



**INTERNATIONAL JOURNAL OF RESEARCH –
GRANTHAALAYAH**
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Social

**DEVELOPMENT OF CREATIVITY: INTERPLAY OF BIOLOGICAL,
PSYCHOLOGICAL AND SOCIAL FACTORS**

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ABSTRACT

One of the most common goals of the education system throughout the world refers to the development of a creative personality that could easily adapt the fast changes that are occurring in modern society. Creative attitude is regarded as the foundation stone for creative personality. Therefore, the study of factors like: biological, psychological and social that influence pupils' creativity and creative attitude occupies a significant place within the contemporary research. In this educational context, this paper is centered on the factors affecting student's creativity and aimed to find out the factors related to teachers, students and instructional environment. For this, the researcher used content analysis method and studied previous researches conducted to find out the influencing factors of creativity. The results indicate the key factors that can affect learner's creativity as: factors related to teacher are personal quality, thinking style, educational experience, teaching belief, personal effort, intrinsic motivation, professional knowledge; factors related to students are fear to failure, cooperation and collaboration, family factor, competition and conflict and factors related to instructional environment are autonomy, administration support & resources and peer interaction.

Keywords:

Creativity, Biological Factors, Psychological Factors & Social Factors.

Cite This Article: Swati Gupta, "DEVELOPMENT OF CREATIVITY: INTERPLAY OF BIOLOGICAL, PSYCHOLOGICAL AND SOCIAL FACTORS" International Journal of Research – Granthaalayah, Vol. 3, No. 12(2015): 195-202.

1. INTRODUCTION

Education is one of the greatest services provided by teachers. The role played by teachers is very important as they work in close co-ordination with students to help them in builds up their future. They mould the students to sharpen their skills, teach good habits and help them to be a good citizen of the nation. Thus, they play a role of nation builders. Due to technological progress and globalization, rapid changes are occurring in the modern society. In this fact changing society, individuals are confronted with new problems and in order to deal with these problems, one needs a well-developed capacity to adapt new situations and to find new ways to

do things. In this context, creativity proves to be a very important resource that might help individuals to deal in a better way with social and technological changes (Kothari Commission, 1964-66).

Creativity is the capacity of a person to produce compositions, products or ideas which are essentially new or novel and previously unknown to the producer (Drevdahl, 1956). Shakespeare defined creativity as the divine spark which makes the man paragon of animals. It is a mental process resulting in the production of ideas. Mental processes involved in creativity include: insight, intuition, imagination and heuristic search (Gupta & Jan, 2013; Singh et al., 2011). Good teachers recognize the importance of creativity and inventiveness. Creative teachers see the development of creativity and originality as the distinctive mark of their teaching process. In order to be creative, a teacher should widen his understanding of his own creativity, the imaginative approaches and repertoire of engaging activities that he can employ in order to develop the students' capacity for original ideas and action (National Curriculum Framework for Teacher Education, 2009). Thus, the role of the teacher is vital in guiding students how to be creative and innovative.

Despite constant changes in student-teacher interaction and continuous innovations in teaching methods, some obstacles are still remained in the implementation of creativeness in teaching-learning process. The majority of teachers still rely heavily on classroom lectures and blackboard demonstrations; most of them lack either the ability or the will to develop and utilize diversified, innovative ways of teaching. This gives the indication of how much creativity is neglected in school education. Therefore, it is utmost important to investigate and understand how creativity can be more widely developed among individuals and effectively used by teachers in order to promote higher order thinking skills in students (Gupta & Jan, 2013). Thus, it is necessary to identify the barriers and challenges that hamper the creativity of students and teachers and find out necessary solutions to overcome these obstacles.

2. RESEARCH OBJECTIVES

The objectives of the paper are:

1. To explain the factors related to teachers that affect creativity.
2. To explain the factors related to students that affect creativity.
3. To explain the factors related to instructional environment that affect creativity.

3. RESEARCH METHOD

In present paper, the investigator has used content analysis method, because it is the most adequate method to fulfill the aims of this research. Various researches, articles, committee reports, documents, University reports and National Curriculum Framework etc. were studied to find out the influencing factors related to creativity and its development. These factors are categorized into three categories: (1) Factors related to teachers that affect creativity (2) Factors related to students that affect creativity (3) Factors related to instructional environment that affect creativity. The following paragraphs describe the factors that have significant effect on the creativity among learners.

3.1.FACTORS RELATED TO TEACHERS THAT AFFECT CREATIVITY

(i) Personal Quality: It has been a widely supported argument that personal qualities or personality traits affect the development of creativity in individuals (Amabile, 1988; Petrowski, 2000; Woodman & Schoenfeldt, 1989). Grainger et al. (2004) reported that confidence, enthusiasm and commitment are common qualities in creative individuals. Eysenck (1995) Matthews & Foster (2009) also found that cognitive style and personality could be major predictors of creativity.

(ii) Thinking Style: Cheng (1999) studied the creative thinking of outstanding teachers in science fairs, and found that teachers in the winning teams have higher levels of personal strengths, innovative thinking, capabilities, an acute instinct, self-confidence, divergent thinking and a broad-ranged experience. The teachers who have innovative ideas both during their school days and in their current teaching jobs, they are very good at relating daily objects or happenings to their lesson plans or applying them to teaching.

(iii) Education and Career Experience: The teachers having a rich and diverse background in both education and work experience are able to teach the class effectively. Gurney (2007) found teacher knowledge; enthusiasm and responsibility for learning are key factors for creative teaching. The teacher who is willing to share his knowledge unconditionally will be stepping towards the effective classroom.

(iv) Teaching Belief: According to Chin, Leu & Lin (2000), teaching beliefs have relatively strong emphasis on people rather than knowledge. A number of scholars (Anderson et.al., 1995; Joram, 1998) also believed that creative individuals have a well-developed set of beliefs about learning and teaching. Generally, they give value to self-expression, sharing, and communication abilities. The teaching of these kind of teachers is directly guided by their teaching beliefs, and to them creative teaching is a tool to attain their teaching ideals.

(v) Personal Effort: Esquivel (1995) in his study found that individuals having training in creative methods and activities are more likely to show a receptive attitude and behaviour toward students' creativity. Simplicio (2000) pointed out that creative teaching requires hard work and the teachers introducing and carrying out new methods into their day-to-day teaching, all spent a massive amount of time and effort in planning and preparation in advance.

(vi) Teacher's Knowledge: Csikzentmihalyi and Wolfe (2000) considered the knowledge as one of the six influencing factors of creativity in Sternberg & Lubart's (1995, 1996) investment theory of creativity, or the domain-specific knowledge proposed in the social psychology of creativity by Amabile et al. (1993) and Amabile (1996). It is clear that domain knowledge is one of the necessary conditions for the development of creativity.

(vii) Intrinsic Motivation: In the book "The Art of Teaching", Hightet (1958) commented that being a good teacher, one should follow some formulae of teaching, as he should love teaching and have high intrinsic motivation for it.

3.2.FACTORS RELATED TO STUDENTS THAT AFFECT CREATIVITY

(i) Fear to Failure: Khandwala (2004) found in his study that fear to failure is one of the factors that affect creativity. From the childhood, success is rewarded and failure is punished; so some of students develop an exaggerated fear to failure. Such individuals are likely to avoid competitive situations, i.e. situations in which they are likely to be compared with others. They

freeze to speak in competitive situations. Thus excessive fear of failure prevents students to act at their best.

(ii) Collaboration and Cooperation: Collaboration is commonly seen as a condition for creativity and innovation (Sawyer, 2007). Rarely, one individual is able to come up with original ideas that have value without interacting with others. Therefore, one of the key conditions for creative schools is collaborative culture that includes professional collegiality between teachers and cooperative learning among students. Collaboration and cooperation in school build strong social community that can strengthen trust, interaction between teachers and students and lead to enrich environment where each individual through interaction with others will be able to create more novelty than they would do alone.

(iii) Competition and conflict: Robinson (2001) and Sternberg (2006) found competition and conflict as influencing factors for the creativity of students. Torrance reported that the greatest obstacles to creativity are:

- a) lack of opportunity to use ideas or what has been learned,
- b) lack of interest in the problem,
- c) lack of challenge to one's best abilities,
- d) lack of change to do things in one's own way, and
- e) lack of purposefulness and team work.

(iv) Family Factor: A great wealth of literature has pointed out family as one of the influential factors of creativity development. Family environment can affect the development of creativity in children through family structure, socio-economic status, parenting style, parent-child relationship, family atmosphere, parents' expectations, and sibling relationship (Feldman, 1999). According to Yeh, Wu, & Cheng (2000), Gruber and Wallace (1999) and Abdulrab & Sridhar (2012) the creative role models provided by parents and parents' support and praises for creative performance are the key family factors that contribute to the development of respondents' creativity.

(v) Motivation: Collins & Amabile (1999) argued that existing theories and empirical studies are mainly based upon the belief that creativity is generated by a sense of happiness and satisfaction derived from participating in creative activities. Petrowski (2000) also noted that creative people usually possess an intense love and enjoyment in the things that they do. All these fall into the realm of intrinsic and extrinsic motivation.

3.3.FACTORS RELATED TO INSTRUCTIONAL ENVIRONMENT THAT AFFECT CREATIVITY

A number of studies have been conducted to know how instructional environment affects creativity. On the basis of previous studies, these are the factors related to instructional environment that affect creativity.

(i) Autonomy: Kolb (1984) proposed in a study that the provision of autonomy to members improves the creative performance of the organization and Yang (2000) observed that if the individuals are autonomous, the more likely they are to be creative.

(ii) Administrative Support and Resources: The administrative support and resource availability however varied from school to school but Miel (1961), Cheng (2003) suggested that school administration and supervision should create a professional atmosphere, an accepting and harmonic climate, encourage staff learning, provide opportunities for decision making and encourage cooperative evaluation. In terms of administrative support, it was found that teaching

was greatly influenced by some school administrator (director, principal) in the past and school leadership's ensuring of full empowerment and providing of active support were the main things which motivated teachers to engage in creative teaching and guided them toward professional growth.

(iii) Peer Interaction: As regards peer interaction, Rehm (1989) and Jaussi & Dionne (2003) found in the study that interaction between teachers have positive influence on teachers' creative teaching. The majority of the creative teachers confirmed the value of member interaction in the teaching research group and its positive influence on brainstorming result, creative idea generation, teaching strategy employment, and professional growth. They stressed the importance of partnership, discussion and feedback between one another to grow together.

4. CONCLUSION & SUGGESTIONS

This study identified some factors that can affect creativity, its development among learners and creative teaching. They are personal quality, thinking style, family factor, education and career experience, teaching belief, personal effort, motivation, teacher's knowledge, fear to Failure, collaboration and cooperation, competition and conflict and environmental factor and these are interrelated with each other. In addition, social interaction, creative performance, and creative experiences all can influence creativity and teachers' creative teaching behaviours.

Idea sharing, knowledge sharing, and experience as the key factors for the enhancement of teachers' creativity. Therefore, teacher preparation institutions should provide diverse creative experiences to their students through student clubs or other forms of activities. In the meantime, the organization of teaching research groups, creative teaching awards, and creative teaching workshops should be encouraged, and the members, participants, or guests of these organizations and activities should not be limited to people in the field of education. Instead, dialogues and exchanges between members and students across a wide range of disciplines should be promoted that often help to generate more and better creative ideas and strategies.

Since school administrators and organizational culture both play an indirect role in enhancement of creativity among students and teachers so training programs for school should focus more on the enhancement of creativity and to develop necessary skills and abilities to create an organizational culture conducive to the creativity cultivation in both teachers and students. Also, considering the fact that teacher's knowledge, beliefs, and educational experiences all are major factors affecting creativity so the course design for both pre-service teacher and in-service teacher should incorporate such elements as creative course development, creative teaching design and strategy application, and teaching belief (value) formation. They should cultivate mentors and seed teachers who possess a positive role-model effect and arrange them to teach classes or to demonstrate for other teachers, thereby helping other teachers to identify the values of creativity.

In future, further researches may be conducted to study the attitude of teachers towards creativity and creative teaching, barriers or difficulties that teachers face during creative teaching, creativity and its effect on academic achievement of students in relation to certain demographic variables etc.

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