



NEED FACTORS AS THE CORRELATES OF ACHIEVEMENT IN SCIENCE OF IX STANDARD STUDENTS

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ABSTRACT

The aim of this research article is to find out the relationship between the need factors of ix standard students and their achievement in science. In order to achieve this, the investigator used survey method. All the students studying standard IX in the secondary and higher secondary schools in Kanyakumari district formed the population of the present study. From the population, the investigator selected 774 students using simple random sampling technique. By using self-constructed tools, the researcher collected the data from the sample. Mean, Standard Deviation, 't' test and Product Moment Correlation were used to analyze the data. The finding revealed that the need order of IX standard students is significantly correlated with their achievement in science. But, their need affiliation, need achievement, need change and need persistence are not significantly correlated with their achievement in science.

KEYWORDS: Need Factor, Achievement in Science, Correlates.

INTRODUCTION :

The present century is an age of science and we are living in a world of science. Our life and the environment in which live are greatly influenced by the impact of science. Our basic needs such as food, shelter, clothing and other needs such as transport, automobiles, electrical appliances, electronic equipments, communication systems etc. are based on scientific information.

Science has become an indispensable part of day-to-day life. Considering the role of science in human life, it is included as a subject of study even from the very early stage. Students, teachers and parents give topmost priority to the study of science to farewell in terms of achievement in science. The nature of the course opted by the students and aspired by the parents is largely determined by the students' performance in science at the secondary level.

NEED AND SIGNIFICANCE OF THE STUDY

It is quite natural for the students to devote adequate time in their schedule for the study of science. As we are aware of the academic performance of a student is not solely determined by a single factor but a host of factors. Educationists divide these factors into internal and external factors. Internal factors operate within an individual and they are better termed as psychological factors. External factors operate outside an individual and they are better labeled as environmental factors.

Internal factors such as attention, interest, aspiration, attitude motivation, thinking, temperament, intelligence, self-concept, self-esteem, self-reliance, self-assertion, need achievement, need order, need change, need affiliation, need persistence etc. have a definite say in shaping the personality of a student. External factors such as home environment, school environment, social environment, technological environment etc. exert significant influence on the personality of the student. It is quite true that both internal and external factors also affect the scholastic performance of the students. It is a known fact that

internal factors within an individual can be better developed, exploited and controlled if needed than the external factors.

Internal factors selected for investigation in the present research work include need factors such as need-affiliation, need-order, need-achievement, need-change and need-persistence. It is assumed that the need factors exert significant influence on the achievement of the school going students. The present study is an attempt to investigate the extent to which the select need factors influence the achievement in science of the standard IX students. Once the extent of influence of these factors on achievement in science is established, measures can be suggested for implementation so that students can improve their performance in science and enter into courses and prospective careers of their choices.

TITLE OF THE STUDY

NEED FACTORS AS THE CORRELATES OF ACHIEVEMENT IN SCIENCE OF IX STANDARD STUDENTS

OPERATIONAL DEFINITIONS

Need factors

Need implies the feeling of deficiency we require. It further implies our desire and effort directed towards meeting out these deficiencies.

Correlates

By correlates, the investigator means the extent of relationship between need factors and achievement in science.

Achievement in Science

By achievement in science, the investigator means the score obtained by the IX standard students in an objective type test conducted by the investigator.

OBJECTIVES

1. To study the level of need factors of the IX standard students.
2. To study the level of achievement in science of the IX standard students.
3. To find the significant difference in the need factors of IX standard students with regard to gender, medium of study, type of school and use of computers.
4. To find the significant difference in the achievement in science of IX standard students with regard to gender, medium of study, type of school and use of computers.
5. To find the significant relationship between need factors and achievement in science of IX standard students.

NULL HYPOTHESES

1. There is no significant difference in the need factors of IX standard students with regard to gender.
2. There is no significant difference in the need factors of IX standard students with regard to medium of study.
3. There is no significant difference in the need factors of IX standard students with regard to type of school.
4. There is no significant difference in the need factors of IX standard students with regard to use of computers.
5. There is no significant difference in the achievement in science of IX standard students with regard to gender.
6. There is no significant difference in the achievement in science of IX standard students with regard to medium of study.

7. There is no significant difference in the achievement in science of IX standard students with regard to type of school.
8. There is no significant difference in the achievement in science of IX standard students with regard to use of computers.
9. There is no significant relationship between need factors and achievement in science of IX standard students.

METHODOLOGY IN BRIEF

Survey method was used in the present study. The population for the study is all the students studying standard IX in the secondary and higher secondary schools in Kanyakumari district. From the population, the investigator selected 774 students using simple random sampling technique. The investigator used self-constructed tools to measure the need factors and achievement in science of the chosen sample. Mean, Standard Deviation, 't' test and Pearson's Product Moment Correlation were used for analyzing the data.

DATA ANALYSIS

Objective - 1

To study the level of need factors of the IX standard students.

Table - 1.
Level of Need Factors of IX Standard Students

Need-factors	Low		Average		High	
	N	%	N	%	N	%
Need Affiliation	138	17.83	506	65.37	130	16.80
Need Order	36	4.65	598	77.26	140	18.09
Need Achievement	104	13.44	554	71.58	116	14.99
Need Change	106	13.70	556	71.83	112	14.47
Need Persistence	68	8.79	634	81.91	72	9.30
Total	134	17.31	550	71.06	90	11.63

From the above table, it is inferred that 17.83% of the students have low, 65.37% of them have average and 16.80% of them have high level need affiliation. 4.65% of the students have low, 77.26% of them have average and 18.09% of them have high level need order. 13.44% of the students have low, 71.58% of them have average and 14.99% of them have high level need achievement. 13.70% of the students have low, 71.83% of them have average and 14.47% of them have high level need change. 8.79% of the students have low, 81.91% of them have average and 9.30% of them have high level need persistence. 17.31% of the students have low, 71.06% of them have average and 11.63% of them have high level need factors.

Objective - 2

To study the level of achievement in science of the IX standard students.

Table - 2.
Level of Achievement in Science of IX Standard Students

	Low		Average		High	
	N	%	N	%	N	%
Achievement in Science	132	17.05	534	68.99	108	13.95

From the above table, it is inferred that 17.05% of the students have low, 68.99% of them have average and 13.95% of them have high level achievement in science.

Null Hypothesis - 1

There is no significant difference in the need factors of IX standard students with regard to gender.

Table -3.
Difference in the Need Factors of IX Standard Students with regard to Gender

Dimensions	Gender	N.	Mean	SD	't' Value	Table Value	Remark
Need Affiliation	Male	288	52.66	5.28	0.36	1.96	NS
	Female	486	52.76	5.66			
Need Order	Male	288	98.5	4.96	2.14	1.96	S
	Female	486	99.68	5.58			
Need Achievement	Male	288	81.18	8.32	1.60	1.96	NS
	Female	486	81.86	7.28			
Need Change	Male	288	83.98	9.12	1.39	1.96	NS
	Female	486	85.32	9.02			
Need Persistence	Male	288	84.12	5.28	1.82	1.96	NS
	Female	486	84.62	5.58			
Total	Male	288	400.44	25.76	2.78	1.96	S
	Female	486	404.22	26.12			

It is inferred from the above table that the calculated 't' values are greater than the table value at 5% level of significance. Hence, the null hypothesis is rejected in the case of need factors in total and in the dimension - need order. But, the calculated 't' values are less than the table value at 5% level of significance. Hence, the null hypothesis is accepted in the case of the dimensions - need affiliation, need achievement, need change and need persistence.

Null Hypothesis - 2

There is no significant difference in the need factors of IX standard students with regard to medium of study.

Table - 4.
Difference in the Need Factors of IX Standard Students with regard to Medium of Study

Dimensions	Medium of Study	N.	Mean	SD	't' Value	Table Value	Remarks
Need Affiliation	Tamil	240	52.46	5.58	1.28	1.96	NS
	English	534	52.84	5.50			
Need Order	Tamil	240	98.94	5.22	1.50	1.96	NS
	English	534	99.38	5.46			
Need Achievement	Tamil	240	81.40	7.72	0.70	1.96	NS
	English	534	81.70	7.68			
Need Change	Tamil	240	84.62	9.00	0.60	1.96	NS
	English	534	84.92	9.12			
Need Persistence	Tamil	240	83.92	4.98	2.62	1.96	S
	English	534	84.66	5.66			
Total	Tamil	240	401.32	24.32	1.58	1.96	NS
	English	534	403.48	26.76			

It is inferred from the above table that the calculated 't' values are greater than the table value at 5% level of significance. Hence, the null hypothesis is rejected in the case of need factors in total and in the dimensions - need affiliation, need order, need achievement and need change. But, the calculated 't' values are less than the table value at 5% level of significance. Hence, the null hypothesis is accepted in the case of the dimension - need persistence.

Null Hypothesis - 3

There is no significant difference in the need factors of IX standard students with regard to type of school.

Table - 5.
Difference in the Need Factors of IX standard students with regard to Type of School

Dimensions	School Type	N	Mean	SD	't' Value	Table Value	Remarks
Need Affiliation	Govt.	526	52.70	5.50	0.40	1.96	NS
	Private	248	52.76	5.58			
Need Order	Govt.	526	99.08	5.44	1.58	1.96	NS
	Private	248	99.14	5.28			
Need Achievement	Govt.	526	81.56	8.04	0.56	1.96	NS
	Private	248	81.68	6.86			
Need Change	Govt.	526	84.86	9.26	0.48	1.96	NS
	Private	248	84.74	8.70			
Need Persistence	Govt.	526	84.52	5.84	1.88	1.96	NS
	Private	248	84.26	5.56			
Total	Govt.	526	402.74	26.94	0.38	1.96	NS
	Private	248	402.98	24.02			

It is inferred from the above table that the calculated 't' values are less than the table value at 5% level of significance. Hence, the null hypothesis is accepted.

Null Hypothesis - 4

There is no significant difference in the need factors of IX standard students with regard to use of computers.

Table - 6.
Difference in the Need Factors of IX Standard Students with regard to Use of Computers

Dimensions	Use of Computers	N	Mean	SD	't' Value	Table Value	Remarks
Need Affiliation	Yes	542	52.50	5.24	1.15	1.96	NS
	No	232	53.24	6.12			
Need Order	Yes	542	98.76	4.92	2.44	1.96	S
	No	232	100.34	6.20			
Need Achievement	Yes	542	80.88	7.82	3.00	1.96	S
	No	232	83.32	7.10			
Need Change	Yes	542	84.10	8.72	2.32	1.96	S
	No	232	86.52	9.68			
Need Persistence	Yes	542	84.14	5.12	1.51	1.96	NS
	No	232	85.12	6.14			

Total	Yes	542	400.36	24.52	2.69	1.96	S
	No	232	408.54	28.52			

It is inferred from the above table that the calculated 't' values are greater than the table value at 5% level of significance. Hence, the null hypothesis is rejected in the case of need factors in total and in the dimension - need order, need achievement and need change. But, the calculated 't' values are less than the table value at 5% level of significance. Hence, the null hypothesis is accepted in the case of the dimensions - need affiliation and need persistence.

Null Hypothesis - 5

There is no significant difference in the achievement in science of IX standard students with regard to gender.

Table - 7.

Difference in the Achievement in Science of IX Standard Students with regard to Gender

Gender	N	Mean	SD	't' Value	Table Value	Remarks
Male	288	63.99	4.30	1.27	1.96	NS
Female	486	66.99	4.78			

It is inferred from the above table that the calculated 't' value is less than the table value at 5% level of significance. Hence, the null hypothesis is accepted.

Null Hypothesis - 6

There is no significant difference in the achievement in science of IX standard students with regard to type of school.

Table - 8.

Difference in the Achievement in Science of IX Standard Students with regard to Type of School

Type of School	N	Mean	SD	't' Value	Table Value	Remarks
Govt.	526	68.34	4.46	3.02	1.96	S
Private	248	60.65	4.78			

It is inferred from the above table that the calculated 't' value is greater than the table value at 5% level of significance. Hence, the null hypothesis is rejected.

Null Hypothesis - 7

There is no significant difference in the achievement in science of IX standard students with regard to medium of study.

Table - 9.

Difference in the Achievement in Science of IX Standard Students with regard to Medium of Study

Medium of Study	N	Mean	SD	't' Value	Table Value	Remarks
Tamil	240	70.07	4.26	2.51	1.96	S
English	534	63.99	4.73			

It is inferred from the above table that the calculated 't' value is greater than the table value at 5% level of significance. Hence, the null hypothesis is rejected.

Null Hypothesis - 8

There is no significant difference in the achievement in science of IX standard students with regard to use of computers.

Table - 10.
Difference in the Achievement in Science of IX Standard Students
with regard to Use of Computers

Use of Computers	N	Mean	SD	't' Value	Table Value	Remarks
Yes	542	65.62	4.70	0.34	1.96	NS
No	232	66.47	4.40			

It is inferred from the above table that the calculated 't' value is less than the table value at 5% level of significance. Hence, the null hypothesis is accepted.

Null Hypothesis - 9

There is no significant relationship between need factors and achievement in science of IX standard students.

Table - 11.
Relationship between Need Factors and Achievement in Science of IX Standard Students

Dimensions	N	Calculated 'r' Value	Table Value	Remark
Need Affiliation	774	0.070	0.100	Not Significant
Need Order	774	0.163	0.100	Significant
Need Achievement	774	0.022	0.100	Not Significant
Need Change	774	0.053	0.100	Not Significant
Need Persistence	774	0.020	0.100	Not Significant
Total	774	0.073	0.100	Not Significant

It is inferred from the above table that the calculated 'r' value is greater than the table value at 5% level of significance. Hence, the null hypothesis is rejected in the case of the dimension - need order. As, the calculated 'r' values are greater than the table value at 5% level of significance. Hence, the null hypothesis is rejected in the need factors in total and in the dimensions - need affiliation, need achievement, need change and need persistence.

FINDINGS

The male and female IX standard students differed significantly in their need factors in total and in the dimension - need order. The female students are found better in their need factors in total and in the dimension - need order. But, the male and female IX standard students do not differ significantly in their need affiliation, need achievement, need change and need persistence.

The Tamil and English medium students do not differ significantly in their need factors in total and in the dimensions - need affiliation, need order, need achievement and need change. But, they differed significantly in their need persistence. The English medium students are found better in their need persistence.

There is no significant difference in the need factors of IX standard students with regard to type of school.

The IX standard students who are using computers and not using computers differed significantly in their need factors in total and in the dimensions - need order, need achievement and need change. The students who are not using computers are found better in their need factors in total and in the dimensions - need order, need achievement and need change. But, they do not differ significantly in their need affiliation and need persistence.

There is no significant difference in the achievement in science of IX standard students with regard to gender.

The IX standard students studying in government schools and private schools differed significantly in their achievement in science. The government school students have better achievement in science.

The Tamil medium and English medium students differed significantly in their achievement in science. The Tamil medium students have better achievement in science.

There is no significant difference in the achievement in science of IX standard students with regard to use of computers.

The need order of IX standard students is significantly correlated with their achievement in science. But, their need affiliation, need achievement, need change and need persistence are not significantly correlated with their achievement in science.

RECOMMENDATIONS

On the basis of the findings of the study, the investigator would like to recommend the following:

Male students may be motivated to need the lives and achievements of the eminent personalities who reached great heights by their very need order. Through informal interactions, teachers can offer tips to enhance their need order.

Tamilnadu students may be advised not to lose hope where they are met with failures. They can be appraised how repeated efforts yield dividends to them anecdotes from the lives of great men and women can be narrated to make an emphasis on sustained and continued efforts.

Students may be motivated to browse Internet and seek guidelines in strengthening their need factors especially need order, need achievement and need change.

Private school teachers may take some extra efforts such as preparing question banks, holding extra classes to improve the performance of the students in science.

English medium students must be discouraged to go for rote memory and encouraged to go for learning with thorough understanding.

Need order in the students can be strengthened by the teachers through organization of co-curricular activities and motivating the students to participate and come out in shining colours through developing orderly procedures.

CONCLUSION

The present study clearly established that among the need factors, need order is significantly and positively correlated with the achievement in science of the chosen sample. It brings out the need to strengthen need order in the students and help them to achieve better performance in science.

REFERENCES

1. Advanced Learner's Dictionary. (2005). Oxford University Press. New York.
2. David G. Mers. (2006). Social psychology, New Delhi: Tata McGraw Hill Publishing Company.
3. John W. Santrock. (2006). Educational Psychology, New Delhi: Tata McGraw Hill Publishing Company.
4. Laura E. Berk. (2003). Childhood Development, New Delhi: Prentice Hall of India Pvt. Ltd.