APTITUDE AND REASONING ABILITY OF STUDENTS IN RELATION TO THEIR INTEREST IN SCIENCE

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Abstract

This study aims to see the relationship between aptitude, reasoning ability and interest in science of students studying government schools of Chandigarh. Correlation study was conducted. Sample of 100 students studying in class Xth was taken from two government schools of Chandigarh. Science Aptitude Test by Shahapur, Reasoning Ability in Science Test by Joshi and Science Interest Test by Dubey were used. Correlation was used to find relationship among variables. The study found significant correlation between reasoning ability and interest of students and non significant correlation between aptitude and interest of students.

Introduction

Science is a dynamic and vital force in the daily life of every man and woman. It touches every phase of human activity. The marvelous achievements in science have outstripped the limits of the world. A flight to the moon or mars is no longer a new dream. It has almost become impossible to live in this world without scientific knowledge. Its tremendous impact on industry, agriculture and commerce is so great that it is high time that India should produce more and more scientifically trained personnel to meet its ever increasing demands in various fields. A student who wants to succeed in science should have some aptitude and special abilities like reasoning and logical thinking. For that he should have interest in science.

An aptitude is a potential for acquiring certain skills and knowledge. As such it is used in a far more specific way than intelligence. It also covers areas not included under the umbrella called "Intelligence". Scientific aptitude is a complex of interacting hereditary and environmental determinants producing predisposition or ability in science. Through these abilities, it is possible to predict future accomplishment of a person in science Rao, (1996).

Reasoning skills develop gradually through a person's lifetime and at different rates for different individuals. Reasoning skills are recognized as the key abilities for human beings to create, learn, and exploit knowledge. These skills are also an important factor in the process of human civilization. Therefore, the importance of reasoning skills has been of great concern in educational settings and the world of work. It becomes increasingly important to improve reasoning ability through lifelong learning in response to such challenges and lead a meaningful life, and construct a rational world.

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Interest means to make a difference. It describes why the organism tends to favor some situations and thus comes to react to them in a very selective manner. To be interested in an object/activity means to identify oneself with the object/activity. It is present when we are aware of an object. It is motivational for the task and important factor in achievement. It affords pleasure and satisfaction, creates enthusiasm and curiosity and strengthens vocational aspect of mind Mangal, (2011).

Emergence of the Problem

Effective science learning is not only necessary for one's individual development; it also helps learner to contribute significantly towards the development of a nation. Students feel a strong urge to enroll themselves in science courses particularly at senior secondary stage. Parents are also driven strongly by this type of external motivation, considering science interest of their children as the symbol of social status. But mere enrolment in science courses will not result into benefit of learner in large extent unless student's science interest is made effective also. There are several factors which influence interest in science, among which their aptitude and reasoning ability are two major determinants. But in the present system of education at the time of admission in the senior secondary stage, student's aptitude and reasoning ability are hardly recognized as the matter of consideration. As a result, in spite of gradual increasing rate of enrolment of students in science courses, the scenario of student's achievement in science is not as per the level of expectation. This failure in science learning increases the possibility of wastage of human resources and therefore, has become a major concern. This lead the investigator to the select the present topic.

Objectives of the Study

1. To find if there exists any correlation between aptitude and interest of the students in science.
2. To find if there exists any the correlation between reasoning ability and interest of the students in science.

Hypotheses

1. There exists no significant correlation between aptitude of the students and their interest in science.
2. There exists no significant correlation between reasoning ability of the students and their interest in science.

Method Used

The present study is Correlational in nature.

Tools

1. Science Aptitude Test (2005) by Shahapur.
2. Reasoning Ability In Science Test (2011) by Joshi and Mahapatra.
3. Science Interest Test (2005) by Dubey.

Sample

A sample of 100 students of class Xth were selected from the government schools of Chandigarh. Out of which 50 were from Government Model High school, sector- 12 and other 50 were from Government Model Sr. Sec. school, sector-20, Chand?garh.

Statistical Techniques Used

The data obtained were subjected to statistical analysis. To test the hypotheses based on the objectives of the study, the following techniques were used:

1. Descriptive statistics like mean, median, mode, standard deviation, skewness and kurtosis were used to ascertain the nature of distribution of scores of variable of aptitude, reasoning ability and interest.
2. Coefficients of Correlation were calculated to test the relationship between aptitude, reasoning ability and interest.

Analysis and Interpretation of Data

Table 1: showing Coefficient of correlation between Aptitude and Interest scores of government school students towards science

Correlations between Aptitude and Interest				
Variables	N	MEAN	STANDARD DEVIATION	Coefficient Of Correlation "r"
Aptitude	100	29.46	9.119	0.015
Interest	100	40.13	10.764	

Interpretation

Table 1 reveals that the value of coefficient of correlation between aptitude and interest of students is 0.015 which is less than the table value of 0.195 at 0.05 level of significance. This means that it is not significant at 0.05 level of significance. It further means that there is no significant correlation between aptitude and interest of students in

science. Hence the

hypotheses 1," that there exists no significant correlation between aptitude of the students and their interest in science" is accepted.

Table 2: showing Coefficient of correlation between Reasoning Ability and Interest scores of government school students towards science

Correlation between Reasoning Ability and interest				
Variables	N	MEAN	STANDARD DEVIATION	Coefficient of correlation "r"
Reasoning Ability	100	12.72	4.672	0.298
Interest	100	40.13	10.764	

Interpretation

Table 2 reveals that the value of coefficient of correlation between reasoning ability and interest of students is 0.298 which is greater than the table value 0.254 at 0.01 level of significance. This means that it is significant at 0.01 level of significance. It further means that there is correlation between reasoning ability and interest of students in science. Hence the hypotheses 2, that "There exists no significant correlation between reasoning ability of the students and their interest in science" is not accepted.

Conclusion

On the basis of analysis of the data and interpretation of the results obtained through various statistical means, the following conclusions have been drawn.

- There is no significant correlation between aptitude of the students and their interest in science subject.
- There is a positive significant correlation between the reasoning ability and interest of students in science. Reasoning ability is in direct proportion with interest in science which means that as the value of interest increases the value of reasoning ability in science also increases.

Educational Implications

The present study has established (on the basis of correlation) that there exists significant correlation between the reasoning ability and interest of the students and also that there exists no correlation between aptitude and interest in science of students. So that

1. The teachers should tries to increase the interest of the students in the science subject in the class by using different methodology of teaching and approaches which will further help in developing aptitude and reasoning ability among students

2. Parents and children are advised not to take science as a field of study in future just on the basis of their interest because that can be extrinsic and temporary until unless they have aptitude in science. This will help in saving the resources and the precious time of the student.
3. Sufficient number of activities which helps in making science subject interesting and effective should be undertaken in the class. The teachers must ensure that all the students participate in those activities. These activities increase the confidence level of students.
4. The classroom atmosphere should be democratic so that each student gets a chance to speak and participate in the classroom activities and discussions.

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