

A STUDY OF ATTITUDE TOWARDS CHEMISTRY IN HIGHER SECONDARY STUDENTS IN RELATION TO THEIR ACADEMIC ACHIEVEMENT IN KANCHIPURAM DISTRICT

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ABSTRACT:

The present study was undertaken to probe the level of Chemistry attitudes and interests of the students of higher secondary level. The higher secondary stage forms a vital link of the present system of education. The higher secondary students are matured enough to have well formed Chemistry attitude and creativity. The present study the tools were used to collect the data Science-Chemistry attitude Scale by Mrs. Avinash Grewal publishing by – National Psychological Corporation, Kacheri Ghat, Agra- 4. To collect the information on selected variables like gender, Family type, medium of instruction type of school, economic status. The sample for the study was selected randomly. The sample consisted of 300 Students from Kanchipuram District. A total of 300 students, comprising 150 males and 150 females were drawn from various places around Kanchipuram. The following methods of analysis were used. Critical Ratio's ,Analysis of Variance, Chi-Square Analysis, Karl-Pearson's Product Moment Correlation Method ,Multiple Regression Analysis. The Major Finding of the Study It was found that there is no significant difference between boys and girls in their achievement in Chemistry among higher secondary school students. It was found that there is significant difference in attitude towards Chemistry and achievement among higher secondary school students with respect to the type of school (Boys school, Girls School, Co-Education school) .

Keywords: Attitude, Academic Achievement, Variables, Samples, Methods, Findings.

INTRODUCTION:

The body of knowledge includes facts, concepts and theories that are subject to error and change. The knowledge exists in the form of facts, concepts, principles and laws, hypothesis and theories. It is dynamic in nature and the Science information is constantly being rearranged and reoriented, in the light of new knowledge, never proves anything in absolute sense. Attitude has been a difficult concept to define adequately, primarily because it has been defined by so many, but also because of the world's differing lay uses and connotations. Academic achievement is of paramount importance particularly in the present socio-economic and cultural context. The world is becoming more and more competitive. Quality of performance has become the key factor for personal progress. In the school, great emphasis is placed on achievement right from the beginning of formal education. Moreover, the whole system of education revolves round the academic

achievement of students. In general terms, achievement refers to the scholastic or academic achievement of the students at the end of an education program. Achievement is the end product of all educational endeavours.

OBJECTIVES OF THE STUDY

To investigate the difference if any in chemistry Attitude owing to the differences in

- ✓ Gender
- ✓ Medium of Instruction
- ✓ Type of School
- ✓ Type of family
- ✓ Parental Income
- ✓ Father's Qualification
- ✓ Mother's Qualification

To examine the differences if any in Academic Achievement owing to differences in

- ✓ Gender
- ✓ Medium of Instruction
- ✓ Type of School
- ✓ Type of family
- ✓ Parental Income
- ✓ Father's Qualification
- ✓ Mother's Qualification

REVIEW OF RELATED LITERATURE :

Gunwant Dhatrak and Shashi Wanjari (2011) conducted a study on co-relational study of scientific attitude, creativity and scholastic achievement of secondary school students. A sample of 500 students studying in IX th standard students was selected. The result of the study revealed that

- i) There is negative correlation between attitude and scholastic achievement of secondary school students.
- ii) No significant relation is found between creativity and scholastic achievement of secondary school students.

Elakiya.M and A.Mary lily Pushpam (2010) has conducted a study to measure the level of scientific attitude among IXth standard students and influence of the background variables on scientific attitude. A sample of 244 students studying in IX th standard students was selected. The result of the study revealed that the level of scientific attitude of IXth standard in Coimbatore district is high. Gender and nature of school influence the scientific attitude of the students.

METHODOLOGY :

A research design is the arrangement of condition for collection and analysis of data.

The research design is the conceptual structure within the research is conducted. It constitutes as blue print for the collection, measurement and analysis data. As such research design includes an outline of what the researcher will do from writing the hypothesis to the final analysis of the data collected. No separate tool was prepared by the investigator to measure the academic achievement of the pupils. The total mark second in their annual public examination was taken as the achievement scores higher secondary students. The sample for the study was selected by stratified random sampling. Because use of the whole sample divided in to various

categories representative of 300 XI standard students were selected from Government, Aided and Unaided schools from Kanchipuram District.

For the present study the following tools were used to collect the data.

- Science attitude Scale by Mrs. Avinash Grewal publishing by – National Psychological Corporation, Kacheri Ghat, Agra- 4.
- Marks secured in the 10 standard students' public examination were taken as the Academic Achievement scores.
- Personal data sheet.

PILOT STUDY

To check the feasibility of the tools before it is administered on a large sample, a pilot study was conducted on a sample of 50 Chemistry students of standard XI and XII.

RELIABILITY AND VALIDITY OF THE TOOLS

In this present study the reliability co efficient of 0.68 has been obtained for this inventory through odd even method using spearman Brown's formula.

$$R_1 = 2 r_2 / 1+r_2$$

R_1 = Reliability co efficient

R_2 = Co efficient of correlation

In the present study the validity co efficient is computed as the square root of the reliability co efficient and this works out to be $\sqrt{0.68} = 0.824$

HYPOTHESES WISE ANALYSIS

Further the data was subjected to appropriate statistical tests for testing the hypothesis.

I. Chemistry Attitude

H.1 There is no significant difference between the Chemistry Attitude and Gender.

Table I

Table showing the critical ratios of the Differences in the
Chemistry Attitude for Gender

Variables	Group	N	Mean	SD	Critical Ratio	Level of Significance
Gender	Male	150	68.75	17.279	2.163	S

	Female	150	64.81	14.054		
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From the above table, it is observed that the calculated 't' value 2.163 is greater than the table value of 1.96 at 0.05 level. Therefore there is significant difference between the mean of attitude towards chemistry revealed for that the boys and girls among the higher secondary students based on Gender.

Hence the Null hypothesis is rejected.

H.2 There is no significant difference between the Chemistry Attitude and Medium of Instruction.

Table II

Table showing the critical ratios of the Differences in the Chemistry Attitude for Medium of Instruction

Variables	Group	N	Mean	SD	Critical Ratio	Level of Significance
Medium of Instruction	Tamil	150	65.48	18.388	1.423	NS
	English	150	68.68	12.741		

From the above table, it is observed that the calculated 't' value 1.423 is less than the table value of 1.96 at 0.05 level. Therefore there is no significant difference between the mean of attitude towards chemistry revealed for that the boys and girls among the higher secondary students based on Medium of Instruction.

Hence the Null hypothesis is accepted.

MAJOR FINDINGS OF THE STUDY

It was found that there is significant difference in attitude towards chemistry and achievement among higher secondary school students with respect to the type of school (Boys school, Girls School, Co-Education school). It was found that there is no significant difference in management of school (Government, Government aided, and Private) has any influence with respect to the attitude towards chemistry among Higher Secondary Students. It was found that there is significant difference in achievement in chemistry among higher secondary school students with respect to the type of Management. It was found that there is significant influence on the achievement in chemistry with respect to the medium of instruction. It was found that there is no significant influence on the attitude towards chemistry with respect to the medium of instruction.

EDUCATIONAL IMPLICATIONS OF THE PRESENT STUDY

Every school organizes science fair, at least once a year. This should include the exhibits of the students as well as demonstration. Talks by experts, film shows on scientific topics, debates and declamations, magic

shows, scientific pays etc., can also be organized. Both the teacher and the pupils should collaborate towards the success of the fair, though it should be mainly an activity of the scientific work in practical, it can make an appeal to visitors, which the academic type of activities may fail to provide.

1. In science education, student should acquire knowledge of the fundamentals of science in everyday life.
2. They should develop ability to apply the knowledge acquired in everyday life.
3. They should acquire experimental skill such as,
 - a. Handling apparatus and instruments.
 - b. Arranging apparatus for experiments.
 - c. Preserving apparatus, specimens, models etc.,
4. They should acquire constructional skills such as,
 - a. Improving simple instruments and appliances
5. They should develop drawing skills such as,
 - a. Drawing and sketching certain objects, instruments and arrangements.
 - b. Photographing certain objects and specimens.

SUGGESTIONS FOR FURTHER STUDY

Many studies have been conducted hitherto keeping the student's academic achievement as the dependent variable. This study is also of the same kind. The effect of independent variables viz. attitude towards chemistry and achievement in chemistry has been studied in this context. An attempt can be made to find out the effective achievement on the levels of students interests in the study of the subjects and the favorableness of attitude in it. This will result in making one more interested in the study and also pave the way for developing a more favorable attitude towards chemistry.

1. The study was limited to the students XI and XII standard only. It could be extended to all students, college students, etc.,
2. This study could be extended to other language groups.

CONCLUSION

The purpose of the present investigation was to study the chemistry attitude with reference to some selected personal variables. This study may enrich the educators in the field of chemistry and the findings of this study may secure as a database for future research.

REFERENCE:

Altman, E.R. Michigan University. "The Effects of Rank in Class and Size of High School Academic Achievement of Central Michigan College". Journal of Educational Research.

Darchinpur "A Study of Science Achievement Science Attitude and Problem Solving Ability among Secondary School Students in Alzawal. Ph.D., Education worth Eastern Hill University". Cited at Butch M.B. Fifth Survey of Research in Education. P.1239.

Dickinson “A Study of Achievement in Relation to their Attitude towards Science: Journal of Education in Research.

Kumar Udaya Sam “The teaching of general science and the development of scientific attitude in secondary school students in relation to achievement in general science. M.Phil education Annamalai University”. Fifth survey of research education by M.B.Bouch Vol – II, Page 1247.

Rao Digumarti Bhaskara, “A comparative study of scientific attitude, scientific aptitude and achievement in Biology at secondary school level Ph.D education Osmania University cited at Butch M.B. fifty survey of research in education. P.1258.

Wylie relation between academic achievement and academic self-concept. Journal of educational psychology. Vol 84.

