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Effect of personal and location factors on the attitude of secondary school students towards science education

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Abstract
In the era a multiple choices, frequency and remarkable advancements which have a major effect on the decisions that govern our everyday life in respect of the people's attitude towards the study of science among the higher secondary school students of the areas where the study has been conducted. So, the decisions reached and the conclusions drawn from the research are the right tools for making further investigation in this field of study. Therefore, it is a positive attitude among students towards science studies and they also encourage the students of the higher secondary school level in the rural and deep village areas.

Keywords: science and technology, higher secondary students, attitudes of learning science and technology, socio-economic, problem related to environment

1. Introduction

It is revealed from the research papers that science and technology form very important aspects of life in all the countries of the world despite there being tremendous difference in their culture and level of development. But the development of a positive attitude towards science, scientists and taking science subjects as course of study in the students of the higher secondary school level, which has always been a constituent part of science education, has become increasingly a subject of concern. Students' learning interests and attitudes toward science have both been studied for decades and it in the same rate is going on today in the 21st century. It is argued that science and technology curriculum should be adjusted with the needs of learners of the different steams of education. It means that we cannot accept the conventional curriculum of science and technology which does not match with the Global development and culture.

Attitude mostly depends on the type of knowledge one acquires about the idea, the conception, or the person, or any object with whom or with w3hich the particular person comes directly or indirectly in contact with. Attitudes are imbibed and they are learned though varying experience which people gather and the process of gathering goes on unabated throughout the life. One's attitude towards a one's subject is an acquired tendency or a learnt deposition, a specific temperament both influencing and being influenced by social changes continuously taking place in the fast developing world.

Man naturally develops a short of attachment from his childhood or an enthusiasm or a particular favorable feeling towards his subject or any subject and his preference for some selected people whom he gets in the society around him during his day to day living. Attitudes are to a great extent also responsible for the building of the behavioral pattern of a person towards the subject he learns or the topic he deals with in his practical life. Therefore, we may safely say that attitude of a person to a thing or a person or a subject is a determining acquired tendency which prepares the person to act in a certain responsible way with a scientific object or class of objects or socio-economic conditions pervading the environment.

Attitudes are, thus, a learned behavioral activity which depends on socio-cultural environment of an individual. Children may imitate the attitude of their parents and elders in their childhood. The teachers also lend their share in the students' attitude formation. Attitudes are also nourished by one's own experience also and the experience is a common thing for no man is free from the indispensable impact of all-round progress the major share of which is perpetrated by the inventions of science.

Development of an attitude, it cannot be gainsaid, also depends on the external experience and internal natural state of the person concerned. Attitude, once formed, can also be changed but in takes time if they are imprinted or impressed deeper into the psyche of the person concerned. A great deal of the students' school's work is directly related to the attitude of the students to their subjects and the attitudes may have positive or negative influences upon the learning of their subjects, the way their teachers teach and other things of the school. Their Attitude is bound to have considerable impact on the accountability to the patrons of the subject and it is a motivating factor in their particular individual cases. Their Attitude determines their judgment and interest towards the particular subject and sometimes to a particular topic.

Faculty members and teachers are major instruments of the students' success or failure and regarding the formation of the

students' attitude towards the learning of science subject or science and technology and it can help the rapid and steady development of the society. The faculty or teachers are singularly responsible for the effective success of their students' efforts' in the learning process or the system of science study or the manner of teaching the scientific and technological topics in the schools' curricula. If the personal parameters of the academic environment of the faculty or the teaching community are not up to the satisfactory level in the secondary or higher secondary school, and the level teaching capacity is below the optimum, the formation and growth of the students' attitude towards science subjects or science and technology in general will suffer and there will not be any development the field of science and technology in future and in any country. But this matter is purely hypothetical and we have no reason to lose faith in this matter.

The present research, or rather, the investigation into people's and students' attitude to science is carried out to study the relationship of academic achievement of the learners with the academic world's attitude towards science subjects or science and technology. The task of the motivation of the students to study science fighting through odds, some environmental and also some economic, is a very difficult task and a cause of anxiety to the academics of secondary and higher secondary school levels of our educational infrastructure. It is found that the teaching aptitude level and the teaching skill, the expertise of the teachers are significant predictors of the academic achievement and results of the higher secondary school level students of the Purba Medinipur District along with other parts of the state and the country and to some extent to the whole world in general. It is certain that the wariness (anxiety) prevailing among the faculty members, the teachers, and the students will have a negative impact on the academic achievement of the students and this negative attitude must be checked, for, any laxity shown in this regard will result in the country's and the whole humanity's backwardness in the development of science and technology.

2. Research Methodology

To collect the data stratified sampling technique will be adopted. Groups will be formed on the basis of parents' education (less or well- educated) gender (male or female) and locality like rural or urban. Thus, the research will be based on 2X2X2 functional design. Therefore, there will be eight sub-groups and in each group there will be 50 students of secondary school of Purba Medinipur District from where the collected data-attitude and the scale will be used.

3. Direct method and indirect method

Direct method is related to the verbal report of the attitude. Indirect method refers to the interpretation of the attitude from the unsaturated or indirect responses. Generally the following devices are used for the purpose.

- Asking the individual directly how he feels about a subject – like questioning and interview technique;
- Asking to mark those statements from a list which he is in agreement with (Checklist);
- To indicate his degree of agreement or disagreement with a series of statements dealing with the same subject (Attitude Scale); and
- Questionnaire and interview with Item analysis or reliability or validity.

Indirect method of measurement of attitudes is the process of inferring with the attitude directly from the verbal report or expressed opinion has many limitations. One may conceal one's real attitude and may not really know what one feels and is unable to know one's attitude about a situation in the abstract. To avoid this problem it has been tried to make use of the measurement-method that are indirect or disguised in nature. In these method, the subjects are given opportunities to structure their own responses without letting them know the real purpose of the task. There may be a combination of verbal report and interpretive technique. Sorenson remarks: "Such factors as social experiences, propaganda, education and personal experience with different attitudes do make for modification and shift in people's predisposition towards objects, persons' ideas and situations is their environment." This above statement was published by Sorenson in the year 1977.

4. Results & Discussion

Table 1: S. S. Patna School, Boys – 230

Score	C.I.	Mid. Point	f	Cmf	X'	X'²	$f_{X'}$	fx'²
30 – 40	29.5 – 40.5	35	11	11	-1		-11	11
41 – 51	40.5 – 51.5	46	11	22	0		0	0
52 – 62	51.5 – 62.5	57	11	33	1		11	11
63 – 73	62.5 – 73.5	68	11	55	2		22	44
74 – 84	73.5 – 84.5	79	11	88	3		33	99
85 – 95	84.5 – 95.5	90	14	143	4		44	224

$\sum f=N=69$ $\sum fx'= 99$

$fx'^2 = 389$ $(\sum fx'^2)^2= 2.045$

Mean = $AM+\frac{\sum fx'}{N} xi = 46+ (99)/69 \times 11$

$= 46 + 15.78$

$= 61.78$

Median $= L + (\frac{N}{2} - Cf)/f \times i = 62.5+ (\frac{69/2-33}{})x11$

$= 62.5 + (34.5-16.5)/69 \times 11$

$= 62.5 + 2.871 = 65.371$

Mode $= 3 \times \text{Median} – 2 \times \text{Mean}$

$= 3x65.371 – 2x 61.78$

$= 196.113 – 123.56$

$= 72.553$

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

$= 11x\sqrt{(389/69 – 2.045)}$

$= 11x\sqrt{(5.638 – 2.045)} = 11x\ 1.895$

$= 20.845$ Approx

Where, CI = Class Interval,

f = frequency,

Cf = Cumulative frequency

X = mid-point

AM = 4 6 and i = 11

X_1 = $(x – AM)/i$

5. Conclusions

The main aim is to study of an interest of the students in the subject or Topics of Science and Technology in the areas of village of Purba-Medinipur, West Bengal. The researcher hopes that the results will be helpful for the development of the Science and Technology curriculum in the Secondary or higher Secondary school level at the present. Re-conclude your finding to with object of your studies.

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