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TEACH THINKING COMPETENCE AS PART OF THE TECHNICAL AND PROFESSIONAL
COMMUNICATIONS

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ABSTRACT

Human beings are the product of genes and their growing environment. Educators generally agree that the learner learns best by doing and thinking. The ability to think and the methods of thinking are learnable through training. Thinking is the process of how we sense what is happening around us (stimulus) and respond suitably. The skills in thinking are useful as they enable to live the kind of life that we wish. Thinking skills are usable in different proportions and sequences, as per our need. Different patterns of thinking are found to be useful in different types of circumstances. Nevertheless, what we teach, to develop and refine the ability to think is dependent on our efforts to teach the skill to the professional and technical students to succeed in their personal and professional life. So a key to success in creative thinking is clarity. In his article I want to stress on the clarity in methods of thinking such as Information Collection, Organization, Application, Analysis, Synthesis and Review, and the role of the teacher in teaching thinking skills.

Key words: Teaching - Thinking - Competence - Professional Communication

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INTRODUCTION

Teaching children to become effective thinkers is recognized as an immediate goal of education....If students are to function successfully in a highly technical society, then they must be equipped with lifelong learning and thinking skills necessary to acquire and process information in an ever-changing world.

Einstein once said, "Every child is born a genius." But the reason why most people do not function at genius levels is because they are not aware of how creative and smart they really are.

You can begin building your creative muscles with focused questions. Some that you might think of are the following: What are we trying to do? How are we trying to do it? What are our assumptions? What if our assumptions are wrong? What if our assumptions are right?

Learning Objectives: Taking the indicators for creative thinking from Excellence and Enjoyment, it is desired particularly more in technical and professional students:

- Generating imaginative ideas in response to stimuli.
- Discovering and making connections through thinking and experimentation.

- Exploring and experimenting with resources and materials.
- Asking 'why', 'how', 'what if' or unusual questions.
- Trying alternatives or different approaches.
- Looking at and thinking about things differently and from other points of view.
- Responding to ideas, tasks and problems in surprising ways.
- Applying imaginative thinking to achieve an objective.
- Making connections and seeing relationships.
- Reflecting critically on ideas, actions and outcomes.

To begin to make sense of the world, a pupil must perceive, attend to or take in sensory information. Ways to remember information and access and use of thinking skills need to be taught explicitly to pupils with learning difficulties. Learning to think is not achieved on its own. Thinking takes place in a social context, is influenced and moulded by the culture and environment in which pupils learn. Findings emerging from the thinking skills research reviewed in preparation for this report include:

Providing students instruction in thinking skills is important for several reasons:

- These skills are necessary for people to have in our rapidly changing, technologically oriented world.
- Students, in general, do not have well-developed thinking skills.
- Although many people once believed that we were born either with or without creative and critical thinking abilities, research has shown that these skills are teachable and learn-able.
- Instruction in thinking skills promotes intellectual growth and fosters academic achievement gains.

What is thinking?

Thinking is the process of how we sense what is happening around us (stimulus) and respond suitably, to the stimulus that excited our sensations, in the first place.

Benjamin S. Bloom Instructional Model: Popular instructional model developed by the prominent educator Benjamin S. Bloom. It categorizes thinking skills from the concrete to the abstract –Remembering, Understanding, Applying, Analyzing, Evaluating and Creating. He challenges instructors to cultivate both empathy and self-knowledge in their professional work. And he demands that instructors acknowledge teaching as an interaction in which students are equal partners. Successful instructors are the choreographers of rewarding learning experiences for their students.

Process of thinking: This process (thinking) is classified into the following broad stages:

1. Sensory awareness and perception: Eyes, Ears, Nose, Tongue, Skin provide our bodies with sensations viz. Vision for fixing, inspecting, tracking, focusing. Use of hear, for listening, responding to sound. Use of touch for stroking different textures, squeezing materials with different densities etc. Through which they pick up messages from the environment around.

2. Transmit the sensation through Biological Pathway: Nerves transmit these sensations through the biological pathway (the nervous system) to the biological structures (brain), which translates them and sends a response back to the sense organs.

3. Psychological Perceptions and Reactions: The brain translates (through decoding messages sent to it through the biological pathways by the sense organs) and subsequently encodes response messages, called psychological perceptions and reactions, which are a reflection of our understanding of what is happening around us.

4. Cognition: The psychological perceptions and reactions are translated through the thinking process known as cognition (which is biological and psychological in nature) into concepts, ideas, assumptions, suppositions, inferences, hypotheses, questions, beliefs, premises, logical arguments, etc.

5. Communication: The results of the cognition are converted by the brain into verbal, non-verbal, and written messages (language), to communicate the thoughts and ideas to people and environment around us.

Methods of Thinking: The ability to think and the methods of thinking is learnable through training. The skills in thinking are useful as they enable us to live the kind of life that we wish.

Thinking happens in a variety of ways

1. Information collection: This happens through, observing accurately, collecting data, identifying facts and recognizing patterns; identifying concepts, objectives, issues, or themes; identifying relevant information. Bringing to consciousness the relative data needed for cognitive processing.

2. Organization: This happens by organizing information systematically with accurate relationships; identifying reasonable outcomes/conclusions. Arranged information can be used more effectively.

3. Application – Processing: This takes place through application of appropriate external tools, techniques, and models (like use of a theorem or principle); using a variety of sources for information to draw or come to a conclusion; application of knowledge/experience to practical situations.

4. Analysis: This happens by connecting data to conclusions; stating clearly expected results; defending and/or justifying conclusions; comparing results/conclusions to expected outcomes. Clarify existing information by examining parts and relationships.

5. Synthesis: This is a result of making appropriate generalizations; designing and executing projects/experiments; formulating and testing hypotheses; formulating thesis and organizing supporting material; identifying and solving problems.

6. Review: Comparing different ideas, analyzing, using solution techniques, and theses; identifying bias/subjectivity; recognizing effects from different assumptions, theories, and models; evaluating different approaches using reasoned argument. Assess the reasonable and quality of ideas. Set standards for making judgments and conform the idea.

Physical elements in thinking competence instruction:

- Computer-assisted instruction is related to intellectual growth and achievement gains.
- Training teachers to teach thinking skills are associated with student achievement gains.
- In addition to program content, classroom practices, and teacher training, the success of thinking skills instruction is also dependent upon other factors, such as administrative support and appropriate match between the students and the instructional approach selected.
- Neither infused thinking skills instruction nor separate curricula are inherently superior to the other; both can lead to improved student performance and elements are often used together with beneficial results.
- Because thinking skills instruction requires large amounts of time in order to be effective, administrative support and school wide commitment are necessary for program success.
- It is especially important to establish and maintain a positive, stimulating, encouraging classroom climate for thinking skills instruction, so that students will feel free to experiment with new ideas and approaches.

Thomas Edison, arguably the most successful creative genius in human history, once said that “creativity is 99 percent perspiration and only 1 percent inspiration”. Extensive research on creativity tends to bear him out.

Teacher’s Role: What is required is that teachers be authentic individuals who are striving to improve their practice through the use of critical and creative thought. Acting upon their belief in the importance of critical and creative reflection, teachers would attempt to:

- **Analyze** their own thinking processes and classroom practices and provide reasons for what they do.
- Be **open-minded**, encouraging students to follow their own thinking and not simply repeat what the teacher has said
- Change their positions when the evidence warrants, being willing to **admit a mistake**.
- Consistently **provide opportunities** for students to select activities and assignments from a range of appropriate choices.
- Exhibit genuine interest, curiosity and **commitment to learning**.
- **Undertake** the organization and preparation required to achieve learning goals.
- Seek imaginative, appropriate and **ethical solutions to problems**.
- Be **sensitive to others'** feelings, level of knowledge and degree of sophistication.

- Show sensitivity to the physical elements which contribute to a stimulating learning environment through the physical arrangements and displays they provide or facilitate.
- Allow for **student participation** in rule setting and decision making related to all aspects of learning, including assessment and evaluation.
- **Instructional approaches** found to promote thinking skill development include redirection, probing, and reinforcement; asking higher-order questions during classroom discussions and lengthening wait-time during classroom questioning.
"Think left and think right and think low and think high. Oh, the thinks you can think up if only you try!" - Theodor Seuss Geisel

Key to success:

The first key to success in creative thinking is clarity. We must have the clarity in methods of thinking; clarity will show the way to solve the problem half. Take the time to think through, discuss and ask questions that help you to clarify exactly what you are trying to accomplish and exactly what problems you are facing at the present moment. Just as fuzzy thinking leads to fuzzy answers, clear thinking leads to clear answers.

A second key is concentration. Put everything else aside, and concentrate single-mindedly on focusing all your mental powers on solving one single problem, overcoming one particular obstacle or achieving one important goal. The ability to concentrate on a single subject without diversion or distraction is a hallmark of the superior thinker.

A third key is an open mind. The average person tends to be rigid and fixed in his thinking about getting from where he is to where he wants to go. The creative thinker, however, tends to remain very flexible and open to a variety of ways of approaching the problem.

A fourth key is to show more patience and willing: The superior thinker tends to be more patient and willing to consider a variety of options before moving toward a conclusion. The average person on the other hand, has a tendency to leap to conclusions and determine that there is only one way to achieve a particular goal.

Conclusion: All improvements begin with questioning the current, existing circumstances. If you are not making progress for any reason, stop and think, and begin asking yourself the hard questions that will stimulate your mind to consider other possibilities. You are a genius, and you were born with the potential for exceptional creativity. But creative abilities are latent. They are like muscles that grow with use. You can increase your creative powers by using them, over and over, in every situation, deliberately and specifically, until creativity and a creative response to life is as natural to you as breathing in and out is. There are very few things that you can do that can have a more powerful positive impact on your entire life than becoming excellent in creative thinking.

You can, if you think you can.

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