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# Creative and Critical Thinking as Correlates of Academic Success of College Students of Punjab

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**Abstract:** This research uses a normative survey to find out the contribution of creative and critical thinking to academic success of college students. This study is based on data of 379 (187 male and 192 female) college students of degree affiliated with Panjab University, Chandigarh. Life skills assessment scale (Nair, Subasree and Ranjan, 2010) was used to assess creative and critical thinking, whereas academic achievement in the graduation examination was used as academic success of college students. The descriptive statistics revealed that college students were above average in creative thinking ( $M=28.74$ ;  $SD= 4.28$ ;  $Range= 8-40$ ) and critical thinking ( $M=37.56$ ;  $SD= 5.19$ ;  $Range= 11-55$ ), though had quite high level of academic success  $M=74.52$ ;  $SD= 4.93$ ;  $Range= 6-83$ ). The correlation analysis indicated positive and significant relationship of academic success with creative thinking ( $r= 0.347$ ;  $p<.01$ ) and critical thinking ( $r= 0.398$ ;  $p<.01$ ).

**Keywords:** Academic Success, Critical Thinking, Creative Thinking, College Students, Correlation and Regression

## 1. INTRODUCTION

While going through ever changing environment and challenging situations of 21<sup>st</sup> century, life skills have emerged to play a crucial role in navigating complex social situation which determine academic success. Life Skills training, as delineated by Hamburg (1990) encompasses skills necessary for survival, interpersonal interactions and success in a complex society. Nelson Jones (1993) regards life skills as personal choices that promote mental wellness, while the Targeting Life Skills Model characterizes them as skills contributing to a productive and satisfying life (Hendricks, 1998). Life Skills are abilities for adaptive behavior that enable individuals to deal effectively with the demands and challenges of everyday life (WHO, 2001). Life Skills-based education focuses on the development of critical thinking, analytical thinking, and negotiation skills in managing information, knowledge and experiences in various areas of life (Kauts & Saini, 2022). Critical thinking and creative thinking are the two important innovations in various aspects of life and ensure academic success. These two skills are most desirable skills for all professional fields and academic disciplines.

To foster creative thinking in the field of education, it is mandatory to involve diverse manifestation of innovation, from generating entirely new ideas to applying unique problem-solving approaches. Creativity is interpreted as the potential to produce novel and innovative ideas, to build upon existing concepts so that to create and combine disparate elements. Creativity often blossoms in a state of consciousness, where individuals are open to experiences, ideas, and inspiration, in a very relaxed or passive state. Van Hook's described creativity as process which is intrapersonal and interpersonal, leads to the development of original, high quality and genuinely significant products. The more openness to ideas and a willingness to explore the unknown are essential components of this whole creative process. In the field of education during 1990's creativity gained global recognition, evolving from an artistic trait to value-based skills across multiple disciplines. Creative thinking encompasses generating innovative ideas and solutions by leveraging problem-solving skills that draw upon linguistic, mathematical, musical, kinesthetic, logical and interpersonal intelligence. Creative thinking plays a pivot role in pupil's success, enhancing their academic

performance and future job prospects in a competitive world. However, it highlights that the relationship between creativity and academic achievement yields mixed results. Creativity is viewed from two main perspectives- one is mental capacity that primarily focused on cognitive processes, or personality-based skill influenced by factors like cognitive abilities and motivation. It is multidimensional in nature that combines personality traits, cognitive abilities and motivation.

Critical thinking is a crucial factor that impacts academic achievement, and its application is most important factor for success in today's fast-paced world. Critical thinking is essential component of education- at all level, that boost cognitive processing, higher -order thinking and academic achievement. While creative thinking embodies a relaxed open, playful approach and is less ordered skill. National Education Policy lays emphasis on the development of the creative potential of each individual, in all its richness and complexity (NEP-2020). Critical Thinking is “an effortful and deliberate cognitive process that entails reflection on and evaluation of available evidence.”( Wentzel, 2014) quoted in Woolfolk (2019).The National Education Policy (NEP) 2020 focuses on the holistic education, recognizing the significance of life skills alongside academic knowledge. NEP 2020 advocates for the inclusion of life skills education in the school curriculum, encompassing critical thinking, problem-solving, communication, collaboration, creativity, and emotional intelligence. The policy encourages experiential learning, allowing students to learn through hands-on activities and real-life experiences. It promotes a flexible curriculum, vocational education, and early childhood care and education (ECCE) to nurture individual talents and skills. NEP 2020 envisions a shift in the assessment system towards competence based assessments, emphasizing the application of skills, including life skills. While the implementation is gradual and may vary across states, the policy sets a foundation for fostering holistic development and practical skills in students.

Academic success had increasingly become a focal point of concern worldwide, particularly in response to the growing demand for competencies (Hudson, 2019). A study by Hogh and Hilke (2021) found that the lack of quality learning materials was a significant barrier to students' academic success. In the United Kingdom, a considerable number of students struggled to meet educational standards, leaving a significant gap between their knowledge and what was required for higher education and professional success (Lynam et al., 2021). Research in the United Arab Emirates showed that many students pursuing higher education struggled to achieve high levels of academic success (Moussa & Ali, 2021). There is a need for a more accurate focus on cognitive and trait creativity and their impacts on academic achievement (Surapuramath, A. K.; 2014).

## **2. OBJECTIVE**

- 1.) To study relationship of academic success with creative thinking and critical thinking of college students of Panjab.
- 2.) To study predictions efficacy of critical thinking and creative thinking to determine academic success of college students of Panjab.

## **3. HYPOTHESES**

- 1.) There will be significant and positive relationship of academic success of college students with creative thinking and critical thinking.
- 2.) Critical thinking and creative thinking will be significant predictors of academic success of college students of Panjab.

## **4. METHODOLOGY**

The descriptive method of research was used for the present study which focused to explore the relationship of academic success with creative thinking and critical thinking.

### **Universe and the Sample of the study**

The universe of the study consists of college students of Panjab. This study is based on data of 379 (187 male and 192 female) students of degree colleges affiliated with Panjab University, Chandigarh.

**Tool Used:** Life Skills Assessment Scale (Nair, Subasree and Ranjan,2010), measuring 10 life skills including creative thinking and critical thinking.

**Statistical Techniques:** Descriptive statistics along with such as partial and multiple correlation was used computed to explore the relationship of academic success with creative thinking and critical thinking.

**Results:** The means and SDs of creative thinking, critical thinking and academic achievement to assess academic success along with their interrelation are given in Table I.

**Table 1.** Correlation Matrix: Academic Success, Creative Thinking and Critical Thinking(N=379)

	Academic Success	Creative Thinking	Critical Thinking
Academic Success	-	0.347**	0.429**
Creative Thinking	-	-	0.398**
Critical Thinking	-	-	-
Mean	673.94	33.71	40.23
SD	4.2	4.96	5.18
Min-Max (Range)	55-33 (28)	21-40 (19)	26-51 (25)

\*\*p<.01

The table 1 shows that mean academic success is 67.94 which is quite high, whereas the mean scores on creative thinking and critical thinking are 33.71 and 40.23, which are above average. The correlation of academic success with creative thinking came out to be 0.347 being 0.429with critical thinking. These are significant at 0.01 level. In order to find out the unique contribution of creative thinking and critical thinking, partial correlation was completed.

**Table 2.** Partial Correlation and Multiple Correlation: Contribution of Creative Thinking and Critical Thinking to Academic Success of College Students(N=379)

S.No.		Creative Thinking	Critical Thinking
1.	Correlation(r)	0.347	0.398
2.	Partial Correlation	0.210	0.341
3.	Multiple Correlation R <sub>1(23)</sub>	0.451	
4.	R <sup>2</sup>	0.207	
5.	R <sup>2</sup> Change	0.087	
6.	Percentage Variance	20.70	

The partial correlation between creative thinking and academic success by controlling critical thinking turned out to be 0.210, whereas it turned out to be 0.341 in case of critical thinking by controlling creative thinking. The reduction in magnitude of relationship may be attributed to importance of both of creative thinking and critical thinking in academic success on the one hand and strong relationship between these two abilities ( $r= 0.398$ ;  $p<0.01$ ). The multiple correlation (R) turned out to be 0.451 and percentage variance being 20.70%. This shows that taken together, both of creative and critical thinking play a significant and positive role in academic success of college students of Punjab.

## 5. CONCLUSIONS

There is significant positive relationship of academic success with of creative thinking and critical thinking of college students, both independently and conjointly. The magnitude of relationship of critical thinking, as compared to creative thinking, is explaining academic success of college students of Punjab in a more meaningful way. Creative aspects of college students have a secondary role in academic success. It would be worthwhile to suggest that free expression, debates and writing competitions at college level should be integral part of teaching-learning process.

**Implications:** There is need to promote creative thinking and critical thinking in pedagogical practices by using different learning strategies such as organization and collaborations. The students should be engaged by promising questioning skills. There is urgent need to promote divergence in thinking along with the question of logic and reasoning among students pursuing higher education.

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