

**ACADEMIC ACHIEVEMENT IN CHEMISTRY AND EMOTIONAL
INTELLIGENCE OF HIGHER SECONDARY SCHOOL STUDENTS**

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Abstract

The investigation of the present study academic achievement in chemistry and emotional intelligence of higher secondary school students. The Academic achievement in chemistry Test (AACT) constructed and validated by the investigator and Emotional Intelligence Scale (EIS) Anukool Hyde, Sanjyotha and Upender Dar (2001) were used to collect the data from a sample of 600 higher secondary school students studying in Cuddalore District of Tamilnadu State in India. The survey method had been followed and simple random sampling technique was used in administration of the research tools. Findings revealed that the average level of academic achievement in chemistry and high emotional intelligence of higher secondary school students, there is significant difference in the gender and locality of the school of higher secondary school students with respect to their academic achievement in chemistry and emotional intelligence, there is significant and positive relationship between academic achievement in chemistry and emotional intelligence of higher secondary school students.

Key Words: *Academic Achievement in Chemistry, Emotional Intelligence and Higher Secondary School Students*

1. Introduction

Adesokan (2002) asserted that in spite of realization of the recognition given to chemistry, among the science subjects, it is evident that the students still show negative interest, attitude and aptitude towards the subject, which leads to poor performance and low enrolment. Those who have positive interest, attitude and aptitude toward Chemistry tend to perform well in the subject. So, in this study, Achievement in Chemistry of first year higher secondary students is selected as the main variable.

Mayer and Salovey (1997) have expanded their definition to include the capacity to perceive. David W Chan emotions, assimilate emotion-related feelings, understand the information of these emotions, and manage these emotions. Rather than as a single ability, Emotional Intelligence is now conceptualized as a set of abilities that ranges from the relatively simple, such as distinguishing emotional facial expressions, to the more complex and integrated, such as understanding the causes and consequences of emotions in everyday interpersonal situations and how they interplay with motivation.

2. Need and Importance of the Study

In the present Indian education academic achievement seems to be the focuses. This is the main factor that decides the future of the student. In view of its great importance, a large number of studies were conducted on the factors which are influence the academic achievement of the students.

An emotionally intelligent individual leads a happy, healthy and peaceful life. If He/she is at ease with himself/herself, surrounding and other fellow beings, they can labeled mentally healthy persons. They express the characteristics like adoptable and resilient mind, cheerful and optimistic outlook, well regulated instincts and habits, insight into one's own conduct, good tempered, socially adoptable and having a definite philosophy of life realistic imagination etc. Therefore the development of emotions is extremely important for a harmonious development of the personality. Proper training and education will go a long way to enable the young people to control their emotions and obtain mental balance and stability. Emotions are the prime motive forces of thought and conduct and their control is very important.

3. Review of Literature

Manickavasagan (2019) investigated the relationship of Achievement in Chemistry with Scientific Aptitude and Chemistry Learning Environment of Higher secondary students of Cuddalore district of Tamilnadu. For this study a sample of 800 higher secondary students were selected through simple random sampling method. The result of the study shows that there is a significant positive relationship between the Achievement in Chemistry & Scientific Aptitude, Achievement in Chemistry & Chemistry Learning Environment of higher secondary students. Further it is Scientific Aptitude and of Higher Secondary Students. Further it is noted that there exist a positive relationship between the Scientific Aptitude & Chemistry Learning Environment of higher secondary students. From the findings of the

study, to increase the positive magnitudes the scientific aptitude and chemistry learning environment for better learning in Chemistry among students the suitable recommendations were also weaved through which the student community will be benefitted.

Kumar (2020) attempted to study the emotional intelligence of t higher secondary school students. A random sampling method was used. The sample consisted of 300 higher secondary school students. The result shows that emotional intelligence was independent of gender, subject, locality of the school, type of family, father's occupation, and family income. The level of higher secondary school student's emotional intelligence was average in nature. The female students are better than the male students on their emotional intelligence.

4. Operational Definitions of the Study

Academic achievement in chemistry

For the present study Academic achievement in chemistry is considered as the total scores obtained by an individual in the test conducted by the investigator in chemistry from the selected units of chemistry text book prescribed for standard XI covering the category of objectives.

Emotional Intelligence

Emotional intelligence refers to the ability to process emotion - laden information competently and to use it to guide cognitive activities like problem solving and to focus energy on required behaviors.

5. Objectives of the Study

1. To study the level of academic achievement in chemistry of higher secondary school students.
2. To study the level of emotional intelligence of higher secondary school students.
3. To study the significant difference, if any in the academic achievement in chemistry of higher secondary school students based on gender.
4. To study the significant difference, if any in the academic achievement in chemistry of higher secondary school students based on locality of the school.
5. To study the significant difference, if any in the emotional intelligence of higher secondary school students based on gender.
6. To study the significant difference, if any in the emotional intelligence of higher secondary school students based on locality of the school.

7. To study the relationship between academic achievement in chemistry and emotional intelligence of higher secondary school students.

6. Hypotheses of the Study

1. The level of academic achievement in chemistry of higher secondary school students is low.
2. The level of emotional intelligence of higher secondary school students is low.
3. There is no significant difference in the academic achievement in chemistry of higher secondary school students based on gender.
4. There is no significant difference in the academic achievement in chemistry of higher secondary school students based on locality of the school.
5. There is no significant difference in the emotional intelligence of higher secondary school students based on gender.
6. There is no significant difference in the emotional intelligence of higher secondary school students based on locality of the school.
7. There is no significant relationship between academic achievement in chemistry and emotional intelligence of higher secondary school students.

7. Method of the Study and Sample Used

The normative survey method was adopted in the present study. In order to collect the required data, Academic achievement in chemistry Test (AACT) constructed and validated by the investigator and Emotional Intelligence Scale by Anukool Hyde, Sanjyotha and Upender Dar (2001). Simple random sampling technique has been employed to collect the data from 600 higher secondary school students studying in government, aided and private schools of Cuddalore district.

8. Analysis of Data and Interpretation

1. Descriptive Analyses (Mean and Standard Deviation)
2. Differential Analyses ('t' test and 'F' test) and
3. Co-relational Analyses (Karl Pearson Product Moment Correlation)

Descriptive Analysis

Hypothesis 1

The level of academic achievement in chemistry of higher secondary school students is low.

Table 1

Mean and Standard Deviation for the Academic achievement in chemistry Scores of Higher Secondary School Students

Variable	N	Mean	SD
Academic achievement in chemistry	600	23.48	5.59

From table-1, it is observed that the calculated mean and standard deviation for the academic achievement in chemistry scores of the entire sample were found to be 23.48 and 5.59 respectively. One can get a maximum score of 30 on academic achievement in chemistry tool. The mean score lies between the average value range (19-28), so the framed hypothesis (1) is rejected and it is concluded that the level of higher secondary school students academic achievement in chemistry is average.

Hypothesis 2

The level of emotional intelligence of higher secondary school students is low.

Table 2
Mean and Standard Deviation for the Emotional Intelligence Scores of Higher Secondary School Students

Variable	N	Mean	SD
Emotional Intelligence	600	113.23	17.61

From table-2, it is observed that the calculated mean and standard deviation for the mental health scores of the entire sample were found to be 163.01 and 17.61 respectively, which is higher than the mid value of 102., so the framed hypothesis 2 is rejected and it is concluded that the level of emotional intelligence of higher secondary school students is high.

Differential Analysis

Hypothesis 3

There is no significant difference in the academic achievement in chemistry of higher secondary school students based on gender.

Table3
Mean Difference of Academic achievement in chemistry Scores of Higher Secondary School Students with regard to Gender

Variable	Gender	N	Mean	SD	't' Value	Level of Significance at 0.05 Level
Academic achievement in chemistry	Male	304	22.94	5.98	4.74	Significant
	Female	296	27.04	6.94		

Table-3 shows that the computed 't' value for the mean academic achievement in chemistry scores between male and female higher secondary school students [$t_{(600)} = 4.74 > p$] is significant. Hence, the framed null hypothesis 3 is rejected and it is concluded that there is a significant difference in the academic achievement in chemistry based on gender of higher secondary school students. It is also inferred that female students are having more academic achievement in chemistry than the male students.

Hypothesis 4

There is no significant difference in the achievement in chemistry of higher secondary school students based on locality of the school.

Table 4
Mean Difference of Achievement in Chemistry Scores of Higher Secondary School Students with regard to Locality of the School

Variable	Locality of the School	N	Mean	SD	't' Value	Level of Significance at 0.05 Level
Achievement in Chemistry	Rural	220	21.89	5.59	5.17	Significant
	Urban	380	25.84	6.93		

Table-4 shows that the computed 't' value for the mean achievement in chemistry scores between rural and urban higher secondary school students [$t_{(600)} = 5.17 > p$] is significant. Hence, the framed null hypothesis 4 is rejected and it is concluded that there is a significant difference in the achievement in chemistry based on locality of the school of higher secondary school students. It is also inferred that urban school students are having more achievement in chemistry than the rural school students.

Hypothesis 5

There is no significant difference in the emotional intelligence of higher secondary school students based on gender.

Table 5
Mean Difference of Emotional Intelligence Scores of Higher Secondary School Students with regard to Gender

Variable	Gender	N	Mean	SD	't' Value	Level of Significance at 0.05 Level
Emotional Intelligence	Male	304	113.34	17.93	4.74	Significant
	Female	296	118.45	19.15		

Table-5 shows that the computed 't' value for the mean emotional intelligence scores between male and female higher secondary school students [$t_{(600)} = 4.74 > p$] is significant. Hence, the framed null hypothesis 5 is rejected and it is concluded that there is a significant difference in the emotional intelligence based on gender of higher secondary school students. It is also inferred that female students are having more emotional intelligence than the male students.

Hypothesis 6

There is no significant difference in the emotional intelligence of higher secondary school students based on locality of the school.

Table 6
Mean Difference of Emotional Intelligence Scores of Higher Secondary School Students with regard to Locality of the School

Variable	Locality of the School	N	Mean	SD	't' Value	Level of Significance at 0.05 Level
Emotional Intelligence	Rural	220	112.52	17.75	3.16	Significant
	Urban	380	116.05	18.15		

Table 6 shows that the computed 't' value for the mean emotional intelligence scores between rural and urban higher secondary school students [$t_{(600)} = 3.16 > p$] is significant. Hence, the framed null hypothesis 6 is rejected and it is concluded that there is a significant difference in the emotional intelligence based on locality of the school of higher secondary school students. It is also inferred that urban school students are having more emotional intelligence than the rural school students.

Correlation Analysis

Hypothesis 7

There is no significant relationship between achievement in chemistry and emotional intelligence of higher secondary school students.

Table 7
Showing the Correlation Values between Achievement in Chemistry and Emotional Intelligence of Higher Secondary School Students based on Entire Sample

Variables	N	'r' value	Level of Significance
Achievement in Chemistry and Emotional Intelligence	600	0.583**	Significant

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table-7 shows that, the co-efficient of correlation between achievement in chemistry and emotional intelligence is found to be [N=600, r=0.583 at 0.01 level] which indicates that there is a positive correlation between achievement in chemistry and emotional intelligence. Therefore, hypothesis 7 is rejected and it is concluded that there is positive and significant relationship between achievement in chemistry and emotional intelligence of higher secondary school students.

9. Findings of the Study

- The level of higher secondary school students academic achievement in chemistry is average.
- The level of higher secondary school students emotional intelligence is high.
- There is a significant difference in the academic achievement in chemistry based on gender of higher secondary school students.
- There is a significant difference in the academic achievement in chemistry based on locality of the school of higher secondary school students.
- There is a significant difference in the emotional intelligence based on gender of higher secondary school students.
- There is a significant difference in the emotional intelligence based on locality of the school of higher secondary school students.
- There is positive and significant relationship between academic achievement in chemistry and mental health of higher secondary school students.

10. Conclusion

In the present study of the academic achievement in chemistry and emotional intelligence of higher secondary school students, findings revealed that the average level of academic achievement in chemistry and high emotional intelligence, there is significant difference in the gender and locality of the school of higher secondary school students with respect to their academic achievement in chemistry and emotional intelligence, there is significant and positive relationship between academic achievement in chemistry and emotional intelligence of higher secondary school students.

11. References

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