorough knowledge of the content. A teacher competence mainly includes the strategies, understanding of student psychology and the process of thinking. With regard to the former, plenty of resource material is available. But, the latter has been a continuous experimentation throughout the world. Cognitive Psychology contributes substantially in enhancing teaching competence. In recent times, cognitive neuroscience researches have demanded the teaching competence to be redefined to meet the challenges. Naturally, the learning process depends on the effective functioning of the brain. Thinking refers to the process of thought. To consider, judge or believe. The process of exercising the mind in order to make a decision, to remember or recollect, to make the mental choice between options. A focus on the development of thinking competencies within specific areas of the curriculum and across it not only serves as a core integrative function, it also has the potential to provide continuity in approaches to learning, the view that such knowledge, skills and behaviours are important to lifelong learning. To emphasis' this, teachers model skilful and , and make their own thinking explicit as part of their everyday practice. The impact of thinking on class room activities and other educational activities is more to enhancing the teaching competency.

Keywords: Cognitive Psychology, teaching competence, effective thinking and cognitive neuroscience

INTRODUCTION

The teacher competence includes a thorough knowledge of the content [5]. A teacher competence mainly includes the strategies, understanding of student psychology and the process of thinking. With regard to the former, plenty of resource material is available. But, the latter has been a continuous experimentation throughout the world. Cognitive Psychology contributes substantially in enhancing teaching competence. In recent times, cognitive neuroscience researches have demanded the teaching

competence to be redefined to meet the challenges. Naturally, the learning process depends on the effective functioning of the brain. Thinking refers to the act or practice of one that thinks or thought, a way of reasoning and judgment. A focus on the development of thinking competencies within specific areas of the curriculum and across it not only serves as a core integrative function, it also has the potential to provide continuity in approaches to learning, the view that such knowledge, skills and behaviours are important to lifelong learning [4]. To emphasis' teaching competency among pre service teachers, effective thinking is important to explicit as part of their everyday practice.

THINKING AND TEACHING COMPETENCY

Competency means the right way of conveying units of knowledge, application and skills to students. The right way includes knowledge of content as well as the process, methods and means of conveying them in an interesting way. It is applied to an ancient human value, for example, the right way to do things is the competent way, the right way to perform a job, the right way to live and work in association and cooperation with others. In other words, it means a desired quality of job performance. The training for competency has always been training for creating abilities or qualities that are placed in actual job situation / context. Clearly, teaching will be more effective if it uses methods which are aligned with how the brain best attends to understand and retain information. The search is: Which are the teaching methods most brain-compatible? Although some have warned that it is too early at this point to make valid inferences about teaching methods based on brain science, many

make an attempt to build bridges between theory and practice, and educators are motivated through books and workshops to make classrooms (brain-compatible). Many principles of Brain-based learning have been derived, and educators are attempting to practices these principles. Teaching practices undergo a natural selection process - those which work survive those which do not drop away. Effective teaching practices are effective precisely because they are brain based. Thinking skills can be defined in a variety of ways. Many different taxonomies and models for teaching thinking have been developed. Each classification scheme has its strengths and weaknesses. However, whatever the system or systems being used, all seek to improve the quality of student thinking.

This domain encompasses a range of cognitive, affective and metacognitive knowledge, skills and behaviours which are essential for effective functioning in society both within and beyond school. The study of thinking enables students to acquire strategies for thinking related to enquiry, processing information, reasoning, problem solving, evaluation and reflection[8].

DIMENSIONS OF THINKING

Thinking Processes domains are organized in three dimensions:

- Reasoning, processing and inquiry
- Creativity
- Reflection, evaluation and metacognition.

REASONING, PROCESSING AND INQUIRY

The Reasoning, processing and inquiry dimension encompasses the knowledge, skills and behaviours required to enable students to inquire into the world around them, and to use critical thinking to analyse and evaluate information they encounter. Students learn to assemble and question information and develop opinions based on informed judgments. They also develop the capacity to transform information into coherent knowledge structures.

CREATIVITY

The capacity to think creatively is a central component of being able to solve problems and be innovative. In the Creativity dimension, students learn to seek innovative alternatives and use their imagination to generate possibilities. They learn to take risks with their thinking and make new connections.

REFLECTION, EVALUATION AND METACOGNITION

Learning is enhanced when individuals develop the capacity to reflect on, and refine their existing ideas and beliefs. In the Reflection, evaluation and metacognition dimension, students learn to reflect on what they know and develop awareness that there is more to know. They learn to question their perspectives and those of others. They evaluate the validity of their own and others' ideas. They also develop their metacognitive skills in planning, monitoring and evaluating their own thinking processes and strategies [12].

NEURAL PATHWAY AND THINKING PROCESS

Brain cells communicate with each other through an electrochemical process. Every time we think, learn or communicate, a neuron in our brain sends a nerve impulse down its axon. The axon of one brain cell makes multiple thousands of connections with many thousand other brain cells [14]. The point where one brain cell connects to another is called a synapse. When the nerve impulse (electromagnetic bio-chemical message) surges down the axon, it is fired across the synaptic gap via a chemical messenger called a neurotransmitter into the dendrite of the receiving brain cell. The nerve impulse then travels along the axon of this brain cell, across the synaptic gap to another brain cell and so on. When a neuron activates 'fires' another in this way, it's like a switch being turned on. Neurons fire like a line of falling dominoes. This activity is the process that creates the intricate pathway of thought, also called memory traces or neural pathway. A neuron can either 'excite' other neurons to make them function or they can 'inhibit' other neurons so they don't become active. Therefore there are different types of neurotransmitters that either excite or inhibit other neurons. Neurotransmitters are found in the food we eat. That is why it is important to eat the right of brain foods in order to improve the effectiveness and efficiency of our mental process. The neural pathway discussed earlier in the text, creates patterns of thought. Once these pathways are created, the thoughts are likely to be repeated. This is because, the repetition of a thought decreases the biochemical resistance to that thought happening again and the connections between two brain cells in the neural pathway become stronger. Every time we think a thought, the resistance is reduced therefore increasing the likelihood of us having that thought again. This is how habits are formed. And it is why it is vitally important that we monitor our thinking. If we think negatively, we will build a strong connection of negative thoughts so we will be more likely to keep repeating those negative thoughts. Try to ensure that we are creating positive thoughts and good habits. It also explains why learning something new or breaking a habit can be difficult at first. The key is to stick at it and it will become easier. It's often not enough to simply stop doing a certain habit. We must replace it with a new good habit as our new way of thinking.

HUMAN BRAIN THINKING PROCESS

Thinking exists as the top mental activity demonstrated by man. All human accomplishments and advancement come from the results of thought. Civilization, knowledge, science and technology arise from the thinking process. Thought and activity are inseparable. Man normally perceives an action in his mind before undertaking an activity.

THE BRAIN BUILDING BLOCKS

The brain's primary building element starts with the brain cells known as neurons. Chemical processes in the brain send out messages through the neurons that determine the mental processes along with thinking. Cells called glia exist between the neurons in the brain. Indicates the glia interact with the neurons and hormones chemically in the production of thought. The motor neurons produce

the action in our muscles and the sensory neurons connect to our five Senses.

THE FIVE SENSES

The five senses in the body are sight, taste, smell, touch and hearing. The senses bring information back to the central process in the brain. Emotions exert an effect on human thinking by producing actions such as crying, laughing and sadness that modify the sensory information.

BRAIN AND THINKING PROCESS

Thinking brings together information to link the various parts into something comprehensible. Cognition refers to the thought process. The American College of Radiology and the Radiology Society describe functional MRI as a diagnostic procedure that can determine precisely the location of thought processes in the brain. A positron emission topography scan also can document images of the brain during a range of thought processes [14]. The future has promise for new insights into the thinking process using these new technologies.

REASONING PROCESS

Reasoning implies taking facts and evidence perceived by the senses and combining it with thinking to draw conclusions. Changing Minds Organization lists 20 types of reasoning. The most common types include inductive and deductive reasoning. Inductive reasoning refers to the process of starting from specifics and expanding the concepts to cover a range of observations. Deductive reasoning implies starting from a general rule and moving to a specific item.

THE LEARNING PROCESS

Learning occurs to help the individual think. Human beings learn using a trial and error process along with incorporating experiences, abstract thought and deduction. According to Science Daily, intelligence arises from the number of connections learned [11]. The brain integrates the incoming data with the information stored in the brain.

CONCLUSION

Thinking helps us to empathize and socialize with others. This is helpful in building a good relationship between teacher and students. The teacher can understand the feelings, emotions and problems of the students and help them accordingly. The understanding of the evolutionary origin of teaching competency requires the recognition in them of a basic biological function which, properly selected, could originate them. So far this understanding has been impossible because teaching competency has been considered as a denotative symbolic system for the transmission of information. The role of thinking has become a hot topic for research and discussion. In the field of education the scope of research on thinking is more since the impact of thinking on class room activities and other educational activities is more to enhancing the teaching competency.

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