



What Is Creativity and Why It Is So Important?

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Abstract

Education is among the most important rights of children, which straightforwardly affects the learners' life as it expands their awareness. This paper discusses how creative teachers encourage learners to think on their own so that not only their knowledge improves, but their interest, strength, team spirit and freedom of expression as well.

Subject Areas

Education

Keywords

Creativity, Intellectual Abilities, Knowledge, Thinking Styles, Personality, Motivation, Environment, Confluence

1. Introduction

Anderson believes that creativity is a process of production that involves various phases of evolution and its importance lies in the fact that creativity is a necessity of life [1]. It is an interaction of several mental, environmental, social and personal factors, and this interaction produces new solutions for practical or theoretical situations in any scientific or life field. Robert Frost says, "I am not a teacher, but an awakener." As such, it seems reasonable to suggest that education must rely on, encourage and enhance speaking, given that learners are said to be critical thinkers and not followers; cooks and not just tasters. Huxely points out, "Language has made possible man's progress from animality to civilization." [2] Which means that exceptional teachers awaken the learners' belief in themselves and encourage their curiosity and desire for knowledge. They encourage them to think on their own; so not only their knowledge improves, but their interest, strength, team spirit and freedom of expression as well.

Creativity empowers students in areas like, problem solving, realizing weak-

nesses, modifying results, creating unusual ideas, fluency, flexibility, elaboration, redefining and clarifying the problem.

This paper will clarify the importance of creativity in education, as well as, discuss fostering creativity in classroom, facets of creativity, and the limitation of creativity in classroom.

2. Definitions

Guilford defines creativity at the behavioral level as unusualness, innovativeness, statistical rareness, or even uniqueness of solutions to a given situation [3]. Joy Paul is an American psychologist known for his psychometric study of human intelligence. Guilford distinguishes among 5 kinds of operations: cognition, memory, divergent production, convergent production, evaluation, 6 kinds of products: units, classes, relations, systems, transformations, and implications, and 5 kinds of contents: visual, auditory, symbolic, semantic, and behavioral [3]. In his essay "Creativity: Yesterday, Today and Tomorrow," Guilford maintains that creativity involves different types of abilities which often do not correlate with each other [3]. Moreover, creativity and IQ correlate substantially only at lower IQ levels. He goes further to say that much work has been done in developing evaluative criteria for creative scientific production, and on teaching and learning creativity. "Future basic research should concern transformations, reclassification, elaboration, incubation, environmental conditions, and motivation", he says adding, "The social consequences of releasing creative abilities are potentially enormous."

According to Sternberg, creative individuals are willing and able to change good old ideas into brilliant new ideas [4]. Those individuals acquired sense of purpose and strategy. They are able to think beyond the moment, able to see the idea from all sides and to see all limitations. They look at the issue from all angles; look wider and think ahead. Creative individuals are not locked in the past or the present; their confidence is based on high-quality preparation irrespective of all sorts of distractions, and thus can smoothly overcome challenges and weaknesses. Sternberg incorporates different theoretical creativity theories in one framework [4]. For instance, in sports, tactical creativity is understood as the adequate, useful, varying, rare, and flexible production of tactical response patterns.

For further clarification, creative people have the ability to change normal things into outstanding things. Creativity and resourcefulness come through genuine determination, constant hours of hard work, adequate training, high-level objectives and months of practical experiences. It requires many things: intellectual abilities, knowledge, styles of thinking, personality, motivation, and environment. In order to have creative individuals, nurturers should start at early stages. Also, they should have a specified long term goal that fits with the person's aptitude and talent; they ought to smoothen the road to mastery through mental training. Unequivocally, one's culture/environment plays an

important role in developing his/her creativity; it shapes how individuals perceive ideas and how to translate these ideas into brilliant ones. Therefore, teachers have the ability to create individuals to become creative in no time, and good curricula will help teachers do so, too.

Schools' curricula should not be limited to particular ideas, which reduce human's creativity and spirit of imagination. Some institutions have curricula that narrow the students' intellectual interest and curiosity. However, good curricula manage to connecting language and art to science and technology. Some Japanese schools teach children how to involve in several types of activities, to have a strong sense of belonging in school, and not to feel like outsiders. Thus, it is essentially important to teach students to avoid feeling isolated, and to have an open approach of things as that will avoid fault knowledge, which in consequence causes misunderstanding and conflicts. Due to that, nurturers have to teach children not to be blind imitators. Because imitation creates weak, irresponsible and undisciplined individuals, it is teachers' responsibility to create thinkers, who are able to create new interesting ideas.

Nurturers should enlighten the child's mind by lots of sparkling and brilliant ideas, and not to rotate only around topics in language, literature, science, chemistry, sociology, history, economics, etc. Students need to accumulate different sorts of knowledge, and experience. Nurturers should saturate students' thirst to facts, intellectual ambition, and relentless quest for exploration. In the 21st century and in light of increasing dependence on information and rapid innovation and investment in knowledge, it is no longer accepted from educational institutions and nurturers to build walls of confusion around the students.

3. Fostering Creativity in the Classroom

Model Creativity

Csikszentmihalyi started that creativity emerges and flourishes in a supportive "congenial environment" [5]. A congenial classroom is one where all learners are welcomed, despite their difference. That is why teachers should take their time to understand students' needs. They should recognize that students are more than just being academic tool. They should know about their interests, notice their behavior, and get insights on their backgrounds and lives. By that, the learning process becomes a product of cherished relationship, where the learners are the focus. Csikszentmihalyi claims that new ideas are needed more than ever if the planet is going to survive, and the best ones are likely to come from the genuinely creative people [5]. He believes creativity is a central source of meaning in our life.

Fostering creativity in the classroom should be the focus of every teacher's educational journey. Teachers must design the environment that suits this kind of journey. They should design classroom space for exploration, arts and discussion. In his book "*How to Think like Leonardo Da Vinci*", Gelb claims that each individual is gifted with unlimited potential for learning and creativity [6]. He

presents Da Vinci as an example, as his curiosity led him to become creative person. Gelb based his insights on Leonardo Da Vinci's experience to come up with seven Da Vincian principles: Curiosita, Dimonstrazione, Sensazione, Sfumato, Arte/Scienza, Corporalita, Connessione; which he believes are the essential elements that help individuals uncover hidden abilities, expand their minds, and help them accomplish more than they thought they could [6]. These elements are to be used by teachers during the teaching process to help students become creative individuals.

Curiosita is an insatiably curious approach to life, about everything. Gelb asks, "What can we all do to enliven and enrich our curiosity?" [6] The most common replies are in times and places where people tend to be relaxed and calm, as being overly busy and stressed does not naturally foster curiosity, *i.e.* creativity.

Dimonstrazione is a process of testing how much students' know through their experience, or through the way they demonstrate things related to their own experience. Gelb adds that teachers should teach students how to cut through the loads of information and think for themselves, and to create new insights and/or solutions [6]. They should encourage students to view the challenges from different perspectives and to filter out the many distractions that surround them.

Sensazione is the continual improvement of the senses, especially sight, as the means to clarify experience. Da Vinci believed that mindfulness is the key to sharpening our senses as we get older. Gelb goes further to say that a mindful contemplation of beauty every day is also the secret to enjoy our lives [6]. He deems that a creative person trains his sensory awareness just like an Olympic athlete trains his body for competition. Then he invites the readers to ask themselves, "How can I make my life more beautiful every day?" According to that, teachers should train the students' sensory awareness with relevant activities.

Sfumato is a willingness to embrace ambiguity, inconsistency, and uncertainty. Gelb considers that highly creative people have an ability to embrace the unknown, to solve the unsolvable, and to face the inconsistency [6]. This technique is not going to help individuals depend on themselves to solve their problems if they stick to established solutions, beliefs, or norms when they face complicated problems. Therefore, they will never yield to innovate.

Arte/Scienza means balancing apparent opposites between science and art, logic and imagination, which give individuals a comprehensive view of the world and allow them to think with their whole rather than just a portion of their mind. Gelb supposes that brilliant people tend to have a hobby involving both arts and crafts; as through developing a balance, they are more likely to have an artistic pursuit than any average person does [6].

Corporalita is the cultivation of ambidexterity, fitness, and poise. Gelb maintains that just as we balance the different parts of the mind, we must also balance our body and mind in order to preserve our health [6]. Da Vinci's extraordinary physical gifts complemented his intellectual and artistic genius; he was renowned for his poise, grace and athleticism. Furthermore, various scholars sug-

gest that his passion for anatomy was a reflection of his own extraordinary physique. This choice; however, has an effect on our wellness and creativity.

Connessione is a recognition and appreciation for the connectedness of all things and phenomena. Gelb says that unorganized ideas, thoughts, and information will block creativity [6]. Therefore, the key to making progress on a big task is to firstly generate, then organize, *i.e.* to be aware of the big picture from the outset.

According to a psychological study posted by Daves [7], one way to foster creativity at school is through asking each student to keep a notebook called “Da Vinci” along. It was revealed that students who used such notebooks jotted down bright ideas about space, atoms, the brain ... they were interested in, tried creative exercises like solving problems, and even practiced drawings and composed poems. The notebook opened a door for intellectual development and boosted potentials for new interests. Moreover, teachers were eagerly willing to join the creative chaos of their students in order to urge them to go on.

4. Congenial Environment

One of the best ways to promote creativity among students is to create an actual space for exploration. Researchers have confirmed that the negative environment affects the learning process tremendously. The lack of motivation among students is mainly caused by such hasty environment. The blame for a lack of innovation can be traced to the current traditional schools’ standards, which suppress learning and leave no room for creativity. It is not so difficult to promote a positive environment that makes students eager to learn, explore, and be more creative. We start with the school standards to focus on developing congenial environment. Then we help teachers become experts in enhancing creativity in classrooms. Teachers should educate themselves, and equip themselves with all the skills that help them proceed.

Gather all kinds of resources and use all kinds of techniques that make the students use all their strength in order to find the answer or the solution. Provide students with the activities, tools, and models that make them use parts of their brain, activities that help them create a wide imagination, activities which involve both arts and science to come up with new brilliant ideas and to use all kinds of models that boost explorations.

According to Fleith [8], a classroom environment that enhances creativity should provide students with choices, explore different ideas, boost self-confidence, and focus on students’ strength and interests. Thus, teachers must think of creativity as a part of the learning process, starting from the bulletin board to the creative solutions to real world scenarios. Teachers should be equipped with the most latest and effective strategies in teaching. They should understand that creativity is a skill that needs to be mastered. Teachers should gather all kinds of resources that help them with the creativity process. They should work on building confidence among students, encourage curiosity, explore different ideas, and different scenarios. They should teach students to use divergent think-

ing. According to Runco [9], divergent thinking reflects on how students can rely on different associations and thoughts to approach a certain problem. Indeed, the changes should start right away by changing the educational systems into ones that adopt innovation and embrace creativity as an essential part of learning.

5. Creativity Assessments

Another issue school systems should address along with the creativity environment is to assess the teaching and the learning process. They should assess the process to enforce ongoing improvement. One of the most widespread assessments used to evaluate creativity among students is the Torrance Tests of Creative Thinking (TTCT), which is a series of figural (thinking with pictures) and verbal activities (thinking with words) to showcase students' creative skills. Paul Torrance, who is widely known as the father of creativity, dedicated 60 years of his life to develop ways to assess creativity in education. His research has helped make a better world through the focus on the development of creative potential of individuals of all abilities and ages. Torrance performed an extensive meta-analysis that measured the most helpful techniques to teach creativity to conclude that the most successful one incorporates cognitive and emotional functioning.

6. How to Foster Creativity in Classroom

Teachers' Characteristics

Creativity is connected to intellectual abilities, motivation, knowledge, personality, and environment. Teachers play a major role in teaching creativity. They should adopt the strategies that support creativity among students. Such strategies are solving problems, exploring multiple options, learning inquiry, depth understanding, enhancing imagination, and using all areas of the brain. Along with the strategies, they should have the attitude that enhances motivation and positive emotional attitude in class. Creativity requires a safe and supportive environment where students are able to exercise autonomy, take risk, make mistakes, have a safe conversation, ask a variety of questions, get all kinds of answers, and have feedback and encouragement. Teachers should be equipped with different types of abilities, skills, techniques, strategies, and attitudes. They should be able to model creativity in everything they do. The way they move, speak, talk, solve problems, dress up, make decisions, express feelings, react to negative attitudes, and the way they make choices all count. Teachers have the ability to teach life lessons; they teach students to have honest self-assessment and to become independent learners. Teachers should teach students to provide different kinds of solutions, face all kinds of challenges, deal with uncertainty, limit competitions and comparison among students enhances self-improvement and monitor students through the whole learning process. They have to teach with effort and patience and reflect important values. They also have to teach

students to imagine and re-imagine, do and re-do things, think and rethink, build and rebuild, write and rewrite until they come up with the best options. In addition, they have to teach students to perceive the world around them in too many different glasses. Teachers will have to surround learners with suitable moods to interpret, imagine, draw, design, paint, visualize, capture, simplify, complicate, and play with ideas until they exhaust the final product. Teachers should model ways of thinking among students. Express ideas in a way that motivate students to put all the effort to come up with different solutions. Whether teachers are teaching art, math, biology, history, technology, sports, geography, etc., they should express information they provide to students with passion, love, and care. Passion and positive energy are contagious. A study in the *Journal of Positive Psychology* claims that engaging students in creative activities such as playing musical instruments, knitting, or designing can lead into a more positive state of mind.

Moreover, teachers should attain specific characters to enable them to teach and live creatively. They should master different techniques to approach different situations in life. They should impose a creative spirit in every aspect in their life. According to Sternberg [10], creativity is not about innovating or making arts, but it is about learning how to live creatively. That is why they should reflect creativity in their lesson plans, in their rituals, in the ways they perceive the world around them, and in the way they deal with conflicts and problems. They should teach students to treat errors, risks, and failure as opportunities for immense success. They should treat patience, time, and commitment as sacred. Beyond the good performance, creativity makes learning more interesting. Traditional teachers make the learning process boring. So students will feel impatient towards the final result.

7. Creativity and Education

According to Collard [11], “Creative skills aren’t just about good ideas, they are about having the skills to make good ideas happen.” He suggests that creativity is related to: imagination, self-motivation, resiliency, collaboration, in addition to assigning responsibility to students. Collard is the Chief Executive of “Creativity, Culture, and Education” (CCE), an organization responsible for delivering the major creative educational programs for young people in England [11]. He has 25 years experiences of delivering programs that use creativity and culture as drivers of social and economic change. The CCE’s main focus is to unlock the creative potentials of young people and to enable them to access world-class cultural opportunities. Research has shown that CCE’s programs have succeeded in boosting young people by raising their aspirations, improving their motivation, and increasing their attendance at school.

Creativity is often obvious in young children, and it may be harder to find in older children and adults because their creative potential has been suppressed by a society that encourages intellectual conformity. Creativity is a decision and an

attitude. It is also a matter of ability. Yet, anyone can decide to be creative. In a research that has been done, 63 people were asked to create various kinds of products. They were asked to create products in the areas of writing, art, advertising, and science. In writing, they received choices of titles to choose from, then to write very short stories. In art, participants were asked to produce art compositions with titles such as “The Beginning of Time” or “Earth from an Insect’s Point of View.” In advertising, they were asked to produce advertisements for products from different brands. In science, they were asked to solve problems such as one asking them how people might identify extraterrestrial aliens. Participants created two products in each field. Researchers found some correlations among domains. For example, someone may be strong in one or more areas. In other words, they found a possible relationship between non-entrenchment, task novelty, and creative thinking ability. The research on creativity has helped raising these questions:

- 1) To what extent was the thinking of the individual novel or non-entrenched?
- 2) What was the quality of the individual’s thinking?
- 3) Does the thinking of the student meet the demands of the task?

These questions can be used for further research by scholars who are interested in this field.

The final result of the research proved that creativity is relative although not wholly domain-specific. The conclusion of their research is that these components are the facets of creativity: intelligence, knowledge, thinking styles, personality, and motivation.

8. Facets of Creativity

8.1. Intellectual Abilities

Intellectual skills are very important to enhance creativity among students. Sternberg stresses the importance of intellectual skills as they incorporate three chief abilities: synthetic ability, analytic ability and practical-contextual ability, and the convergence of these three are significantly important [12]. Firstly, the synthetic ability means seeing problems in a new way and escaping the bounds of conventional thinking. If the synthetic ability is used in the absence of the other two abilities, it may result in new ideas that are not subjected to the analysis. Secondly, the analytic ability means recognizing which ideas are worth pursuing and which are not. If the analytic ability is used in the absence of the other two abilities, it may result in powerful critical, but not creative thinking. Thirdly, the practical-contextual ability means how to persuade others of the value of our ideas. If the practical-contextual ability is used in the absence of the other two, it may result in the transmittal of ideas, not because the ideas are good, but rather because the ideas have been well and powerfully presented. To be creative, one must first decide to generate new ideas, analyze these ideas, and then pass these ideas to others.

8.2. Knowledge

Knowledge is another facet of creativity. Concerning knowledge, the learners need to know enough about a field to move it forward as they cannot move beyond if they do not know where they actually are. Extensive reading provides opportunities for learners to build and elaborate their background knowledge. Knowledge about a specific field only results in a closed and entrenched perspective, and thus learners will not move beyond the way in which they have seen problems in the past [13]. Accordingly, learners need to decide to use their past knowledge, but also decide not to let the knowledge become a hindrance rather than a help.

8.3. Thinking Styles

A key component of creativity tool is thinking styles. With regard to Sternberg and Zhang [14] [15] [16] [17], thinking styles, a legislative style, is particularly important for creativity that is a preference for thinking and a decision to think in new ways. This preference needs to be distinguished from the ability to think creatively. Someone may like to think along new lines, but not think well, or vice versa. It also helps, to become a major creative thinker if one is able to think globally as well as locally, distinguishing the forest from the trees and thereby recognizing which questions are important and which ones are not.

8.4. Personality

Personality is a very important issue in creativity. Numerous research investigations [18], Lubart [19] and Sternberg [4] have supported the importance of certain personality traits for creativity. These traits include willingness to overcome challenges, willingness to take risks, willingness to tolerate ambiguity, and self-efficacy. In particular, buying low and selling high typically means defying the crowd, so that one has to be willing to stand up to conventions if one wants to think and acts in creative ways. Note that none of these attributes is fixed.

8.5. Motivation

Motivation is one of the most important concerns in creativity. Intrinsic task-focused motivation is essential to creativity. The research of Amabile [20] and others has shown the importance of such motivation for creative work and has suggested that people rarely do truly creative work in an area unless they really love what they are doing and focus on the work rather than the potential rewards. Motivation is not something inherent in a person: One decides to be motivated by one thing or another.

8.6. Environment

Another primary issue in creativity is environment. Environment that is supportive and rewarding of creative ideas. One could have all of the internal resources needed in order to think creatively, but without some environmental

support (such as a forum for proposing those ideas), the creativity that a person has within him or her might never be displayed.

8.7. Confluence

Confluence is very helpful in creativity. Concerning the confluence of components, creativity is hypothesized to involve more than a simple sum of a person's level on each component. First, there may be thresholds for some components (e.g., knowledge) below which creativity is not possible, regardless of the levels on other components. Second, partial compensation may occur in which strength on one component (e.g., motivation) counteracts a weakness on another component (e.g., environment). Third, interactions may also occur between components, such as intelligence and motivation, in which high levels on both components could multiplicatively enhance creativity.

9. Conclusion

Tapping into multiple intelligences is the key of creativity as it requires working on and using different parts of the brain. Torrance's studies suggest that creativity considers all: communication, comprehension, listening, writing and reading skills. Besides, the cultural context is an excellent vehicle for inspiring creative thinking and endeavors. Collaboration between cultures produces unique and novel ideas in accordance to a report prepared for the European commission, which reflects on how creativity constitutes a central force that shapes our culture. The report emphasizes that with the changing times, our society enriches our cultural-based creativity. Using collaborative creativity, that is multidisciplinary approaches, fosters solving problem skills. Creative teaching often requires bridging connections between seemingly unrelated areas to initiate new concepts, reflections, ways of approaching dilemmas, and solving controversial problems.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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