

# INFLUENCE OF SELF-ESTEEM ON THE ACADEMIC ACHIEVEMENT OF HIGHER SECONDARY BIOLOGY STUDENTS

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## ABSTRACT

*Higher secondary is a stage of transition in a student's life, both academically and psychologically. Biology forms an important part of the syllabus of life science. It is a compulsory subject for the higher secondary school examination. A biology student is engaged in a human activity that is directed towards seeking new knowledge about living things. A student tries to acquire new concepts of biology through practicing science or passing through the process of biology. India shall need specialists in the fields of medicine, health, agriculture and animal husbandry. The talent in these fields shall come from biology. Hence the investigation is mainly focused on the influence of self-esteem on the academic achievement of higher secondary biology students. For the present study the investigator randomly selected a sample of 925 higher secondary biology students (438 males and 487 females). After framing necessary objectives and hypotheses appropriate analysis was carried out for the collected data. From the analysis it was found that there was significant relationship between self-esteem and academic achievement with reference to background variables.*

## INTRODUCTION

An integrated self-concept acts as a motivational force in maintaining mental health and influencing the learning situations. A positive relationship has been found between self-esteem and intelligence and self-esteem and scholastic achievement irrespective of the subjects belonging to either of the sexes, to forward or backward communities, to urban or rural communities, although the degree of intelligence or achievement may vary from person to person. There is a perfect relationship between high scholastic achievement and a positive self-concept, while those with low scholastic achievement have got a negative self-concept. Marsh (1992) said that the relationship of self-esteem to school achievement is very specific. General self-esteem and non-academic aspects of self-esteem are not related to academic work; general academic achievement measures are related moderately to academic success. Specific measures of subject-related self-esteem are highly related to success in that content area.

Using linear discriminate analysis Byrne (1990) showed that academic self-esteem was more effective than academic achievement in differentiating between low-track and high-track students. (Hamachek, 1995) also asserts that self-esteem and school achievement are related. The major issue is the direction of the relationship:

does self-esteem produce achievement or does achievement produce self-esteem? George and Berliner (1992) state "the evidence is accumulating, however, to indicate that level of school success, particularly over many years, predicts level regard of self and one's own ability (Bridgeman and Shipman 1978; Kifer, 1975); whereas level of self-esteem does not predict level of school achievement, the implication is that teachers need to concentrate on the academic success and failures of their students. It is the student's history of success and failure that gives them the information with which to assess themselves" (p - 159)

If academic achievement leads to increased self-esteem, but self-esteem is a better predictor of being a low-track or high-track student, it would appear that there is some intervening variable. James states that the intervening variable is personal expectation. His formula is self-esteem = success + pretensions.

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## SIGNIFICANCE OF THE STUDY

Self-esteem tends to be fairly resistant to change once it is established. Individuals who have little self-esteem are afraid to let down their guard. Convinced that they are inadequate, the individuals with very little self-esteem are likely to be maladjusted. Those with good self-esteem have a capacity that will affect their adult life, the capacity to give and receive love. Self-esteem of students plays a vital role in their behaviour. The objective of education is to enrich the values in the individual. Through the utilitarian, disciplinary, cultural and social values of education, the needs of the learners are fulfilled. Self-actualization is the highest need of an individual. For attaining self-actualization the person should reach high in his self-esteem. Hence self-esteem is the important influencing factor in education. That is why the investigator intended to examine as to what extent these self-related variables and the self as described by these variables influence in the educational process.

## OBJECTIVES OF THE STUDY

1. To find out the level of self-esteem and its dimensions of higher secondary biology students.
2. To find out the significant difference between a) boys and girls b) rural and urban higher secondary biology students in their self-esteem and its dimensions.
3. To find out the level of the academic achievement of higher secondary biology students with reference to sex.
4. To find out the significant difference between a) boys and girls b) rural and urban higher secondary biology students in their academic achievement.
5. To find out the significant relationship, if any, between self-esteem and the academic achievement of biology students at the higher secondary level with reference to background variables.

## HYPOTHESES

1. There is no significant difference in self-esteem and its dimensions of higher secondary biology students with reference to sex
2. There is no significant difference in self-esteem and its dimensions of higher secondary biology students with reference to the nativity of the students.

3. There is no significant difference in their academic achievement with reference to sex.
4. There is no significant difference in their academic achievement with reference to the nativity of the students.
5. There is no significant relationship between self-esteem and academic achievement with reference to background variables.

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## METHOD ADOPTED FOR THE PRESENT STUDY

After reviewing the characteristics of the different methods of educational research, the investigator decided to use the survey method for the present study.

## POPULATION OF THE STUDY

The population of this study is the higher secondary school students studying in Kanyakumari, Tirunelveli and Thoothukudi districts in Tamilnadu.

## SAMPLE

The investigator has used the stratified random sampling technique to select a sample of 925 students (438 males and 487 females).

## TOOL USED

### 1. Self-esteem Inventory

The researcher employed for his investigation the Self-esteem Inventory for adolescents prepared by Karunanidhi (1996).

### 2. Source of Achievement in Biology

The marks in biology in their half yearly exams conducted by the school as recorded in the respective school registers were taken as the achievement score in biology.

## STATISTICAL TECHNIQUES USED

For the present study, the investigator has used the following statistical techniques: Percentage analysis, mean and standard deviation, "t" test and Pearson product moment correlation.

Table 1

## LEVEL OF SELF-ESTEEM AMONG HIGHER SECONDARY BIOLOGY STUDENTS

Dimensions	Low		Average		High	
	No	%	No	%	No	%
Competency	150	16.2	628	67.9	147	15.9
Global self-esteem	154	16.6	598	64.6	173	18.7
Moral and self-control	142	15.4	647	69.9	136	14.7
Social esteem	139	15	654	70.7	132	14.3
Family	146	15.8	679	73.4	100	10.8
Body and physical appearance	124	13.4	657	71	144	15.6
Self-esteem	123	13.3	633	68.4	169	18.3

It is inferred from the above table that 16.2%, 67.9% and 15.9% of higher secondary students have low, average and high level of competency respectively. 16.6%, 64.6% and 18.7% of them have low, average and high level of global self-esteem respectively. 15.4%, 69.9% and 14.7% of them have low, average and high level of moral and self-control respectively. 15.0%, 70.7% and 14.3% of them have low, average and high level of social esteem respectively. 15.8%, 73.4% and 10.8% of them have low, average and high level of family respectively. 13.4%, 70.1% and 15.6% of them have low, average and high level of body and physical appearance respectively. In toto 13.3%, 68.4% and 18.3% of them have low, average and high level of self-esteem respectively.

**Null Hypothesis: 1**

There is no significant difference in self-esteem and its dimensions of higher secondary biology students with reference to sex.

Table 2  
DIFFERENCE BETWEEN BOYS AND GIRLS IN THEIR SELF-ESTEEM

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Dimensions	Boys (N=438)		Girls (N=487)		Calculated 't' value	Remark at 5% level
	Mean	SD	Mean	SD		
Competency	45.2	4.76	44.79	6.32	0.96	NS
Global self-esteem	45.3	5.1	46.23	7.35	2.31	S
Moral and self-control	38	3.78	38.65	4.8	2.4	S
Social	35.4	3.96	36.36	4.26	3.59	S
Family	32.5	3.7	34.25	4.43	6.41	S
Body and physical appearance	25	3.26	26.02	3.49	4.71	S

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between boys and girls in their competency. But there is a significant difference between boys and girls in their global self-esteem, moral and self-control, social esteem, family, body and physical appearance and self-esteem. By comparing the mean scores girls are better than boys in self-esteem.

**Null Hypothesis: 2**

There is no significant difference in self-esteem and its dimensions of higher secondary biology students with reference to the nativity of the students.

Table 3  
DIFFERENCE IN RURAL AND URBAN STUDENTS IN THEIR SELF-ESTEEM

Dimensions	Rural students (N=405)		Urban Students (N=520)		Calculated 't' value	Remark at 5% level
	Mean	SD	Mean	SD		
Competency	45.9	5.29	44.23	5.79	4.51	S
Global self-esteem	46.3	5.95	45.34	6.71	2.31	S
Moral and self-control	37.7	4.72	38.83	3.98	4.04	S
Social	34.9	4.28	36.65	3.89	6.32	S
Family	33.3	4.87	33.56	3.57	1.12	NS
Body and physical appearance	24.7	3.53	26.15	3.2	6.46	S
Total Self-esteem	228	2054	225.91	19.9	1.77	NS

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between rural and urban students in their family and self-esteem. But there is a significant difference between rural and urban students in their competency, global self-esteem, moral and self-control, social esteem and body and physical appearance. By comparing the mean scores rural students are better than urban students in the dimensions of competency and global self-esteem. The urban students are better than rural students in the dimensions of moral and self-control, social esteem, body and physical appearance.

**Table 4**

**LEVEL OF ACADEMIC ACHIEVEMENT OF BOYS AND GIRLS**

Variables	Low		Average		High	
	No	%	No	%	No	%
Boys	81	18.5	280	63.9	77	17.6
Girls	85	17.5	317	65.1	85	17.5
Achievement	166	17.9	597	64.5	162	17.5

It is inferred from the above table that 18.5% of the boys have low, 63.9% average and 17.6% high level of academic achievement. Among the girls 17.5% have low, 65.1% average and 17.5% high level of academic achievement. 17.9% have low, 64.5% average and 17.5% high level of academic achievement.

**Null Hypothesis: 3**

There is no significant difference in their academic achievement with reference to sex.

**TABLE 5**

**DIFFERENCE BETWEEN BOYS AND GIRLS IN THEIR ACADEMIC ACHIEVEMENT**

Category	Mean	SD	Count N	Calculated value 't'	Remark
Boys	126.18	27.05	438	3.3	S
Girls	132.05	26.82	487		

(At 5% level of significance, the table value of 't' is 1.96)

Since the calculated value of 't' is greater than the table value for 923 degrees of freedom at 5% level, the hypothesis is rejected. Therefore there is significant difference in academic achievement of higher secondary students of biology with reference to sex. By comparing the mean scores girls were found to be better than boys in academic achievement.

**Null Hypothesis: 4**

There is no significant difference in students' academic achievement with reference to their nativity.

**TABLE 6**

**DIFFERENCE BETWEEN RURAL AND URBAN STUDENTS IN THEIR ACADEMIC ACHIEVEMENT**

Category	Mean	SD	Count N	Calculated value 't'	Remark
Rural	126.86	26.32	405	2.39	S
Urban	131.15	27.53	520		

(At 5% level of significance, the table value of 't' is 1.96)

Since the calculated value of 't' is greater than the table value for 923 degrees of freedom at 5% level, the hypothesis is rejected. Therefore there is significant difference in the academic achievement of higher secondary students in biology with reference to the nativity of the students. By comparing the mean scores urban students are found to be better than rural students in academic achievement.

**Null Hypothesis: 5**

There is no significant relationship between self-esteem and academic achievement with reference to background variables.

**Table 7**

**RELATIONSHIP BETWEEN SELF-ESTEEM AND ACADEMIC ACHIEVEMENT WITH REFERENCE TO BACKGROUND VARIABLES**

S. No	Variable	Categories	"r" value	Table value	Result
1	Sex	Male	0.376	0.088	S
		Female	0.234	0.088	S
2	Nativity of the learner	Rural	0.392	0.088	S
		Urban	0.244	0.088	S
3	Type of the management	Government	0.265	0.16	S
		Aided	0.24	0.139	S
		Self-financing	0.485	0.16	S

Since the calculated value of 'r' is greater than the table value at 5% level of significance, the hypothesis is rejected. Therefore there is significant relationship between self-esteem and academic achievement with reference to background variables.

## FINDINGS & DISCUSSION

The percentage score for self-esteem of biology higher secondary students is average. There is significant difference between boys and girls in their global self-esteem, moral and self control, social esteem, family, body and physical appearance and total self esteem. Girls are better than boys in self-esteem. This may be due to their culture, family background and to the various types of exposure. There is significant difference between rural and urban students in their competency, global self-esteem, moral and self-control, social esteem, body and physical appearance. Rural students are better than urban students in the dimensions of competency and global self-esteem. The investigator is of the opinion that the various bad practices and habits which are not prevalent among rural students as compared to modern urban society might have helped them have better self-esteem. The urban students are better than rural students in the dimensions moral and self-control, social esteem, body and physical appearance. This may be due to the fact that the facilities and opportunities provided in urban schools promoted their self-esteem.

Female students have higher level of achievement in biology than the male students. Normally, female students remain at home most of the time after the school is over and they put serious efforts in their studies. This may in turn result in their higher achievement in biology. There is significant difference between boys and girls in their academic achievement. Girls are better than boys. This may due their hardworking nature towards achievement without any distraction. There is significant difference between rural and urban higher secondary school students in their academic achievement. Urban students have high self-esteem. This may be due to the fact that urban students have complete infrastructural facilities for their studies. Even in their home, the parents are ready to offer separate study room with necessary facilities like study table with chair, lighting, reference books etc. There is significant relationship between self-esteem and academic achievement with reference to background variables. The academic development is attained because of imbibing the values like self-esteem and hence the presence of self-esteem has positive influence on academic achievement.

## CONCLUSION

High self-esteem quickens the work, while low self-esteem slows down the work leading to low motivation, and inhibits the capacity of human beings to care for themselves. Hence a growing number of people in society

no longer have sufficient energy or means of self-reliance (mentally or physically) and have to rely on state provision. So, there is lack of self respect and a lack of respect for others. It leads to discrimination and poverty. In addition to routine class room academic activities, all faculty students should be encouraged to explore themselves in order to gain self-esteem. The teachers, parents and the society should encourage students to enhance their self-esteem.

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