

A STUDY ON ACHIEVEMENT IN CHEMISTRY AND SCIENTIFIC APTITUDE AMONG HIGHER SECONDARY STUDENTS IN PONDICHERRY

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Abstract

The present study is an attempt to find out the Achievement in Chemistry and Scientific Aptitude among higher secondary students in Pondicherry. Simple random sampling technique has been used in the selection of the sample. As many as 600 higher secondary students were selected for this purpose and Achievement test in Chemistry and Scientific Aptitude test battery were distributed to them and their responses were collected and computed according to the objectives framed. Results found that majority of the higher secondary students showed positive and significant relationship of Achievement in Chemistry and Scientific Aptitude and the same trend has been seen in respect of the sub-samples too.

Keywords: *Achievement in Chemistry, Scientific Aptitude, higher secondary students.*

Introduction

Achievement is a task oriented behaviour that allows the individual's performance to be evaluated according to some internally or externally imposed criterion that involves the individual in competing with others or otherwise some standard of excellence-(Smith). Scientific Aptitude is a potentiality of future accomplishment in Science without regard to past training and experience. Without right Aptitude towards a subject one cannot achieve or show any interest in a subject. Like-wise without good Scientific Aptitude an individual does not achieve much in Science.

Objectives of the Study

1. To find out the significant relationship between Achievement in Chemistry and Scientific Aptitude among Higher Secondary Students.
2. To find out the significant difference between Achievement in Chemistry and Scientific Aptitude among Higher Secondary Students with respect to their sub-samples.

Hypotheses of the Study

1. There is no significant difference between Achievement in Chemistry and Scientific Aptitude among Higher Secondary Students.
2. There is no significant difference between the Achievement in Chemistry and Scientific Aptitude among Higher Secondary Students with respect to their sub-samples.

Methodology

In the present study Normative Survey Method has been used, since it deals with present condition.

Sampling Technique Used in This Study

Simple Random Sampling Technique has been used in this study. Among the various regions in the Union Territory of Pondicherry, only Pondicherry region has been fixed as the field for this study.

Tool

1. An achievement test in Chemistry for XI standard students was constructed and standardized by the researcher.
2. Scientific Aptitude test battery by K.K. Agarwal Bareilly and Saroj Aurora (2005).

Statistical Techniques Used in this Study

In the present study Correlation Analysis has been used

Data Analysis and Findings

Table No. 1 Correlation Co – Efficient between the Scores of Achievement in Chemistry and Scientific Aptitude of Higher Secondary Students

Variables	N	Correlation Co-efficient ('r')	Level of Significance
Achievement in Chemistry	600	0.628**	S
Scientific Aptitude	600		

The correlation coefficient is 0.628 found between Achievement in Chemistry and Scientific Aptitude among Higher Secondary students, which is significant at 0.01 level for 599 df. It is concluded that there is a positive and significant relationship between Achievement in Chemistry and Scientific Aptitude among Higher Secondary students.

Table No. 2 Coefficient of Correlation between Achievement in Chemistry and Scientific Aptitude of Students with Regard to Sub - Samples

S.No	Sub Sample	Number	r	Table value	Level of significance
1	Gender				
	Male	291	0.033	3.29	Significant at 0.01 level
	Female	309	0.024	0.09	Not Significant at 0.05 level
2	Type of Management				
	Government	301	0.026	2.99	Significant at 0.01 level
	Private	299	0.030	0.00	Not Significant at 0.05 level
3	Nature of school				
	Boys School	90	0.031	1.49	Not Significant at 0.05 level
	Girls School	90	0.015	6.49	Significant at 0.01 level
	Co-Education School	420	0.065	0.01	Not Significant at 0.05 level

4	Location of School				
	Urban	302	0.040	0.99	Not Significant at 0.05 level
	Rural	298	0.010	3.59	Significant at 0.01 level
5	Type of Family				
	Nuclear	335	0.038	13.79	Significant at 0.01 level
	Joint	265	0.138	4.69	Significant at 0.01 level
6	Father's Education				
	Illiterate	215	0.018	3.39	Significant at 0.01 level
	Matriculate	216	0.034	3.09	Significant at 0.01 level
	Degree	118	0.031	1.99	Significant at 0.01 level
	Professional Degree	51	0.020	0.02	Not Significant at 0.05 level
7	Mother's Education				
	Illiterate	285	0.056	2.79	Significant at 0.01 level
	Matriculate	212	0.028	5.69	Significant at 0.01 level
	Degree	82	0.057	0.07	Not Significant at 0.05 level
	Professional Degree	21	0.032	0.06	Not Significant at 0.05 level
8	Community				
	FC	59	0.090	0.69	Not Significant at 0.05 level
	BC	205	0.007	0.29	Not Significant at 0.05 level
	MBC	210	0.003	9.49	Significant at 0.01 level
	SC	108	0.053	2.39	Significant at 0.01 level
	ST	18	0.024	0.09	Not Significant at 0.05 level
9	Religion				
	Hindu	519	0.036	0.04	Not Significant at 0.05 level
	Muslim	44	0.047	0.08	Not Significant at 0.05 level
	Christian	37	0.001	3.16	Significant at 0.01 level

By using the Spearman Brown Prophecy formula, the Zero order Correlation has been computed and the values are given in Table No. 2. It may be inferred from the above Table No. 2 that there is a positive significant relationship between Achievement in Chemistry and Scientific Aptitude among Higher Secondary students. It is also observed from the obtained results that the following sub samples: Gender (Male), Type of management (Government), Nature of school (Girls), Location of the School (Rural), Type of Family (Nuclear/Joint), Father's Educational Qualification (Illiterate/ Matriculate/ Degree), Mother's Educational Qualification (Illiterate/ Matriculate), Community (MBC/SC), Religion (Christian) are significantly correlated. But the sub samples such as Gender (Female), Type of management (Private), Nature of school (Boys/ Co-Education), Location of the school (Urban), Father's Educational Qualification (Professional Degree), Mother's Educational Qualification

(Degree/ Professional Degree), Community (FC/BC/ST), Religion (Hindu/Muslim) are not significantly correlated.

Therefore it may be concluded that there is a significant relationship between Achievement in Chemistry and Scientific Aptitude among sub samples, Gender (Male), Type of management (Government), Nature of school (Girls), Location of the school (Rural), Type of Family (Nuclear/Joint), Father's Educational Qualification (Illiterate/ Matriculate/ Degree), Mother's Educational Qualification (Illiterate/ Matriculate), Community (MBC/SC), Religion (Christian) are significantly correlated. But the sub samples Gender (Female), Type of management (Private), Nature of school (Boys/ Co-education), Location of the school (Urban), Father's Educational Qualification (Professional Degree), Mother's Educational Qualification (Degree/ Professional Degree), Community (FC/BC/ SC), Religion (Hindu/Muslim) are not significantly correlated.

Conclusion

From the above analysis, it is concluded that there is a positive and significant relationship between Achievement in Chemistry and Scientific Aptitude among Higher Secondary students and the same trend has been seen in respect of the sub-samples too.

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