

DEVELOPING THE HABIT TO THINK CREATIVELY: NEED OF THE HOUR

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ABSTRACT

Creativity can be understood as the ability to develop new insights into situations and apply innovative solutions to make improvements. It necessitates one to think creatively. The cognitive processes involved in creativity are domain specific knowledge; divergent and convergent thinking strategies that include 'out of the box' as well as 'inside the box'; and intrinsic motivation to make the imagination a reality. Creativity and innovation plays a significant role in education, industry, of course in all areas of life. To think, creatively, has become a significant source of employability characteristics that and employer is looking for in job interview. At the same time, competencies to develop 'innovation skills' need to be developed in students through teaching learning process. Innovation requires both the support of the individual and society as a whole. The root/core of innovation lies in creativity and future thinking skills. The development of creative thinking skills is related to educational environment. This paper discusses on how our teaching learning process can nurture as well as enhance the habit to think creatively.

Keyword: - Creativity, Teaching Learning Process, Educational Environment.

1. INTRODUCTION

A Hypnotic Regression is a therapeutic technique in which the client is urged to imagine going back in time, past Habits of Mind are the way our thinking process is tuned to operate effectively in society and promote strategic reasoning, determination, intuitiveness, creativity and use of our expertise in skillful way to deal with real life situation. Costa & Kallick (2000) has identified 16 Habits of Mind like – persisting; managing impulsivity; listening with understanding and empathy; thinking flexibly; thinking about thinking or meta cognition; striving for accuracy; questioning and posing problems; applying past knowledge to new situations; thinking and communicating with clarity and precision; gathering data through all senses; creating, imagining innovating; responding with wonderment and awe; taking responsible risks; finding humor; thinking interdependently and remaining open to continuous learning. Once an individual's thinking process is equipped to these skills to facilitate the way of responding to the environment/situation/challenges with better awareness, strategy resulting into positive outcome. In this paper, the focus point is 'to think creatively'. It can be understood as to think about how something might be done differently from the "norm"; propose new ideas; strive for originality; consider new suggestions others might make (Costa & Kallick, 2000).

We are living in the age of creativity. Future success depends on being how creative we are. Adobe study (2012) was conducted on Creativity. The Research firm was StrategyOne, it was an online survey on 5000 adults, 18 yrs or older, 1000 each in the US, UK, Japan, Germany, and France. Data set of each country is nationally representative of the population of that country. It was found that 8 out of 10 people feel that unlocking creativity is critical to economic growth; and 1 out of 4 people believe they are living up to their own creative potential. Globally it was observed that creativity is suffering at work and school. The study reveals a workplace creativity gap, where 75% of the respondents said they are under growing pressure to be productive rather than creative, despite the fact that they

are increasingly expected to think creatively on the job. The study also revealed that creativity is stifled by their education systems and many believe creativity is taken for granted (52% globally, 70% in the US). It was observed by Sir Ken Robinson, an internationally recognized leader in the department of education, creativity and innovation is of the opinion that our educational system doesn't enable our students to develop their natural creative powers. Instead they promote uniformity and standardization.

What is creativity? Common definition from Webster's - Creativity is marked by the ability or power to create—to bring into existence, to invest with a new form, to produce through imaginative skill, to make or bring into existence something new. It can be understood as the production of novel and useful ideas (Barron, 1955; Runco & Jaeger, 2012). Reid and Petocz (2004) mention that creativity is viewed in different ways in different disciplines: in education it is called “innovation”; in business “entrepreneurship”; in mathematics it is sometimes equated with “problem-solving”, and in music it is “performance or composition”. A creative product in different domains is measured against the norms of that domain, its own rules, approaches and conceptions of creativity (Reid & Petocz, 2004, p. 45). It can be understood as uniqueness of the individual, new combination having social worth, new way of solving problem, that requires fluency, flexibility, originality and elaboration, to generate new and dynamic ideas and solutions, etc.

We can ask few questions like: what to create, how does one create, who creates, for whom he is creating? Creativity involves few skills viz., choosing, predicting, interpreting, translating, recalling and manipulating. Choosing : To select from a number of possibilities and pick by preference; Predicting : To state, tell about, or make something known in advance, on the basis of special knowledge; Interpreting : To explain and understand the meaning of something and to conceive the significance of it; Translating : To transform something from one state to another. Recalling : To remember and bring back to mind a previous subject or situation and Manipulating : To handle, manage, or use (sometimes with skill) an object in a process or performance. It requires select knowledge and use it toward a specific goal; interpret communication and share it; and remember previous knowledge and use it skillfully. Cannatella (2004) mentions that the need for creativity is biologically, physically, and psychologically an essential part of human nature and that it is necessary for human reproduction, growth and cultural striving (p. 59). Clarkson (2005) has mentioned that there are many traits which have been associated with creativity, such as divergent thinking, introversion, self-esteem, tolerance for ambiguity, willingness to take risks, behavioral flexibility, emotional variability, ability to absorb imagery, and even the tendency to neurosis and psychosis (p. 6). A distinctive psychological approach has emerged; it is dated to the publication of Theresa Amabile's book 'The Social Psychology of Creativity'. According to Amabile, there are three components that are necessary for creative performance: domain-relevant skills, creativity-relevant processes, and intrinsic task motivation.

2. DOMAIN-RELEVANT SKILLS

Domain-relevant skills compose the individual's complete set of response possibilities from which a new response is to be synthesized and information against which the new response is to be judged. This component includes familiarity with and factual knowledge of the domain in question (for example, knowledge of chemistry): facts, principles, opinions about various questions in the domain, knowledge of paradigms, performance "scripts" ,for solving problems in the domain, and aesthetic criteria. In terms of promoting creativity, formal education is ordinarily most concerned with imputing this body of factual knowledge.

The nature of the domain-relevant information and the manner in which it is stored can also make an important difference in creative production. Knowledge organized according to general principles is of greater utility than specific, narrowly applicable collections of facts. Likewise, performance information organized according to heuristic approaches to problems rather than blind response algorithms should be more likely to contribute to high levels of creativity. In general, an increase in domain-relevant skills can only lead to an increase in creativity, provided that the domain-relevant information is organized properly. There is a high correlation between creativity and proficiency in the more routine domain-relevant intellectual tasks. Thus, according to this componential perspective, the popular notion that a great deal of knowledge in a given domain can be detrimental to creativity is incorrect.

3. CREATIVITY-RELEVANT PROCESSES

The second component is the one with which creativity researchers have traditionally been concerned. This component includes a cognitive style characterized by a facility in understanding complexities and an ability to break set during problem solving. Several specific aspects of cognitive style, including a number of distinct abilities,

appear to be relevant to creative performance. Individuals who can break perceptual set, avoid "functional fixedness" and abandon an old set of unsuccessful problem-solving strategies in order to explore new cognitive pathways are able to solve problems creatively. Keeping response options open as long as possible, suspending judgment as when "brainstorming", using "wide" categories to see relations between apparently diverse bits of information, and accurately remembering larger amounts of detailed information leads to more creative works and responses.

The creativity-relevant processes component involves a work style characterized by an ability to concentrate effort for long periods of time, a sense about when to leave a stubborn problem for a while. Creativity-relevant processes depend on personality characteristics related to self-discipline, ability to delay gratification, perseverance in the face of frustration, independence, and an absence of conformity in thinking or dependence on social approval. Creativity-relevant processes also include implicit or explicit knowledge of creativity heuristics. These are simply rules of thumb for generating ideas-for example, "When all else fails, try something counterintuitive". Creativity heuristics are best considered as methods of approaching a problem that are most likely to lead to set-breaking and novel ideas rather than as strict rules that are applied by rote. Creativity-relevant processes can be influenced by training or experience in generating ideas, and they operate at the most general level; they can influence performance in any content domain.

4. INTRINSIC TASK MOTIVATION

Amabile stressed that this component is the most important in creative performance. Although domain-relevant skills and creativity-relevant processes are obviously quite important, a skilled individual can fail to produce creative works or responses without intrinsic task motivation-the drive to do something because it is inherently interesting, enjoyable, or challenging.

Intrinsic motivation is defined as the motivation to do something for its own sake. At its highest levels, intrinsic motivation becomes the kind of passion, a high degree of involvement and personal challenge in the work and a sense of deep satisfaction in doing something well. Unfortunately, the motivational role in creativity is often overlooked. In fact, when individuals are hired for jobs, employers spend much more time and attention on their domain-relevant skills (what they have learned to do, what kind of education they have, how they have performed on various tests and tasks), pay relatively little attention to creativity-relevant processes, and seldom pay any attention to their intrinsic motivation.

A good example for intrinsic motivation is: The Nobel Prize-winning physicist Arthur Schawlow was asked what he felt made the difference between very creative scientists and less creative scientists. He said, "The labor of love aspect is important. The successful scientists often are not the most talented, but the ones who are just impelled by curiosity-they've got to know what the answer is" (Schawlow, 1982). Curiosity is an important element of intrinsic motivation.

According to Amabile there are five stages of creative performance. Motivational state is of most importance at first two stages:

1. Task presentation stage: Where the creative task is identified either by the individual or by someone else
2. Preparation stage: Where the individual musters information relevant to the task or problem, both from his or her existing knowledge of the domain and through the search for new information. This relies principally in skills in the task domain, as does the penultimate stage of the process.
3. Idea generation stage: Where the individual produces possible responses in the search for solutions or ideas appropriate to the task at hand. At this stage skills in creative thinking are also highly influential in the quality of potential solutions produced.
4. Idea validation: Where the individual evaluates the appropriateness of the ideas generated at the third stage to the task at hand.
5. Outcome assessment: If a new idea is either accepted or rejected outright, the process ends at fifth stage. Some times an idea will not be judged as wholly appropriate but will have made a significant contribution to the task solution, in these cases the process returns to the beginning only, and experience gained in the first attempt adds to the individuals repertoire of domain relevant skills available for future creative efforts.

THINKING PROCESSES INVOLVED IN CREATIVITY ARE OF TWO DIFFERENT TYPES

(a) convergent thinking, which emphasizes reproduction of existing data and adaptation of old responses to new situations in a more or less logical manner; and (b) divergent thinking, characterized by flexibility and originality in the production of new ideas. Convergent thinking is characterized by the reproduction of known concepts and the adoption of known responses to new situations. Divergent thinking, on the other hand, involves fluency, flexibility, and originality, and is essentially concerned with production of large numbers of new ideas (Corpley, 1998, p. 212). Both convergent and divergent thinking are essential to the problem-solving experience, but when students are developing possible solutions to a problem, evaluation of each solution as it is presented tends to inhibit the flow of ideas. An idea is creative when it brings a new insight to a given situation. The process of creativity includes the ability to change one's approach to a problem, to produce ideas that are both relevant and unusual, to see beyond the immediate situation, and to redefine the problem or some aspect of it (Kneller, 2005, p. 77). All individuals are to some extent creative, although some are much more creative than others are. While a small part of this difference may be due to heredity, large part likely results from the failure of individuals to express their creative potential. In fact, many essential attributes of creativity are discouraged in the typical college classroom.

CAN OUR TEACHING LEARNING PROCESS INCORPORATE THE HABIT TO THINK CREATIVELY?

Creativity can also be encouraged by establishing a class environment that accepts and reinforces new ideas. These ideas can be weighed on their own merits. It should be emphasized that most creative achievements seem revolutionary when first introduced (Berte, 1985, p. 22). It has also been proposed that rather than present fact or theory, the instructor should place students in situations where they are forced to seek out the information for themselves (Lancaster, 2000, p. 8). Above all, creativity involves self-direction (Ericksen, 2004, p. 1).

Academic excellence is synonymous with skill at convergent production. On the other hand, both convergent and divergent production are required to solve serious management problems. If we have to produce managers who can solve problems of the society, we must provide our students with opportunities to exercise and enhance their natural creative abilities and we must create classroom environments that make these exercises effective. Different techniques have been suggested for exercising creativity and developing problem solving skills in classroom (Lubkin, 1980; Costa, 1985). In the opinion of Felder (1988), the first step for fostering creativity is 'uncritical generation of ideas'. Some of the techniques are: Osborn's checklist for New Ideas (Arnold, 1962), Attribute Listing proposed by Robert Crawford (Arnold, 1962), Morphological Analysis, proposed by Fritz Zwicky (Arnold, 1962), Random stimulation (Edward de Bono, 1970), Brainstorming developed by Alex F. Osborn. Once the ideas have been generated and collected, the next phase of the process is to bring back the critical facility and select the solutions that have greatest promise of working (Felder, 1988). The effort to generate ideas as well as critically evaluating the ideas should be integrated with regular curriculum. For example, understanding teaching learning styles, using questions effectively to generate ideas, motivating students to participate, using discussion to engage students, strategies to help students be actively involved in their learning through peer instruction and group work, engage students with writing assignments and help them improve their writing skills, and use problem solving to increase student learning.

Perhaps, the greatest deterrent to creativity is the conventional college teacher (Milton, 2002, p. 6). Ideas tend to "pop up" at any moment, often catching the teacher by surprise (Crutchfield, 1993, p. 16). All too frequently, instructors may view this behavior as the student's impertinence or criticism of their teaching methods (LaFauci & Richter, 2000, p. 1).

It is vital that students feel secure about participating in the process of idea generation. Many a times teachers are the worst offenders in creating these fears and the child is humiliated for asking "stupid questions or coming with "ridiculous" idea or offering an "obvious wrong" solution (Felder, 1988). In this process students get the message that they are not welcome to ask hard questions as they feel that offering ideas that might be thought wrong or foolish and will instead concentrate simply on figuring out what we want and then giving it to us. Creativity is significantly related to employability. Research conducted by UNESCO Asia and Pacific Regional Bureau for Education, 2004 that focuses on skills development for the technical & nontechnical industries in the knowledge society. A knowledge society is one that creates, shares, and uses knowledge for the prosperity and well-being of its people. Greater access to information and new forms of social interaction and cultural expression are on

demand. It is important to consider what information and skills are required for youth to be innovative and contribute to the development of their communities & to get better prospects in the 21st century. Research found that a sets of cognitive, non-cognitive, and technical skills. Cognitive skills refer to basic mental abilities used to think, study, and learn, Non-cognitive skills refer to socio-emotional personality traits, behaviors, and attitudes, (also called 'soft' skills), whilst technical skills include business, ICT, and specialized skills (Burton, 2012). Education and skills training are critical to achieving competitive advantage. There exists a skill development gap because students are prepared for 21st century processes and institutions using legacy curriculum and methods suiting the 20th century. The objective of 21st century education should therefore be to develop expert decision-making and meta-cognitive strategies among students. To remain competitive, students need to engage in lifelong learning to update their education and job skills.

How teacher's can enhance creativity in students through meta cognitive strategies: Meta-cognitive endeavors refer to one's knowledge of the cognition as well as his ability to monitor cognition. Paris & Jacobs (1984) termed meta-cognition as 'reading awareness'. It has three dimensions namely evaluation, planning and regulation. Evaluation refers to the appraisal of the knowledge and includes proposition about the domain or 'knowing that'. Planning refers to the procedural knowledge, 'knowing how' (e.g., how to summarize the part one reads). Regulation refers to the monitoring and redirecting one's efforts to know when and why the various strategies should be used to accomplish different purposes. Deficiency in any of these dimensions of reading awareness may result in poor achievement of task taken up. Meta cognitive learning strategies which are used to oversee, regulate or self direct one reading processes. The reader has to regulate his learning by planning, monitoring and evaluating learning activities. He has to choose the strategies required, prioritize it, plan how to apply and when to apply and to what stage to apply. The student has to evaluate his own performance or check his own understanding. Meta cognitive strategies emphasize on self management, advance preparation, directed attention, selective attention and delayed production. It is a process of making the learning decisions conscious. Once the learner made aware of the task, he will continuously attend and monitor his learning process. Making the students conscious of the strategies will certainly enable them to use these strategies more effectively and efficiently.

To conclude, self regulation plays significant role in developing, modifying and enhancing ability to thinking creatively in students.

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