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Deciphering Creativity and Suggesting a Path to Nurture it

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ABSTRACT

Creativity, being an inherent trait like physical strength in the body, can be improved and developed. The present study recommends some definitive pedagogical initiatives that could be implemented by various universities and other educational institutions in order to promote creativity in young people in the country, after developing a thorough understanding of the subject. While analysing literature, this study seeks to decode the concept of creativity. Improving creativity as a skill set can be accomplished in several ways. There are many established techniques that encourage individuals to be creative, but long term increases in creative ability need consistent time and effort and cannot be imbibed from a single session or method. Grooming of abilities towards creativity must be viewed as a continuous and long-term effort, which needs to be mindfully addressed. The study concludes with proposing some established pedagogical techniques like Critical Thinking, Problem Based Learning, Experimental Learning, and the Creative Process which can successfully be deployed by educational entities

Introduction

Creativity is an intrinsic characteristic of human beings. Being an inherent one, like physical strength in the body, it can be developed and enhanced like strength and is regarded as measurable entity. It is defined as the ability (in an individual) to generate new as well as applicable ideas. These ideas should be quantifiable and be evaluated for external and internal divergence. Thus, we can decipher enhancement or improvement of one's creative abilities.

On one hand, it is the ability to generate new ideas and on the other hand it is the adaptation of these ideas by society at large. It is a critical skill in any country or domain. There are four different dimensions, that can be considered for evaluating creativity: at person level, at group level, at organizational level and at society level. Usually in practice, the creativity of an individual has been the predominant focus for research. This is an important skill at all scales of endeavours, whether large or small. It is also a skill that can be practiced, nurtured, taught and developed. The skill of creativity involves application of a challenging mental effort, which is being influenced by several

externalities like having a creative environment, good nutrition, and the ageless cycles of day and night.

An extensive study was conducted by the World Economic Forum (WEF, 2015) across ninety one countries. The study was longitudinal in nature spread over several years, with the purpose of examining pressing problems and gaps in skills. The results of the study indicated that there existed huge gaps between the skills possessed by students and the requisite skills for them to compete and prosper in the 21st century. The study revealed for the youth of today to thrive in this fast paced, technologically savvy world, students need to possess certain all important skills. They need to be good in basic numeric and literary skills as well as be equipped with critical '21st century skills` like creativity, problem solving, collaboration and communication.

Improving creativity as a skill set can be accomplished in several ways. Some well-known strategies encourage people to be creative, but long term increases in creative ability need consistent time and effort and cannot be imbibed from a single session or method. It is a complex skill and should be

considered at par with writing or research skills. Grooming of abilities towards creativity must be viewed as a continuous and long-term effort, which needs to be mindfully addressed.

This study attempted to decipher creativity by reviewing literature on the subject extensively. After developing a comprehensive insight into this subject, the study proposes some definitive pedagogical interventions which can be implemented by various universities and other educational institutions for nurturing and developing creativity in the youth of the country.

Review of Literature:

There have been a host of studies conducted on this all important skill set for the 21st century. According to Treffinger, Young, Selby, & Shepardson, (2002) personal traits, attributes and qualities that will differentiate an extremely creative person from their contemporaries, can be - producing ideas, sincerity and audacity to explore ideas. Reconnoitering and Scrutinizing i.e., enquiry alone is not indicative of creativity. Creative individuals represent their curiosity through not only exploration, but will also actively go around, search for, and discover more. A

globally established research on creativity was conducted by Torrance (1974, 1966). In his study, he explained four essential features by which a person's creativity can be recorded and measured: *fluency*- the capability to generate enormous number of ideas for a given problem; *flexibility* - the capacity to generate wide range of ideas; *elaboration* – capacity to elaborate an idea; *originality* - the capability to generate ideas that are uncommon, statistically rare, and are neither ordinary nor obvious. There have been other studies supporting Torrance's work like Runco, (2007) and Mc Crae & Costa (2008) who indicated in their studies that ingenious scholars possessed the traits of flexibility, openness to experience, adaptability, and urge for novelty, transformation and variety. As and when an individual develops the ability to identify multiple opportunities, it will improve the probability of finding appropriate ideas for solving problems creatively (Dellabarca, 2002; Morris, 2006).

In order to promote creativity, the need is to “provide opportunities for self-expression; time to develop ingenious thoughts and provide a safe haven for new creativity” (Amabile, 1997; Carlile and Jordan, 2012). Furthermore, there are studies by Jay and

Perkins (1997) demonstrating the intent for finding a creative solution in order to solve an ongoing problem. They believed that it is necessary that first the problem is identified and defined, before any solution is sought for it. Some researchers were of the view that the ability to identify problems was critical and played a vital role in enhancing creative thinking (Runco & Dow, 1999; Runco, 2007), which entails viewing a problem, comprehending a problem, defining a problem and thereafter attempting problem solving (Runco, 1999, 2007). In Jeffrey's (2006) opinion, problem finding displays inquisitiveness, attitude to explore, ability to question and an inclination for thinking about possibilities. Problem finding is accepted as a core concept of creativity (Craft, 2000, 2001) and possibility of thinking helps in developing creativity (Craft, Cremin, Burnard & Chappell, 2007). According to Mumford (2003), problem identification happens to be the most imperative stimulus for individual as well as organizational creative performance.

The terms *creativity* along with *creative capacity* have been at the epicenter for capturing the attention of researchers for long, primarily because of the reported importance of creativity in the form of 'social

capital' which is vital for fruitful contribution in this dynamic and information driven world (Craft, 2006; Florida, 2005; Mc William, 2008; Pink, 2005; Robinson, 2000). The definition of creativity has grown in its scope of inclusion. It has gone from the opinion of being an 'artistic person' to include a more holistic set of functional, societal and aesthetic qualities (Mc William & Dawson, 2008). A broad aspect of creativity refers to the process of generating unique and valuable ideas, which in turn would result in new products, services, or just processes useful for businesses and societies (Rogers 1954; Galotti, 1994; Kellogg, 1995; Solso, 1988; Amabile, 1983, 1996; Baer et al., 2003; Kachelmeier et al., 2008; Walton, 2003; Litchfield, 2008; Wu *et al.*, 2008a). Another description of creativity can be that it is a procedure of creating some unique and novel thing using ingenuity, articulacy and imagination" (Csikszentmihalyi, 2000).

Although on one hand creativity is an individual's ability to resolve problems and issues in his everyday life, but there is a community level aspect to it as well, which leads to innovative and significant discoveries benefiting the society at large and consequentially the planet and economy (Mellander, 2009). In order to enhance or

develop creativity of scholars, certain tactics can be deployed like new learning practices, suitable supervision and opportunity to try new things (Selby et al., 2005). Creativity is likely to flourish in any environment, where there is freedom to explore while working and also where there is appreciation and support for ingenuity (Amabile, 1990; Witt and Boerkem, 1989). It is independence that paves the way for self-sufficiency and originality (Albert and Runco, 1989). The EUA (2007) suggested that educational institutions should focus on some key tenets of creativity such as originality, future orientation, appropriateness, thinking outside the box and problem solving ability, while designing teaching methodologies.

Nurturing Creativity:

Although the importance of creativity for making the future workforce ready has been established, but there is still a noteworthy gap as far as the specific teaching and learning activities that will foster creativity are concerned. In order to address this issue, the UK Higher Education Academy designed an imaginative curriculum project for attempting to embed creativity-enhancing practices within education (Jackson, Oliver, Shaw & Wisdom, 2006). Reports by Craft

(2000, 2006), McWilliam (2007, 2008) which were directed at resolving this problem, attempted to develop creativity-focused and scalable pedagogical practices for the purpose of institutional adoption. There are however several complexities associated with moving the concept of creativity, which is ephemeral in nature to the realm of observable and measurable mainstream practice. The challenge lies not in the absence of creativity, in fact it is something which is universal, but in the process of imbibing and embedding the learning and assessment process.

It has become obvious that young graduates on the threshold of starting their career, already possess basic skills like reading and numeric ability, but most of them are lagging behind in cognitive skills such as inquisitiveness, ingenuity, critical thinking, and ability to identify and solve problems. The corporates are primarily seeking inquisitive candidates, who can hit the ground running and are on constant look out for new learnings and ideas. Purposeful thinking is considered to be an indispensable element of optimistic and socially cohesive conduct and it prepares people to face complicated aspects of life and career. The corporates also prefer that the workforce is

actively engaged in company initiatives and activities, whereas our findings revealed that majority of young graduate were laidback in their approach and preferred to remain disengaged, such an attitude can put them to risk (professionally) and may erode their career prospects.

In current scenario, where the entire world is reeling under the impact of the pandemic COVID-19, and experiencing the brunt of economic adversities and routine jobs are getting replaced by jobs that require analytical and interpersonal skills; fostering creativity amongst young people is an essential as well as a desirable skill set. There should be an enabling environment that allow learners to deepen their thinking and investigate further. This will encourage students to explore critically, review, synthesize and make new hypotheses and test the existing one.

A series of well-established and successfully implemented pedagogical interventions can be included in the teaching methodologies adopted by various educational institutions:

- ✓ **Critical thinking**-equips scholars to analyze and synthesize information and evaluate objectively for taking informed decisions. Karbalaei (2012) advocated that education should create critical thinkers. It should

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imbibe in students the capability to distinguish between trustworthy & untrustworthy information, make them become unprejudiced, allow them inter-relation and associations and help them generate and present strong arguments; help in exercising careful judgement (OED Online 2017). 4Cs framework can assist in developing critical thinking skills among students. The 4Cs comprise of content, communication, culture and cognition. Students should be encouraged to hold discussion on variety of topics, work in remarkably diverse groups, explore different context and culture, this would develop in them appreciable diversity, become mature and have empathy towards one and all. Students must realize their role in local as well as global community, be aware of the needs/ gaps/opportunities in both contexts, critically analyze, and propose a sustainable solution to a certain context cannot negatively affect surroundings. In addition, students have to be able to see and grasp opportunities for long-term growth without being detrimental to others (Enciso, Enciso & Daza, 2017).

Critical Thinking includes following:

- Identify the key problems, ideas, arguments, observations, conclusions?
What evidence is there? Distinguish

critical from other types of writing, like descriptive; fact from opinion; bias from reason.

- Look for evidences, assumptions and inferences drawn. Is there engagement with relevant, up to date research? How appropriate are the methods of investigation? Is there a consistent and logical line of reasoning? Do you agree with what's being said? Why? How is language being used (emotive, biased etc.)?
- Interpret the ideas, findings and observations. Evaluate their implications. Look beyond the reading and hearing.
- Reach conclusions on the basis of your reasoning. Illustrate your reasons with effective examples. (Wilson, M., 2009).

Critical thinking goes much beyond wisdom and aptitude and it also embraces creativity, change, sensitivity, compassion, integrity, responsiveness and perseverance. Critical thinking skills and subject matter are not mutually exclusive but complementary. Today the world needs individuals who can think critically and care about how to reinstate integrity, stimulate welfare, impartiality and social justice.

✓ **Experiential-learning**- is a technique which facilitates group work, peer-to-peer learning and peer feedback. This is a process which enables students to develop knowledge, values and skills from direct experiences, which are beyond a traditional academic set up. Experiential learning as a technique encompasses a vast array of activities including undergraduate research, internships, service learning, study abroad, and other professional and creative work experiences. Experiential learning programs that are planned well, supervised and assessed tend to stimulate academic inquiry because they promote interdisciplinary learning, career development, civic engagement, cultural awareness, leadership, and other intellectual and professional skills.

Experiential learning usually comprises all the following elements:

Critical analysis, reflection, and synthesis

- Presents opportunities to students for taking initiatives, making decisions, as well as being accountable for the results
- Students also have opportunities to engage creatively, intellectually, emotionally, physically or socially

- the learning experience is so designed that it includes possibilities to learn from natural consequences, successes and mistakes
- ✓ ***Problem-based learning (PBL)***: This method of learning refrains from direct fact and concept presentation. Instead it deploys complex real world problem scenarios, which are used as a tool for promoting learning of principles and concepts. According to Duch et al, (2001), PBL not only helps deliver the course content, but also promotes problem-solving abilities, critical thinking skills and communication skills. It provides opportunities for group work, evaluation of research material and learning that tends to last a life time.

Basically this method can be woven into any learning situation. It can be used to design assessment items, in lab and design classes. The common connecting thread here is the real world problem.

PBL can be deployed by any subject area with some creativity. However well-crafted PBL problems transcend subject domains (Duch, Groh, and Allen, 2001): The problem must encourage students to seek out a deep conceptual understanding; should require

participating students to come out with reasoned decisions with a rationale for them; the content should incorporate forward and backward linkages with previous knowledge; in case of a group project, a complex problem is needed so as to ensure group work by students to solve it; for a multistage project, the problem needs to be open-ended initially, so that the students are engaged and drawn into the problem. The source of the problems can be diverse like magazines, newspapers, journals, movies and books. Duch et al, (2001) have prescribed certain guidelines, for framing problems for a PBL centered class:

- Select a central idea, principle or concept, that is part of a given course, and thereafter frame an end-of-chapter assignment, problem, or homework, which can be assigned so as to enable students to learn that concept. The learning objectives to be met by the students can be clearly enlisted.
- There needs to be a real-world context, woven around the concept to be taught. A story may be constructed around a holistic problem or an actual case can be adapted and some problem solving motivation added for the students. The problem can either be simplistic or

complex in order to challenge the thought process of students.

- Usually the problem should be divided into stages so that students are able to decipher learning issues, research the relevant concepts and comprehend them in the process.
 - Finally the key resources for solving the problem need to be identified. Students normally go in for using the internet, hence it is always helpful for the instructor to guide them and suggest some appropriate resources.
 - A problem based learning approach usually uses permutations and combinations of three pedagogical tools: role-plays, case studies and simulations. Regardless of the pedagogical tools the techniques are woven around a real-world problem, which is at the heart. It helps students to connect theory to practice, inculcates an ability to identify gaps, fosters skills for problem solving, teamwork, and prepares them for real world challenges.
- ✓ **The Creative Process:** Creativity which allows imagination, inventiveness and calculated risk taking. Creativity will generally be defined as a complex, mental process employing numerous areas in the

brain that produces a product, often thought to be novel in nature.

Graham Wallas (1926) summarized the creative process in four basic stages:

- **Preparation:** The mind prepares for the creative solution, which requires study and thinking intently on the subject—whether it be a musical composition, a new invention, a mathematical formula, or a business dilemma.
- **Incubation:** A germination period follows: The person steps away from the problem and takes up some form of activity like daydreaming, walking, or meditating.
- **Illumination:** Often as a flash, a brilliant idea shoots across the mind, frequently during a mundane task or while one is involved with something else.
- **Verification:** The idea is tested to determine its validity. The composition is scored; the mathematical formula, proven.

Although variations of this creative process were developed over the last century, however, four-stage framework remains. Environments conducive for nurturing creativity includes freedom and encouragement to follow new leads spurred

by one's curiosity, lively interactions within the group to test out new ideas, the courage to abandon fashionable theories and paradigms, the provision of adequate resources for the necessary work.

An enabling environment would nurture in students *Creative Traits* such as:

1. **FLUENCY:** Fluency refers to the number of relevant responses (Torrance, 1974).
2. **FLEXIBILITY:** Flexibility refers to the number of different categories to which responses could belong. Flexibility represents a change in thought (Torrance, 1974).
3. **BRAINSTORM:** Divergent thinking, also referred to as brainstorming, is the production of numerous responses to a single prompt (Guilford, 1962; Osborne, 1963).
4. **ORIGINALITY:** Originality refers to the number of unusual, but relevant ideas as measured by the statistical infrequency of the idea (Torrance, 1974).

There is a need to break boundaries; help the organization achieve new heights, nurture absurd thoughts and create new foundations. There is a need to escape too much standardization and people need to create new path. Students should be able to evolve

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cutting-edge products, services, techniques, technology to resolve emerging issues and address new gaps. Education institutes should remove barriers such as bureaucracy, rules, conservatism, patterns that obstruct creativity; provide updated technologies, meeting rooms, material resources, laboratories, to facilitate exploration, discussion and idea generation (Alencar & Oliveira, 2016; WEF,2015). It is essential to empower the students and enhance their employability by allowing them to take performing arts, psychology, literature etc. along with their main domain. This would imbibe in them crucial personality traits and enhance their creativity which is greatly required for performing adequately as a professional (Louca, et.al., 2014).

Implications:

In order for all these path breaking pedagogical interventions to be actually implemented on a large scale, there is also a need for policy intervention which mandates higher education institutes to collaborate with government, private business and social entities. The objective of these interventions being to identify the bottlenecks and problems related to business, economy, society and environment and assign all the

identified issues as projects to group of students based on their domain knowledge. This creates awareness amongst students about recent challenges, helps them empathize with society and the environment at large. They will develop in them a sense of responsibility and accountability and apply their knowledge in the given context and come up with innovative ideas, test the idea, propose feasible solutions. This in turn will give them a sense of achievement if their proposed alternative is adopted by the respective entity.

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