



Relation between Creativity and Anxiety among School Going Adolescents

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Abstract

Creativity is the ability to generate original ideas, solve problems in novel ways, and express oneself in unique forms. It involves thinking beyond conventional boundaries and embracing innovation. Anxiety can both hinder and fuel creativity. While excessive anxiety might stifle creative thinking, moderate levels can act as a motivator. This study the researcher investigate the relationship between creativity and anxiety among school going adolescent students. In this study, 12 to 16 years age students studying under various schools in Kolkata was constituted the population of the study. A sample of 245 (girls =76; boys =169) was selected from different schools in Kolkata. The present study is a of cross-sectional survey research. In this study, the anxiety tool used for collecting data was “Beck Anxiety Inventory” (BAI) and the tool used for collecting data was ‘Non-Verbal Test of Creative Thinking’ (NVTCT-M) developed by Dr. Baqer Mehdi. Descriptive and Inferential statistics were used in the present study through SPSS in data analysis. Also in the study of the relationship between creativity and anxiety, we can see that a low positive and significant correlation is found between anxiety and creativity of the school going adolescent students.

Key Words: Creativity, Level of Anxiety, Adolescent Students.

Introduction

Creativity is often characterized by solving a problem situation (a desire) in an original and unexpected way, whilst also remaining useful. Creativity may be something quite obvious, such as the development of a suitable logo for a company, but applies equally to complex situations in politics, science, economics and many othefields (Lenaerts, 2013). Creativity is the ability to make or bring to existence something new, whether a new solution to a problem, a new method or device or a new artistic object or form (Olatoye, Akintunde & Ogunsanya,2010). At the beginning of the nineteenth century the verb „to create“ was rarely used. Now a day’s creativity is increasingly gaining in importance. Professionals from all fields are becoming aware of its importance and the development of creative thinking. In education, creative thinking varies from completely new ideas to new ways of considering

and solving problems. It has been said that creativity is not the ability to create out of nothing, but the ability to generate new ideas by associating, changing or reapplying existing ideas (Anwar, 2012). This opinion that creativity is not a single personal trait, but a set of traits. Basic elements of the concept of creativity include intelligence, intensive interest, knowledge, originality (ideas), creative instinct, non-conformity, courage, and persistence. Creativity can manifest itself in various areas of life; and in its various stages, some of them are in the forefront and some of them in the background. The author makes a distinction between "exceptional creativity" and "everyday creativity" (Hung, 2006). Anxiety disorders and depression are serious health problems that can affect a large number of children and Adolescents around the world. They may be particularly difficult for children and adolescents in developing countries. Anxiety disorders and depression can regularly arise in children and adolescents, and are typically caused by a combination of biological and environmental factors. Anxiety is practically defined as "*apprehension or excessive fear about real or imagined circumstances*", with the main characteristic of anxiety being worry, or an excessive concern about situations with uncertain outcomes (Huberty, 2004). Anxiety may include a range of anxiety disorders such as '*separation anxiety disorder*' (SAD); '*generalized anxiety disorder*' (GAD); '*post-traumatic stress disorder*' (PTSD); '*social phobia disorder*'; and '*obsessive-compulsive disorder*' (OCD) (Huberty, 2004). On the other hand depression is generally defined as "*a persistent experience of a sad or irritable mood as well as anhedonia, a loss of the ability to experience pleasure in nearly all activities*" (Cash, 2004). Adolescents face many problems peculiar to their age. They are also worried about their academic performance. Many students are under great parental pressure to score high marks. The entrance preparation and in many cases, high parental expectations double their anxiety and stress. They cannot get admission in prestigious institutions without a superior academic record. So the students are generally under stress and anxiety during the senior secondary years. Thus it is necessary to know if anxiety affects the creativity (Kakkar & Ahuja, 2015). It has been noted that creative people demonstrate an above average stage of anxiety. However, the anxiety of the creative individual is quite different from that of the neurotic individual with a disturbed personality. The high anxiety of the creative individual may be the result of his craving for the satisfaction of his creative urge and discontent with his status or rate of progress in attaining his creative motive. But creative individuals are quite capable of keeping their anxiety within manageable limits and directing it into productive channels.

Statement of the problem

Adolescence is a crucial time for fostering creativity. Encouraging exploration, providing diverse learning opportunities, supporting self-expression, and allowing room for experimentation can help adolescents develop and express their creativity in various domains, such as arts, sciences, and problem solving. Anxiety in adolescents is a prevalent mental health concern. It can manifest in various forms, including generalized anxiety, social anxiety, or special phobias. So I want to study whether there is any relationship between anxiety and creativity. Hence, the present study can be stated as **“Relation between Creativity and Anxiety among School Going Adolescents”**.

Objectives of the study

1. To study creativity of school going adolescents with respect to their gender, age and caste.
2. To study levels of anxiety of school going adolescents with respect to their gender, age and caste.
3. To study the relationship between levels of anxiety and creativity of school going adolescents;

Hypotheses of the Study

In keeping with the problem formulated and objectives to be tested, the following hypotheses were proposed to be tested:

H01: There is no significant difference in creativity of school going adolescents with respect to their gender.

H02: There is no significant difference in creativity of school going adolescents with respect to their age.

H03: There is no significant difference in creativity of school going adolescents with respect to their caste.

H04: There is no significant relation in levels of anxiety of school going adolescents with respect to their gender.

H05: There is no significant relation in levels of anxiety of school going adolescents with respect to their age.

H06: There is no significant relation in levels of anxiety of school going adolescents with respect to their caste.

H07: There is no significant correlation between overall anxiety and creativity of school going adolescents.

Study Design

The present study is a of cross-sectional survey research. It is a cross-sectional survey research as the researcher made a survey for collecting data regarding anxiety and creativity of adolescents students from the selected sample i.e. 245 adolescents school students of nine schools in Kolkata of West Bengal by administering two relevant tool on this study. The data were collected from different cross-sections of the sample like gender wise, grade wise and caste wise etc. Adolescent students between the ages of 12-16 were taken as sample units of the study included 169 males and 76 female participants.

Tool use for data collection

Two tools were used in this study, one is anxiety tool for collecting data was “Beck Anxiety Inventory” (BAI) and second is creativity tool for collecting data was ‘Non-Verbal Test of Creative Thinking’ (NVTCT-M) developed by Dr. Baqer Mehdi.

Techniques used for data analysis

Descriptive and Inferential statistics were used in the present study through SPSS.

1. Mean
2. Standard Deviation
3. Percentage Analyze
4. T test
5. Anova
6. X^2 – Test
7. Pearson Correlation

Procedure of data collection

After a careful study of operations involved in this study, the researcher used a standardized scale namely, 'NVTCT-M' developed by Dr. Baqer Mehdi for collecting data. So, for obtaining data he met the headmasters each of the school and after getting required permission he went to the class rooms of grade VII and grade VIII. He introduced himself with the students. He then distributed the test among the students and accordingly asked them to give their response by filling up it. While administering the test the researcher gave a short and meaningful description about the use of the test and items involved in it. He also gave some examples. He collected the test from them after 35-40 minutes.

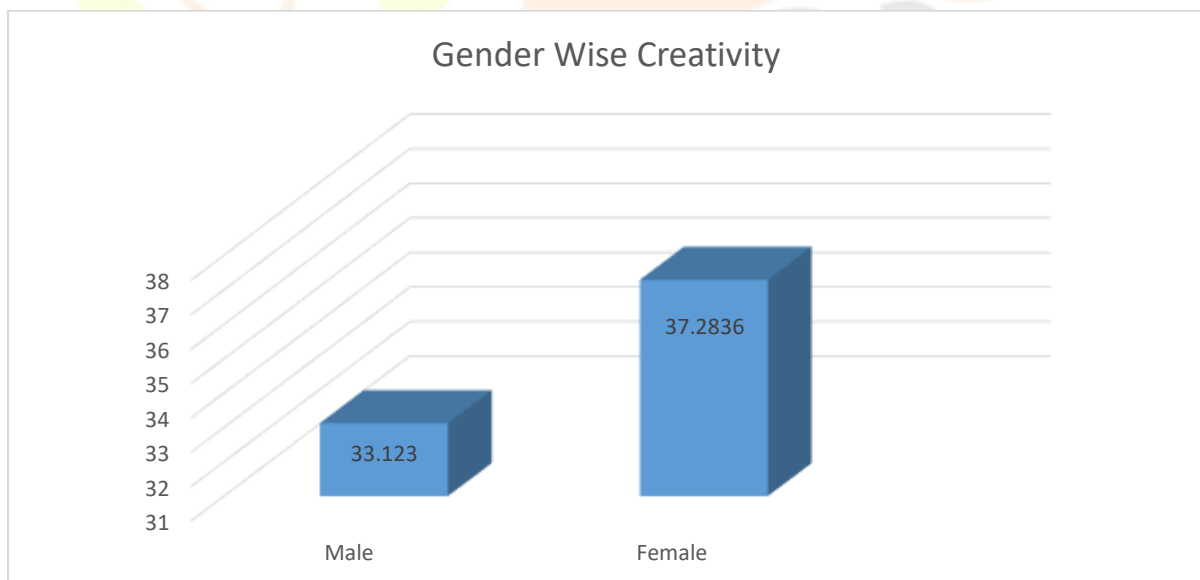
Analysis

This chapter deals with the presentation, analysis and interpretation of the collected data. It involves the use of different statistical techniques for the analysis of the presented data. This chapter is the backbone of the total studies. In any kind of studies data analysis and interpretation plays a compulsory vital role on the basis of which the total research results or findings can be formulated. Hence, without this portion, the research works are always incomplete.

Descriptive Statistics:

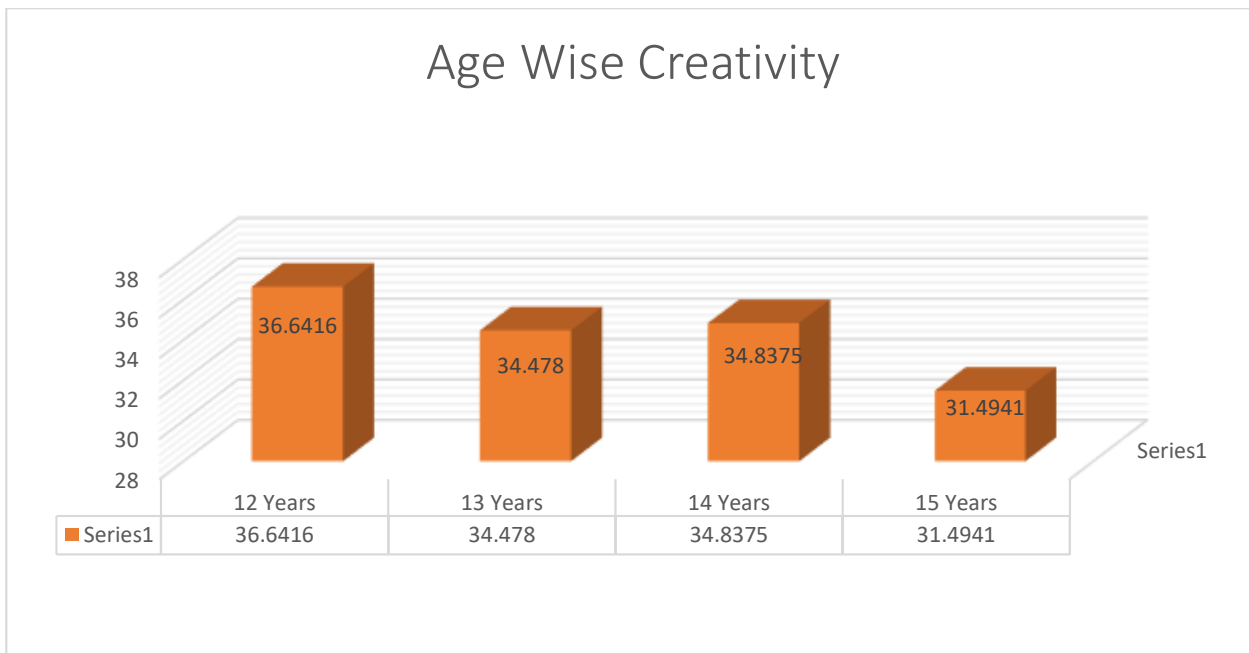
This part showed the descriptive statistics in terms of mean and standard deviation of each dimension by different variable. It also showed some form of graphical representations of the statistics for better understanding of data.

Showing the status of creativity of adolescent students based on gender.



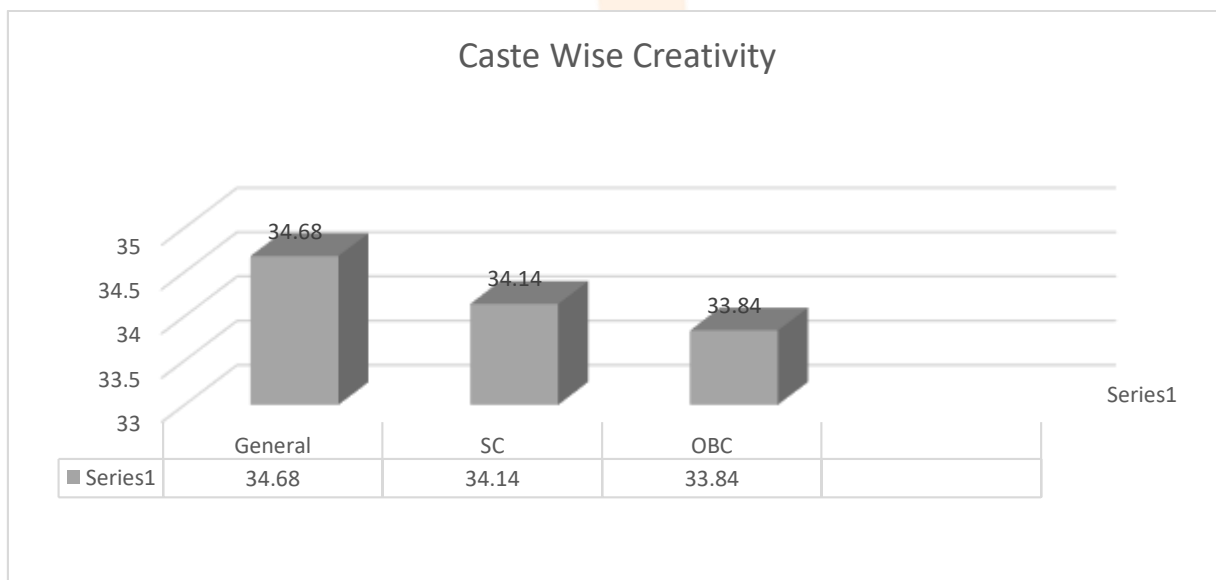
The figure shows the creativity score of adolescent students based on gender. It was found that the creativity mean score of female (M-37.28, SD-9.79) is higher than male (M-33.12, SD-10.97) students.

Showing the status of Creativity of School Going Adolescents With relation to their age.



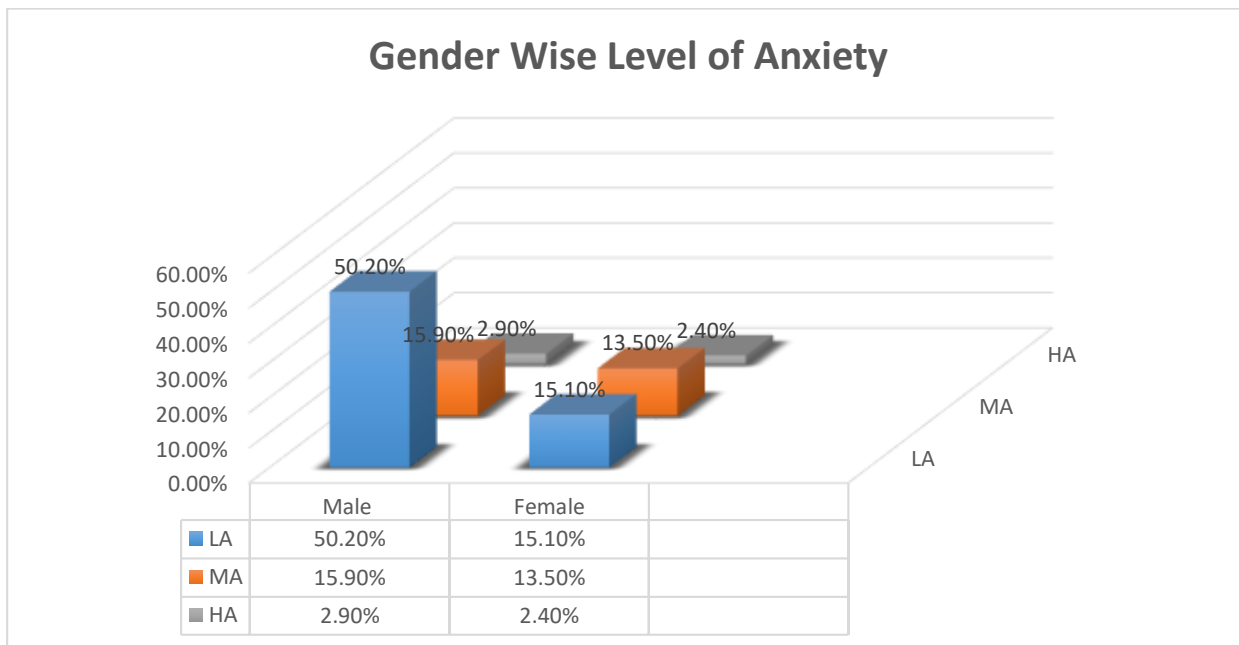
The above table represented the creativity score of adolescent students based on age. It was found that the creativity mean score of 14 year students (M=34.84, SD=10.37) is higher than 12 year (M = 36.64, SD = 9.86), 13 year (M = 34.48, SD = 9.91) and 15 year (M = 31.49, SD = 8.76) students.

Showing the status of Creativity of School Going Adolescents With relation to their caste.



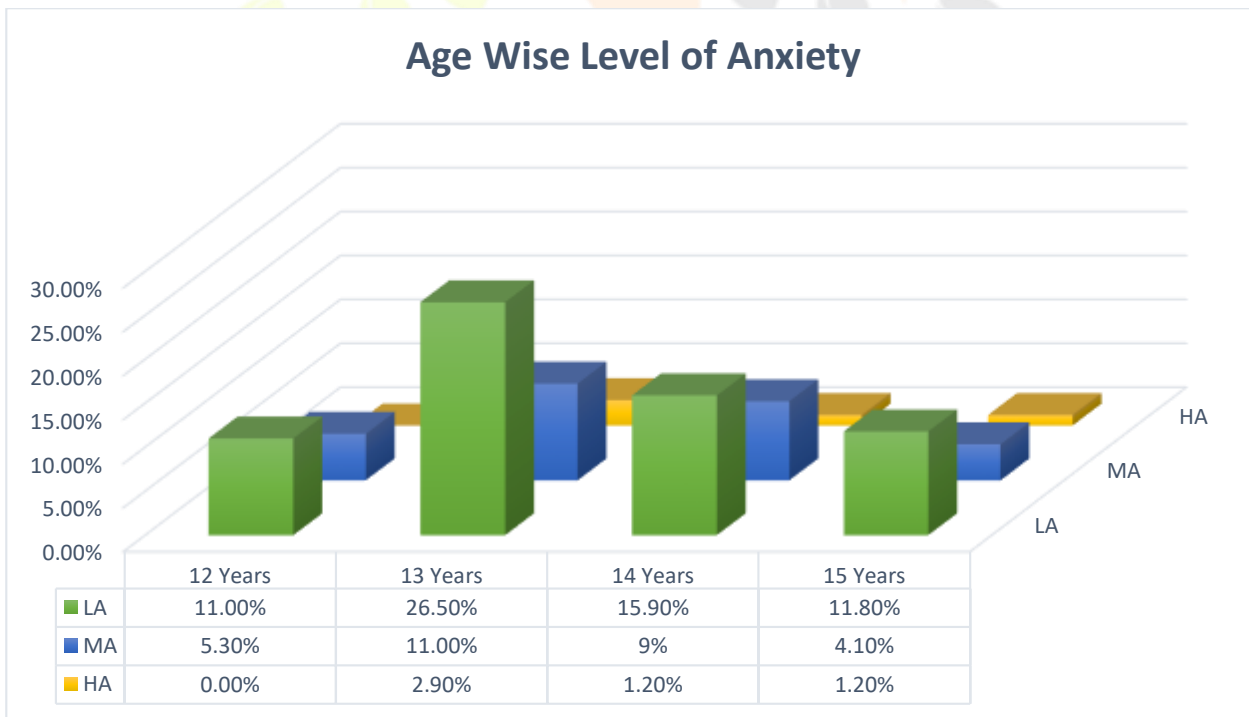
The above table represented the creativity score of adolescent students based on caste. It was found that the creativity mean score of general category students (M=34.68, SD=9.76) is higher than scheduled caste (M = 34.14, SD = 10.17) and other backward classes (M = 33.84, SD = 9.71) students.

Showing the Level of Anxiety among Adolescents School Students with respect to their Gender.



The above table represented the out of 169 male students of school going adolescents 123(50.2%) students preferred Low Anxiety, 39(15.9%) students preferred Moderate Anxiety, 7 (2.9%) students preferred High Anxiety and out of 76 female students of school going adolescents; 37(15.1%) students preferred Low Anxiety, 33 (13.5%) students preferred Moderate Anxiety, 6(2.4%) student preferred High Anxiety.

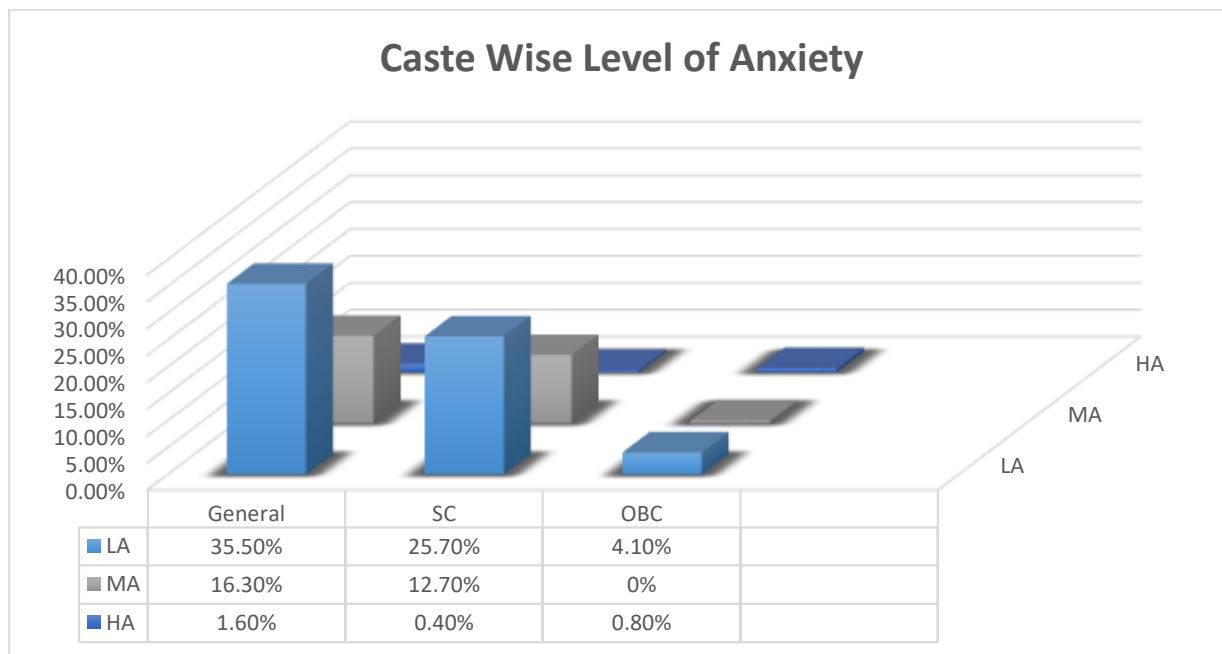
Showing the Level of Anxiety among Adolescents School Students with respect to their Age.



The above table represented the i) out of 40, 12 years students of school going adolescents 27(11.0%) students preferred Low Anxiety, 13(5.3%) students preferred Moderate Anxiety, 0 (0%) students preferred High Anxiety. ii) out of 99, 13 years students of school going adolescents; 65(26.5%) students preferred Low Anxiety, 27

(11.0%) students preferred Moderate Anxiety, 7(2.9%) student preferred High Anxiety. iii) out of 64, 14 years students of school going adolescents; 39(15.9%) students preferred Low Anxiety, 22 (9.0%) students preferred Moderate Anxiety, 3 (1.2%) students preferred High Anxiety. iv) out of 42, 15 years students of school going adolescents; 29(11.8%) students preferred Low Anxiety, 10 (4.1%) students preferred Moderate Anxiety, 3 (1.2%) students preferred High Anxiety.

Showing the Level of Anxiety among Adolescents School Students with respect to their Caste.



The above table represented the i) out of 131 general students of school going adolescents 87(35.5%) students preferred Low Anxiety, 40(16.3%) students preferred Moderate Anxiety, 4 (1.6%) students preferred High Anxiety. ii) out of 101 Scheduled Caste students of school going adolescents; 63(25.7%) students preferred Low Anxiety, 31 (12.7%) students preferred Moderate Anxiety, 7 (2.9%) students preferred High Anxiety. iii) out of 13 Other Backward Classes students of school going adolescents; 10(4.1%) students preferred Low Anxiety, 1 (0.4%) students preferred Moderate Anxiety, 2 (0.8%) students preferred High Anxiety.

Inferential Statistics:

H01: There is no significant difference in creativity of school going adolescents with respect to their gender.

T- test showing the gender wise creativity of adolescent students.

Independent sample t-test						
	Level	t	df	P-value	Remarks	Hypotheses Testing (Null/H0)
Creativity Score	Male	-3.098	243	.002	.002	Rejected
	Female					

S= Significant, NS= Not Significant

Above table revealed that there is a significant mean difference ($t=-3.098$, $P=.002$, $P<0.01$) between male and female students in creativity mean score. So the null hypothesis is rejected. Consequently, from here we can conclude that Male and Female differ significantly in creative ability/ creativity.

H02: There is no significant difference in creativity of school going adolescents with respect to their age.

ANOVA showing the age wise creativity of adolescent students.

ANOVA							
	Level	Sum of Square	df	F-value	P-value	Remarks	Hypotheses Testing (Null/H0)
Creativity Score	12 years	568.473	3	1.958	0.121	P>0.05 *NS	Failed to Reject
	13 Years						
	14 Years						
	15 years						

S= Significant, NS= Not Significant

Above table revealed that the value (calculated) of $F=1.958$ and $P=0.121$, so the null hypothesis can be accepted as $P>0.05$ i.e. no significant different was found in creativity among the adolescent students on the basis of age [$F(3); 1.958$, $P>0.05$]. Hence it can be safely concluded that null hypothesis can be accepted, and confidently say that the different are statistically no significant.

H03: There is no significant difference in creativity of school going adolescents with respect to their caste.

ANOVA showing the caste wise creativity of adolescent students.

ANOVA							
	Level	Sum of Square	df	F-value	P-value	Remarks	Hypotheses Testing (Null/H0)
Creativity Score	General Category	21.707	2	0.110	0.896	P>0.05 *NS	Failed to Reject
	Scheduled Caste						
	Other Backward Classes						

S= Significant, NS= Not Significant

Above table revealed that the value (calculated) of $F=0.110$ and $P=0.896$, so the null hypothesis can be accepted as $P>0.05$ i.e. no significant different was found in creativity among the adolescent students on the basis of caste [$F(2); 0.110$, $P>0.05$]. Hence it can be safely concluded that null hypothesis can be rejected, and confidently say that there is no significant difference in creativity based on caste.

H04: There is no significant relation in levels of anxiety of school going adolescents with respect to their gender.

Chi-square test showing the gender wise level of anxiety of adolescent students.

Chi-square test (X^2)							
Variable	Category	N	X^2	df	Asymp. Sig.	Remarks	Hypotheses Testing (Null/H0)
Gender	Male	169	13.436	2	0.001	P<0.01 *S	Rejected
	Female	76					

S= Significant, NS= Not Significant

Above table revealed that the value of $\chi^2 = 13.436$ and $P=0.001$, so the null hypothesis can be rejected as $P<0.01$. Hence, it can be concluded that preference of level of anxiety style is influenced of gender of school going adolescents.

H05: There is no significant relation in levels of anxiety of school going adolescents with respect to their age.

Chi-square test showing the age wise level of anxiety of adolescent students.

Chi-square test (X^2)							
Variable	Category	N	X^2	df	Asymp. Sig.	Remarks	Hypotheses Testing (Null/H0)
Age	12 years	40	4.594	6	0.597	P>0.05 *NS	Failed to Reject
	13 years	99					
	14 years	64					
	15 years	42					

S= Significant, NS= Not Significant

Above table revealed that the value of $\chi^2 = 4.594$ and $P=0.597$, so the null hypothesis can be accepted as $P>0.01$. Hence it can be concluded that anxiousness does significantly differ among students when belonging social caste is concerned. Hence, it can be concluded that preference of level of anxiety is free from the influenced of age of school going adolescents.

H06: There is no significant relation in levels of anxiety of school going adolescents with respect to their caste.

Chi-square test showing the caste wise level of anxiety of adolescent students.

Chi-square test							
Variable	Category	N	X^2	df	Asymp. Sig.	Remarks	Hypotheses Testing (Null/H0)
Caste	General	131	6.869	4	0.143	P>0.05 *NS	Failed to Reject
	Schedule Caste	101					
	Others	13					

S= Significant, NS= Not Significant

Above table revealed that the value of $\chi^2 = 6.869$ and $P=0.143$, so the null hypothesis can be accepted as $P>0.01$.

Hence, it can be concluded that preference of Level of Anxiety is free from the influenced of caste of school going adolescents.

H07: There is no significant correlation between overall anxiety and creativity of school going adolescents.

Study the relationship between Anxiety and Creativity

Pearson Correlation			
	Creativity	P-value	Remarks
Level of Anxiety	.149	.020	$P<0.05$ *S

S= Significant, NS= Not Significant

From the above table It is concluded that a low positive and significant correlation is found between Level of Anxiety and Creativity of the school going adolescents students, as coefficient of correlation was 0.149 and $p>.01$.

Results and Discussion

The results of analyses obtained from the present study helps us to understand the current state anxiety and creativity of adolescent students at Kolkata in present condition.

The study observed that creativity mean score of female is higher than male students and there is a significant mean difference ($t=-3.098$, $P=.002$, $P<0.01$) between male and female students in creativity. This result support the study of Abraham (2015), postulations that have been put forward to understand gender differences in creative achievement, gender-based differences in the structure and function of the brain, gender-related differences in behavioural performance on tasks of normative cognition, and neuroscientific studies of gender and creativity. The result of this study contradicts the findings of Pannusamy (2019), its calculated t value indicates that there is no significant difference between the creativity level of male and female students.

This study observed that creativity mean score of 14 year students is higher than 12 year, 13 year and 15 year students and no significant different was found in creativity among the adolescent students on the basis of age. This result supports the findings by Madore et al., (2016) that no differences being found between young and old adults. This result contradict the studies conducted by Wei and Weihua (2013) with 140 elderly subjects, it is established that creativity decreases with age; it is shown that in old age the responses to creativity tasks are low, however, factors related to education and health greatly influenced the averages obtained, such that adults with higher educational levels had better scores in creative tasks.

This study observed that creativity mean score of general category students is higher than scheduled caste and other backward classes' students and no significant different was found in creativity among the adolescent students on the basis of caste. The conclusion of this study is that socio demographic variables i.e. gender, residential area, caste category, social environment, parent's occupation and education, family income, academic etc. play an impotent role to foster creativity among students (Punia & Niwas, 2013).

The study observed that 50.2% male participants referred to low level of anxiety and there is a significant mean difference between male and female students in level of anxiety. Hence, it can be concluded that preference of level of anxiety style is influenced of gender of school going adolescents. The results of this study supports the findings of Jalnapukar et al., (2018) and the WHO (2017), which have consistently been shown that females are

more prone to have an anxiety disorder. However, the result of this study contradicts the study conducted by Billote et al., (2021) the result show that there is no significant difference in the anxiety level of male and female adolescents. Therefore, it indicates that gender does not affect whether these adolescents are prone to anxiety.

The study observed that 26.5 % of 13 year students have low level of anxiety and no significant different was found in level of anxiety among the adolescent students on the basis of age. Hence, it can be concluded that preference of level of anxiety is free from the influenced of age of school going adolescents. The results supports the study conducted by Tabrizi et al., (2021) results indicate that there is no significant relationship between age and anxiety. This study contradicts the research conducted by Billote et al., (2021) shows a weak negative relationship between age and anxiety. Therefore, as the age increases, the lesser anxiety one will experience.

The study observed that 35.50% of general category participants referred to low level of anxiety and no significant mean difference was found in level of anxiety on the basis of caste. Hence, it can be concluded that preference of Level of Anxiety is free from the influenced of caste of school going adolescents. It has been seen in very few studies but there were some important researchers of social exclusion on mental health. This study examined caste variations on anxiousness and statistics evident that anxiousness does significantly differ among students when belonging social caste is concerned at 0.01 level as well as 74.1% participants belong to scheduled caste community showed moderate level of anxiousness related to Covid-19 pandemic (Adak and Hossain, 2020). According to Rosenthal, Russell and Thomson (2006), discriminated and excluded persons can be explained as ‘unconnected and stressed’, which makes them to feel isolated, anxious, psychologically distressed and tend to do self-harming and risk taking behaviour. Mean scores of total anxiety, depression and stress of candidates belonging from different caste found to be significant statistically in current study. Thus, no significant variation found on stress scores between male, female, and among different social castes. The feel of not include in a larger social group as caste discrimination (Pal, 2015) significantly effects on the mental health of peoples.

Somehow the low positive and significant correlation is found between Level of Anxiety and Creativity of the school going adolescent’s students. The result of this study supports the findings of Miraka and Tritsaroli (2019) that there is a positive relationship between anxiety and creativity. This has also shown that anxiety drives an individual to be more creative. The results of this study contradicts the findings of Byron and Khazanchi (2011) that found a negative relationship between anxiety and creativity. Also local researcher, Niknam (2007) found negative relationship between creative thinking and anxiety among elementary school students in Iran.

Conclusion

Creativity has far-reaching importance across various aspects of life, including personal development, education, the work place and society as whole. Creativity in adolescent students has special implications that their academic performance, social interactions and overall development. This study shows significant differences in creativity based on gender. But no significant difference in creativity can be observed on the basis of age and caste. Anxiety is a problem that occurs in the majority of adolescents. This study observes that Level of Anxiety style is influenced of gender of school going adolescents, Level of Anxiety is free from the influenced of age of school going adolescents and Level of Anxiety is free from the influenced of caste of school going adolescents. A positive and significant relationship is observed between creativity and anxiety. That is, anxiety has an effect on creativity. So anxiety needs to be properly controlled. Levels of anxiety, for many reasons differ among

adolescents. The implication of this is that some adolescents suffer from high anxiety and stress and studies show that creative thinking affects mental health and anxiety (Tabrizi et al., 2011).

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