National Journal of Multidisciplinary Research and Development
ISSN: 2455-9040
Impact Factor: RJIF 5.22
www.nationaljournals.com
Volume 2; Issue 3; September 2017; Page No. 519-521

A study on the attitude of secondary school students of Purba Medinipur district towards science education: A proposal

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Abstract
Modern civilization is based on science and our daily life rests solely on it. One must, therefore, know the basic principles and have a primary conception and knowledge of science without which man cannot live well purposefully and comfortably in our developing society today. Moreover, he cannot live in the society as a responsible and decent human being without the basic ideas of how science acts or tends to act. Attitudes are acquired and learned though varying experiences. One's attitude towards a subject is an acquired tendency or a deposition. Attitudes are to a great extent responsible for a particular behavior of a person towards a subject. We may, therefore, assume that attitude as a determining factor of conception is an acquired tendency which prepares a person to lead one in a certain way towards natural objects or a class of objects, subject to conditions preventing the environment.

Keywords: modern civilization, developing society, science education, attitudes of secondary school students

1. Introduction

For a considerable period of time I have been in touch with the Higher Secondary Schools specially belonging to the science group. I have felt with much pain the students' bewildered state of mind when they are called upon to select their subject of study.

Science is an attractive subject among numerous Subjects of study. It aims at creating future scientists, engineers, environmentalists and technologists, etc. The ideas of science are of great importance to everyone in the society. If science education is sufficiently made interesting to the readers, a genuinely high achievement will become easy to be achieved. The youth who demonstrate such high performance in science subjects will be increasingly motivated to follow avidly science education. But there should be proper learning strategies in this particular field of important studies. And these strategies of teaching and learning science subjects can be met by employing suitable teaching methods of high quality science teachers.

The study of science kindles an interest for enquiry of truth and a tendency to be removed from bias, thus encouraging creatively and generating in us a kind of inquisitiveness for the achievement of truth. The results of the investigation show that the students in general hold a favorable attitude towards science; male students than female students, possess a greater degree of positive attitude towards science in the types of school: science schools, single sex schools or in general higher secondary schools which were attended during the research works and have displayed more optimum effects on the students' attitudes to the subject, and they may be due to other variables that need further in-depth investigation in the subject. In rural areas students of higher secondary schools attempt to understand and follow the influential factors under-lying their attitudes towards science subject and the study of the subject has been conducted in a wide area using variegated research methodology, gathering data based on interviews and the ubiquitous exploration has yielded rich results..

These methods express the students' feelings and beliefs, and they also explore the characteristics of the factors influencing students' attitudes. These factors have been found to be very fruitful for the students' of higher secondary schools. Among these important matters are the interaction between the teachers and students and in most Tables they are very important topics. The all discussion started and ended in a friendly, congenial environment, and it is also very helpful for both the teachers and students.

In the sphere of medicine, nourishment, health-care, growth, cure of diseases and mental health, and all such science related subjects attract students to the study of science. In the sphere of industry, production of different types of useful goods, consumer goods, etc. and other things produced by electronics and electricity and conveyance, provide us comfort in the happy living and all these things attract students to study science. People's attitudes are environmentally influenced and they are formed and also transformed on the basis of the people's experiences which they achieve from the experiments they make. Attitudes are a learned behavior and they depend on the socio-cultural environment of the people. Children may imitate the attitude of their parents to start with. The teachers lend their condition to their students. Attitudes are achieved through one's own experiences also. Development of a person's attitude to anything or concept depends on the external experiences and the internal ones depending on the natural state of the concerned person's mind. An attitude, once formed, can also be changed but it takes time if their imprinted deep in the psyche or impressed strongly. A great deal of the school's work is directly related to the attitude the students, who have positive or negative attitude towards their

subjects, and the way the teachers teach among other things. Their attitude may or may not influence their accountability to the subjects and act as a motivating factor towards their courses of study. Their Attitude sometimes determines their judgment and interest towards a particulars subject and sometimes a topic. Faculty members or teachers are the main instruments of the students in molding their attitudes towards the learning of science and technology that can immensely expedite the development of the society. The faculty members or teachers are also equally responsible for their effectiveness in the learning process or system of the teaching and learning of science and technology. If the personal parameters of the academics of the faculty members or teachers are not up to the level of the secondary or higher secondary school level teaching capacity, the achievement of the students' attitudes towards science subjects or science and technology will change in future. The present research was carried out to study the relationship of academic achievement with the teaching attitude towards science and technology of the students and it is a very difficult problem increasing the anxiety of the higher secondary school level students.

2. Analysis of data

Table 1: Panskura B.B. high School Boys – 85

Score	C.I.	Mid. Point	f	Cf	X'	X'²	$f_{X'}$	fx'²
30 – 40	29.5 – 40.5	35	10	10	-3	9	-30	90
41 – 51	40.5 – 51.5	46	10	20	-2	4	-20	40
52 – 62	51.5 – 62.5	57	10	30	-1	1	-10	10
63 – 73	62.5 – 73.5	68	20	50	0	0	0	0
74 – 84	73.5 – 84.5	79	20	70	1	1	20	20
85 –95	84.5 – 95.5	90	15	85	2	4	15	60

$\sum f=N=85 \qquad \sum fx' = -25$

$fx'^2 = 220 \ (\sum fx'^2)^2 = 625$

Mean $= AM + \frac{\sum fx'}{N} X\ i = 68 + (-25)/85 \times 11$

$= 68 - 3.235$

$= 64.7647$

Median $= L + (\frac{N}{2} - \frac{Cf}{})/f \times i = 62.5 + (\frac{85/2-30}{20})x11$

$= 62.5 + (15-15)/5 \times 11$

$= 62.5+6.875 = 69.375$

Mode $= 3 \times$ Median $- 2 \times$ Mean

$= 3 \times 69.375 - 2 \times 64.7647$

$= 208.125 - 129.529$

$= 78.596$

S.D. $= i \times \sqrt{\{\frac{\sum fx'^2}{N} - (\sum_{N} fx')^2\}}$

$=11x\sqrt{(220/85 - 625/7225)}$

$= 11x\sqrt{(2.588 - 0.086)} = 11x\ 1.58$

$= 17.399$ Approx

Where, CI = Class Interval,
f = frequency,
Cf = Cumulative frequency X = mid point
AM = 68 and i = 11 $X_1 = (x - AM)/i$

Table 2: Bhogpur High School Boys – 125

Score	C.I.	Mid. Point	f	Cf	X_1	X'²	$f_{X'}$	fx'²
30-40	29.5-40.5	35	20	20	-3	9	-60	180
41-51	40.5-51.5	46	20	40	-2	4	-40	80
52-62	51.5-62.5	57	20	60	-1	1	-20	20
63-73	62.5-73.5	68	20	80	0	0	0	0
74-84	73.5-84.5	79	30	110	1	1	30	30
85-95	84.5-95.5	90	15	125	2	4	30	60

$\sum f=N=125 \qquad \sum fx' = -60$

$\sum fx'^2 = 370$

$\sum fx' = 3600$

Mean $= AM + \frac{\sum fx'}{N} xi = 68 + -60/125 \times 11$

$= 68 - 5.28 = 62.72$

Median $= L + (N - \frac{Cf}{2})/f \ X\ i = 62.5 + (\frac{125/2-60}{20}) \times 11$

$= 62.5+1.375 = 63.815$

Mode $= 3x$ Median $- 2$ xMean

$= 191.625 - 125.44$

$= 66.185$

S.D. $= I \times \sqrt{\{\frac{\sum fx'^2}{N\ N} - (\sum fx')^2\}}$

$=11x\sqrt{(370/125 - 3600/15625)}$

$= 11x\sqrt{(2.96 - 0.2304)} = 18.173$ Approx.

Where, CI = Class Interval,
f = frequency,
Cf = Cumulative frequency
X = Mid point

3. Performance Analysis

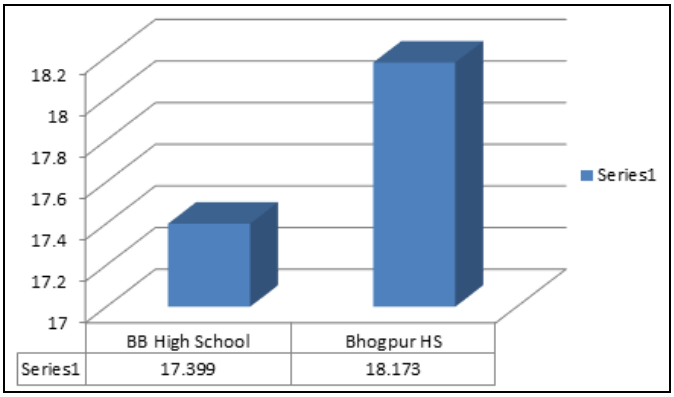

Fig 1

At present investigation, the following points of the Researcher works came out such as:

- To any prominent different find out regarding interest in Science and Technology of Secondary school students between rural(BBHS) and urban(BHS) students;
- How the level of interest grow up of Secondary students towards in Science and Technology education;
- In investigation of the Secondary school level students regarding interest in Science and Technology in rural and urban areas of the Purba Medinipur District of West Bengal.

This investigation represents one of the greatest cultural achievements of modern societies. There is no significant difference between the attitude of boys and Girls. Its means that gender does not affect the attitude of students Science learning. There is no significant difference between the attitude of rural and urban students. It is seen that rural and urban student are more interested towards Science and Technology. It is observed from this research work that in general students show positive attitude towards the Science and Technology.

4. Conclusions

Some may not like such changes. But here a question may arise whether the option of status quo is acceptable for the education of the future students of science and technology in the present era. In the present times, there rage with sensation of the scientific issues of genetic alternation and the addition of all kinds of world foods in the people's menu, global warming and others. In present situation our youth with the knowledge of science and technology may increase the distance that exists between science and technology and also its relation with the society.

Consequent to it is a question whether an advanced industrial society can ill afford to pay, both at the individual level where it might lead to the rejection of sound scientific advice, and/or at the social level where some limitations may be imposed on scientific research that can be potentially beneficial for the whole humanity.

5. References

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