



## A CREATIVITY AND INNOVATIVE THINKING OF ENGINEERING & ARTS COLLEGE STUDENTS IN CHENNAI - A COMPARATIVE STUDY

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### Abstract

The present study examines the four basic style of creative and innovative thinking of Engineering and Arts students. It made use of simple random sampling in selected 240 Engineering college students and 160 Arts College students in Chennai. Data analysis involved the use of mean, standard deviation and t-test to investigate the significant difference between the means. The means obtain for the creativity thinking of both Engineering and Arts graduate students were 60.77 and 62.35 respectively. It is found that there is no significant difference between the means of two groups for creativity thinking. The Engineering students have higher preference for intuitive and inspirational basic style, while, Arts students have higher preference to innovative and imaginative basic style of creative thinking.

**Keywords:** Creativity Thinking, Individuals Behavior, Intuitive, Innovative, Imaginative and Inspirational.

### INTRODUCTION

Ever since the ancient time the man has began inventing new things because of his quest for knowledge, eagerness to explore, fight against the nature's odds in order to protect himself, survival necessities etc. It is his creative power that made him successful and brought him into this modern and digital 21<sup>st</sup> century. Man has a unique power of creative things. His intelligence and imagination makes him to create something new. By nature he has the capacity to image and to think.

Creativity is an important dimension of man's personality. Each differs from his creativity. Creativity is considered as a god - given gift and an endowment.

But we cannot ignore the influence of training and education on nurturing creativity. Now, it has been established that every individual is creative in a greater or lesser degree. So the development of creativity cannot be left any chance alone. In an increasingly complex and chaotic world, it is important to expand our focus on creativity.

Over the years, many descriptions of creativity have been based on observing individuals and their behaviors. However, there is no simple all inclusive definition. The perspective is that creativity is a reflection of our creative thinking.

Creative thinking makes it possible to produce a world renowned master pieces in music, dance, painting etc. Also it enables man how to solve his routine problems. Creative thinking reflects how we perceive the world around us. It is concerned both the way we think and act. Knowing a person's creative thinking helps to predict about how he is most likely to behave indifferent situations.

Like creativity, everyone has creative potential and any one can discover his or her observe creative potential. Only after the fact we can judge whether a person has been creative or not. However, a way to determine creative potential without any prior evidence as mentioned earlier, is by use of a test instrument called the creative potential. The value of the test instrument is that it helps us to easily identify each person's creative thinking.

The creative potential profile is a test instrument that measures an individual's preference for each of four basic creative thinking styles. These four basic styles are intuitive, innovative, imaginative and inspirational.

**Intuitive:** This style focuses on result and relies on past experience to guide decisions.

**Innovative:** This style concentrates on problems and data is very systematic. Innovation individuals are willing to work hard and insist on precise and careful experiment. This style is typical of a scientist and an engineer.

**Imaginative:** This style describes people who are artistic, enjoy writing, are good leaders, and can readily visualize opportunities.

**Inspirational:** This style focuses on introducing social change and willingly gives of one's self toward that end. Creative thinking reflects the complexity of human beings and provides a description of a person's creativity. Most of the individuals have multiple style of creative thinking. Creative is not limited to any one field. People with high creative thinking have the potential to produce significant results in a number of fields. The graduate students also have creative thinking and they can



also produce significant results in the respective field. Only the difference is that they can have more or less preference for the four basic style of creative thinking. This study is aimed at studying the creative thinking of Engineering and Arts students of colleges in Chennai.

### OBJECTIVES OF THE STUDY

1. To use the creative potential profile test to measure the creativity thinking of Engineering and Arts graduate students.
2. To determine the preference of graduate students for each of the four basic creativity thinking styles of creativity
3. To compare the creativity thinking of Engineering and Arts graduate students in relative to the four basic styles of creativity thinking.

### HYPOTHESIS OF THE STUDY

1. There is no significant difference between the Engineering and Arts graduate students in relation to the basic style of creative thinking (intuitive, innovative, imaginative, and inspirational).
2. There is no significant difference between the creative thinking of Engineering and Arts graduate students.

### METHODOLOGY

The research method adopted for this study was the survey method

### SAMPLE

The sample comprised 400 graduate students (240 Engineering and 160 Arts students) studying in the final years students in Colleges in Chennai. The students were selected by simple random sampling method from a population of 1000 students.

### TOOLS

#### The Creative Potential Profile Test Instrument – A Creativity Thinking Test.

A test instrument called the Creative Potential Profile was developed as a means to identify a person's creative potential. The Creative Potential Profile uses 25 questions for determining the four basic style of creativity. This test shows an individual's preferences for each of the four creative thinking styles. The detailed description of this test has been given in the book 'Creativity Thinking - Discovering the Innovative Potential in Ourselves and others' (Alan J. Rowe, 2005). This test is reliable having reliability 0.82 and has 0.95 predicted validity. The average score for each style are – Intuitive (64), Innovative (67), Imaginative (58) and Inspirational (61). The standard deviation for each of these catalogues was 8,7,6,6. With these two sets of data, we can determine and compare with a large number of individuals who have taken the Creative Potential Profile.

### STATISTICAL TECHNIQUES USED

To analyze the data, the statistical techniques used were mean, standard deviation and t- test.

### DATA ANALYSIS

#### Hypothesis: 1

- (a) There is no significant difference between the Engineering and Arts graduate students in relation to intuitive creative thinking style.

(b)

**Table: 1 ,Significance of Difference between the Means of Scores (Intuitive Style) of Engineering and Arts Students.**

Group	N	M	S.D	t-Values
Engineering	240	66.55	9.12	3.38
Arts	160	63.84	8.62	Significant

From the table 1, it is found that t-value 3.38 is significant at 0.05 levels.

Hence, the null hypothesis is rejected. Hence, it is concluded that there is a significant difference between the Engineering and Arts graduate students in relation to – intuitive creativity thinking style.

The mean values of this style of the Engineering and Arts students are 66.55 and 63.84 respectively and the average score for this style is 64. It clears that, Engineering graduate students have more preference for intuitive style than Arts students.

#### Hypothesis: 1

- (c) There is no significant difference between the Engineering and Arts graduate students in relation to innovative creative style.



**Table: 2, Significance of Difference between the Means of Scores (Innovation Style) of Engineering and Arts Students.**

Group	N	M	S.D	t-Values
Engineering	240	62.52	10.12	0.58
Arts	160	62.86	9.45	Significant

From the table 2, it is found that t-value 0.58 is not significant at 0.05 levels.

Hence, the null hypothesis is accepted. Hence, it is concluded that there is a no significant difference between the Engineering and Arts graduate students in relation to – innovation creativity thinking style.

The mean scores of innovative creative style of the Engineering and Arts students are 62.51 and 62.86 respectively. These scores are less than the average score for this style (67). This clears that, the two groups of students have less preferences for innovation Creative Style.

**Hypothesis: 1**

(d) There is no significance difference between the Engineering and Arts graduate students in relation to imaginative creative style.

(e)

**Table: 3, Significance of Difference between the Means of Scores (Imaginative Style) of Engineering and Arts Students.**

Group	N	M	S.D	t-Values
Engineering	240	50.84	9.08	7.13
Arts	160	59.61	10.23	Significant

From the table 3, it is found that t-value 7.13 is significant at 0.05 levels.

Hence, the null hypothesis is rejected. Hence, it is conceded that there is a significant difference between the Engineering and Arts graduate students in relation to the imaginative creative style.

The mean score (59.61) of Arts students is slightly greater than the average score (58) of imaginative style. And, is comparably greater than the mean score (50.84) of Engineering students. It clears that, Arts students have more preference to the imaginative as compared to Engineering students.

**Hypothesis: 1**

(f) There is no significant difference between the Engineering and Arts graduate students in relation to inspirational creative style.

**Table: 4, Significance of Difference between the Means of Scores (Inspirational Style) of Engineering and Arts Students.**

Group	N	M	S.D	t-Values
Engineering	240	63.20	11.32	0.15
Arts	160	63.08	10.25	Not Significant

From the table 4, it is found that t-value 0.15 is significant at 0.05 levels.

Hence, the null hypothesis is accepted. Hence, it is concluded that there is a no significant difference between the Engineering and Arts graduate students in relation to – inspirational creativity thinking style.

The average score for inspirational style is 61, which is less than the mean scores of both the groups of students, i.e. 63.20 and 63.08 and are nearly equal. This clears that both groups of students have preference above the average for this style of creativity.

**Hypothesis: 2, There is no significant difference between the Creativity Thinking of the Engineering and Arts graduate students.**

**Table: 5, Significance of Difference between the Means of Creativity Thinking Scores of Arts and Science Students.**

Group	N	M	S.D	t-Values
Engineering	240	60.77	8.11	1.43
Arts	160	62.35	7.60	Not Significant



From the table 5, it is found that the t-value 1.43 is not significant at 0.05 levels

Hence, the null hypothesis is accepted. Hence, it is concluded that there is a no significant difference between the creativity thinking of these two groups of students

### **CONCLUSION**

1. The Engineering graduate students are more intuitive than the Arts graduate students and have higher preference for this style.
2. The Engineering and Arts graduate students are at the same level for innovative creative style. Both the groups of students are found below the average level of innovative creative style and hence have less preference for this style.
3. The Arts graduate students are more imaginative than the Engineering students. The Engineering students have less preference as compared to the average level of imaginative creative style.
4. Both the groups of graduate students have the same level of potential for inspirational creative style and have slightly better preference for this style of creativity.
5. The Engineering and Arts graduate students do not differ as far as creative thinking in concerned. They have the same capacity level of creative thinking.

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