



Scientific Attitude And Creativity A Correlation Study Among Secondary School Students.

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Abstract:

Creativity encompasses the ability to discover new and original ideas, connections, and solutions to problems. It's a part of our drive as human fostering resilience, sparking joy, and providing opportunities for self-actualization. An act of creativity can be grand and inspiring, such as crafting a beautiful painting or designing an innovative class. But an idea need not be artistic or world-changing to count as creative. Life requires daily acts of ingenuity and novel workarounds; in this sense, almost everyone possesses some amount of creativity. Children who express unusual thoughts, who are interesting and stimulating in short. children who appear to unusually bright. Children who experience the world in novel and original ways. These are (personally creative) children whose perceptions are fresh, whose evaluation are insightful, who may make important discoveries that only they know about. Individuals who have change their culture in some important way. Because their achievements are by define by public, it is easier to write about them. (e.g., Leonardo, Edison, Picasso, Einstein, etc.) (pages 25-26) The Systems Model of Creativity: (pages 27-28) the creative domain, which is nested in culture - the symbolic knowledge shared by a particular society or by humanity as a whole (e.g., visual arts) the field, which includes all the gatekeepers of the domain (e.g., art critics, art teachers, curators of museums, etc.) the individual person, who using the symbols of the given domain (such as music, engineering, business, mathematics) has a new idea or sees a new pattern, and when this novelty is selected by the appropriate field for inclusion into the relevant domain Creativity is any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one... What counts is whether the novelty he or she produces is accepted for inclusion in the domain." (page 28). Scientific attitude is a cognitive concept and is a composite of a number of mental habits or tendencies to react consistently in certain way to a novel or problematic situation. These habits or tendencies include accuracy, intellectual honesty, open mindedness, suspended judgment, criticalness, and habit of looking for the cause and effect relationships. These habits are important for everyone in everyday life. Scientific attitude is necessary to children to lead a smooth and comfortable life in the society. Children with good scientific attitude can understand the phenomena of nature and human behavior. To develop scientific attitude among students, they should be made to practice and observe science so that they get the opportunity to feel and develop the components of scientific attitude in their minds. In this context the main purpose of the study was to examine Creativity and Scientific Attitude a Correlation study among Secondary School Students. The study also aimed to find out correlation between variables. The study was carried on students of 9th standard in schools of city of Mysore. The sample for the study consisted of 100 male and female students and data was collected by using tools viz, Scientific Attitude scale by Amandeep kaur to measure Scientific attitude of the Secondary school students and Passitest of creativity to measure the creativity of secondary school students. There is a significant relationship between

scientific attitude of male and female secondary school students. There is a significant difference between Creativity of male and female secondary school students. There is significant relationship between the male and female secondary school students.

Key words: Creativity, Scientific Attitude t-test, Descriptive survey method t- test.

1. Introduction:

Creative individuals have a great deal of energy, but they are also often quiet and at rest. Creative individuals tend to be smart, yet also naive at the same time. Creative individuals have a combination of playfulness and discipline, or responsibility and irresponsibility. Creative individuals alternate between imagination and fantasy on one end, and rooted sense of reality at the other. Creative people seem to harbor opposite tendencies on the continuum between extroversion and introversion. Creative individuals are also remarkable humble and proud at the same time. Creative individuals to a certain extent escape rigid gender role stereotyping and have a tendency toward androgyny. Generally, creative people are thought to be rebellious and independent. Most creative persons are very passionate about their work, yet they can be extremely objective about it as well. The openness and sensitivity of creative individuals often exposes them to suffering pain yet also a great deal of enjoyment. Creativity is a process involving the generation of new ideas or concepts, or new associations between existing ideas or concepts, and their substantiation into a product that has novelty and originality. From a scientific point of view, the products of creative thought (sometimes referred to as divergent thought) are usually considered to have both "originality" and "appropriateness." An alternative, more everyday conception of creativity is that it is simply the act of making something new. Although intuitively a simple phenomenon, creativity is in fact quite complex. It has been studied from numerous perspectives, including psychology, social psychology, psychometrics, artificial intelligence, philosophy, history, economics, and business. Unlike many phenomena in science, there is no single, authoritative perspective or definition of creativity; nor is there a standardized measurement technique. Creativity has been attributed variously to divine intervention or spiritual inspiration, cognitive processes, the social environment, personality traits, and chance ("accident" or "serendipity"). It has been associated with genius, mental illness and humor. Some say it is a trait we are born with; others say it can be taught with the application of simple techniques. Although popularly associated with art and literature, it is also an essential part of innovation and invention, important in professions such as business, economics, architecture, industrial design, science, and engineering. Despite, or perhaps because of, the ambiguity and multi-dimensional nature of creativity, entire industries have been spawned from the pursuit of creative ideas and the development of creativity techniques. Creativity is a process involving the generation of new ideas or concepts, or new associations between existing ideas or concepts.

2. Need and importance of the study: In a summary of scientific research into creativity, Michael Mumford suggested: "Over the course of the last decade, however, we seem to have reached a general agreement that creativity involves the production of novel, useful products" (Mumford, 2003, p. 110), or, in Robert Sternberg's words, the production of "something original and worthwhile". Authors have diverged dramatically in their precise definitions beyond these general commonalities: Peter Meusburger estimates that over a hundred different definitions can be found in the literature, typically elaborating on the context (field, organization, environment etc.) which determines the originality and/or appropriateness of the created object, and the processes through which it came about. As an illustration, one definition given by Dr. E. Paul Torrance in the context of assessing an individual's creative ability, described it as "a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies: testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.

Creativity in general is usually distinguished from innovation in particular, where the stress is on implementation. For example Teresa Amabile and Pratt (2016) define creativity as production of novel and useful ideas and innovation as implementation of creative ideas,¹ while the Eurostat state that "Innovation is more than a new idea or an invention. An innovation requires implementation, either by being put into active use or by being made available for use by other parties, firms, individuals or students."

There is also an emotional creativity which is described as a pattern of cognitive abilities and personality traits related to originality and appropriateness in emotional experience.

Creativity encompasses the ability to discover new and original ideas, connections, and solutions to problems. It's a part of our drive as humans—fostering resilience, sparking joy, and providing opportunities for self-actualization. Act of creativity can be grand and inspiring, such as crafting a beautiful painting or designing an innovative company. But an idea need not be artistic or world-changing to count as creative. Life requires daily acts of ingenuity and novel workarounds; in this sense, almost everyone possesses some amount of creativity. There are many pieces to the puzzle of creativity, including a balance between controlled, deliberate thought and spontaneous play and imagination. Personality plays a role, as well as biology and life experience. But everyone possesses some measure of creativity, even if they don't realize it. Life is full of small moments that require new ideas or surprising solutions. Student's attitudes towards science and scientific attitudes have been a topic of enduring interest in the field of science Education for over 40 years, but After all, there is no sense in which people are concerned about students' attitudes towards the learning of English or history. So what is it that drives the interest in this topic. The brief explanation is that compulsory science Education bears a dual mandate. On the one hand, school science is charged with educating the next generation in and about science an education which essentially requires developing an understanding and appreciation of the explanatory hypotheses that science offers of the material world, how these came to be and why they matter. On the other hand, school science has a responsibility to educate the next generation of scientists. Whilst there are overlaps between the two goals, the former requires a broad overview of the domain. The latter requires a foundational knowledge of the discipline and its major concepts. And it is the supposed failure of school science to engage sufficient students in studying science for a future career that has pushed students' attitudes to the force as a matter of concern for society and policymakers. Today's student is a citizen of tomorrow. Future society depends on the all-round development of students. Uma Shankar Joshi had rightly said, "Man should become human." and for this, every student must have a certain attitude towards everything they face throughout their life G. Shanthi (2014). Panneerselvam M, Dr. Tamizhselvan M. carried a study on 'An investigation on the secondary school student about scientific attitude and achievement in science.' Findings of the study revealed that the Government schools the students with a more scientific attitude perform better in Science achievement than that of the students with a low group of scientific attitude. The study was aimed at using a standardized Scientific Attitude Scale to measure the scientific attitudes of students of secondary school. The Scientific Attitude scale will be useful not only to know the scientific attitudes of students but also to draw attention to deficiencies in developing scientific attitudes in students. This study will reveal to which extent the variables like type of management, locality of the school, and gender will influence the scientific attitudes of students. The tendency to generate or recognize alternates, or possibilities that may be useful in problem solving communicating with others. In the lights of above researchers felt that is necessary to investigate to study scientific attitude and Creativity A correlation study among secondary school students.

3 .Operational definitions of the key terms used in the study:

Scientific Attitude: Attitude towards science can be defined as the feelings, beliefs, and values held about an object that may be the endeavor of science. Scientific attitude mean that one has such attitude as curiosity, rationality, willingness to suspend judgment open minded ness, critical mindedness, objectivity and humility etc.

Creativity: Creativity is defined as the tendency to generate or recognize ideas, alternatives or possibilities that may be useful in solving problems. It is the ability of children to produce new, novel things.

4. Methodology

Statement of the problem:

The statement of the problem is: Scientific Attitude and Creativity A correlation study among Secondary School Students.

5. Objectives of the study:

Following were the objectives of the study

- To compare whether there is a significant difference between Scientific attitude of male and female secondary school students.
- To compare where there is a significant difference between Creativity of male and female Secondary School students.
- To examine whether there is significant relationship between the Scientific Attitude and \Creativity of Secondary School students.

6. Hypotheses of the study:

The following hypotheses were formulated in pursuance of the objectives of the study:

- There is no significant difference between Scientific Attitude of male and female Secondary School students.
- There is no significant difference between the Creativity of male and female Secondary school Students.
- There is no significant relationship between Scientific Attitude and Creativity of secondary school students.

7. Variables of the study:

Main variable:

- Scientific Attitude
- Creativity

Back ground variable: Gender

8. Method of the study:

Method of the study: Descriptive Survey method was adopted for the study.

9. Sample of the study: Random Sampling technique has been adopted for selecting the sample of secondary schools of city of Mysore. Further 100 male and female students were selected through Random sampling technique.

10. Tools used for collection of data:

The following tools have been used for the study and are shown in the table no one

Table no 1

SL,NO	Variables	Tools used	Standardized Constructed by
1	Creativity	Passi test of creativity	Passi
2	Scientific attitude	Scientific attitude scale	Dr Amandeep kaur and Dr S C Gakhar

11. Statistical techniques used for analysis of data.

Statistical techniques used for analysis of data: The following statistical techniques were used for analyze the hypotheses formulated in the study: a) t – test used to find out significant differences between the variables. b) Pearson product movement correlation: The technique used to find out correlation between the variables

12. Analysis and interpretation of the data:

Hypothesis 1 There is no significant difference between the scientific attitude of male and female secondary school students.

TableNo.2: showing mean, SD,t-value of male and female with respect to Scientific attitude.

	Groups	N	Mean	SD	df	T	significance
Gender	Male	50	213.45	17.00	50	10.235	0.01
	Female	50	245.88	19.00			

Table No.2 shows that the obtained 't' value 10.235 is greater than the tabled 't' value 2.626 at 0.01level.Hence,the null hypothesisHo.1 is rejected and the alternate hypothesis stating that there significant difference between the Scientific attitude of male and female secondary school students is accepted. Since, the mean value of male (213,45) is lesser than that of the mean value of female 245.88),it is concluded that female secondary school students have scored higher in Scientific attitude.

Hypotheses 2: There is no significant difference between Creativity of male and female secondary school students.

	Groups	N	Mean	SD	df	T	significance
Gender	Male	50	215.35	15.00	48	4.323	0.01
	Female	50	255.75	17.00			

TableNo.3: showing mean, SD,t-value of male and female with respect to Creativity.

Table No.3 shows that the obtained 't' value 4.323 is greater than the tabled 't' value 2.626 at 0.01 levels. Hence, the null hypothesis Ho.2 is rejected and the alternate hypothesis stating that there is a significant difference between the Creativity of male and female secondary school students is accepted. Since, the

mean value of male 215.35) is lesser than that of the mean value of female (255.75), it is concluded that female secondary school students have scored higher in creativity.

Hypotheses3: There is no significant relationship between the Scientific attitude and creativity of secondary school students.

Table: No: 4 showing number, Mean, r, values between Scientific Attitude and Creativity.

Variables	N	Df	'r' value	Level of significance
Adjustment	100	96	0.226	0.05
General mental ability				

Table No 4: Shows that the obtained 'r' value 0.326 is greater than the table value 2.000 'r' value at 0.05 level. Hence, the null hypothesis Ho.3 is rejected and the alternate hypothesis stating that there is a significant relationship between the scientific attitude and Creativity of secondary school students is accepted. Therefore it is concluded that there is a positive and insignificant relationship between scientific attitude and creativity among secondary school students.

13) Findings of the study:

1. It is concluded that female secondary school students have scored higher in scientific attitude.
2. it is concluded that female secondary school students have scored higher in creativity.
3. It is concluded that there is a positive and insignificant relationship between scientific attitude and creativity among secondary school students.

14) Educational Implications of the study:

- 1) By encourage of students in Scientific curiosity: This is the First and foremost aspect that is crucial when it comes to develop a scientific temper is to feed his or her natural curiosity and encourage them to ask more questions, Incorporate more practical sessions or presentations in the class.
- 2) Improve critical thinking capacities: By developing the students critical thinking capacities will allow them to more interest in their learning curve and with greater curiosity, students will be inclined to learn more things.
- 3) Support their experiments: steer the children away from finding answers on the internet and encourage them to use their reasoning, Cheer them on when they create models or diagrams to explain their understanding. Motivate them to debate on the traditional and unfounded biases and arrive at their own conclusions. By organizing enrichment program for the children, giving advanced projects allow children to play, enhance their fine motor skills, allow them to explore their imaginations.

15) Bibliography:

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