

A STUDY ON CRITICAL THINKING ABILITY AND ACHIEVEMENT AMONG SECONDARY SCHOOL PUPILS IN MADURAI DISTRICT

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Abstract

Critical Thinking, in other words, is a rational study of decision-making methods and improvement of judgment-skills. It is not only about how we reflect and examine facts, but also how we use those facts to make a decision upon a path of exploit and act upon them. Accomplishment is an imperative pace of grave reasoning, as the whole perception of Critical reasoning turns about acting on solid, indisputable proof. The reasoning is to use obtainable information to development some information connected to it and decide whether it is factual or fake. It is this excellence of reasoning that has made the human contest change from being a gathering of cave-dwellers to obtaining the coveted top spot in the creature world. Though, human reasoning is not forever perfect because it is not always based on logic. It has been frequently observed that human way of thinking is prejudiced by affecting bias. One of these emotional biases is discrimination. People discover it tricky to arrange their thoughts in a rational, reliable and reasoned way. Critical view is a cognitive movement connected with using the various aspects of the mind such as absorption, classification, assortment and judgment. Critically thinking is the effort to request and respond inquiries scientifically. It means asking the most useful questions in the most productive sequence to yield a coherent, and credible story.' Instead of accepting 'at face value' what you read or hear, critical thinkers look for evidence, and appropriate reasons for behaving something to be true. It is very much important in the life and educational activities of senior secondary school students. Through efficient decisive thinking, the students' academic achievement will be enhanced and pave the way for new inventions and discoveries.

Keywords: *Critical Thinking Ability and Achievement*

Need for the Study

Several people can discover it hard to arrange their thoughts in a rational, regular, and reasoned way. Critical thinking is a cognitive motion related with using the various aspects of the mind. Learning to imagine in critically investigative and evaluative ways means using psychological processes such as attention, classification, assortment, and judgment. It is very much important in the life and activities of secondary school pupils. By successful critical thinking, the pupil's academic achievement will be enhanced and cover the way for new creations and discoveries. Development of decisive thinking ability in pupils will lead them not only for the higher academic achievement but also make them useful persons in civilization. It study attempted to determine and measure the critical thinking ability of secondary school pupils and thereby suggest ways and means improve the same.

Terms and Definitions

Critical Thinking Ability - refers to a complete mental process such as attention, categorization, selection, and judgment.

Achievement – refers to the score obtained by the secondary school pupils in the half-yearly examinations.

Secondary School Pupils- refer to those who are studying in IX and X standard under Tamil Nadu State Board syllabus in the Madurai District.

Variables of the Study

Dependent Variables-

1. Critical Thinking Ability
2. Achievement

Independent Variables

1. Sex : Male / Female
2. Standard : Ninth std. / Tenth std.
3. Reading Science Fictions : Yes / No
4. Library Visit : Frequently / Rarely
5. Food Habit : Vegetarian / Non-vegetarian

Objectives of the Study

1. To determine the relationship between Critical Thinking Ability and Achievement among Secondary School Pupils in terms of the select population variables.
2. To measure and find out whether there is a significant difference in Achievement among Secondary School Pupils in terms of the select population variables.
3. To measure and determine whether there is a significant difference in Critical Thinking Ability among Secondary School Pupils in terms of the select population variables.

Hypotheses of the Study

1. Critical Thinking Ability and Achievement are significantly correlated.
2. Each of the population variables exerts a significant influence on Secondary School Pupils' Achievement.
3. Each of the population variables exerts a significant influence on Secondary School Pupils' in Critical Thinking Ability.

Methodology in Brief

- **Design:** Descriptive,
- **Method:** Normative,
- **Technique:** Survey
- **Sample:** A random sample of 232 Secondary School Pupils from the Madurai district with due representation to the select population variables, viz. Sex, Standard, Reading Science Fictions, Library Visit, and Food Habit.

Tools Used

1. General Information Sheet structured by the Investigator.
2. Critical Thinking Ability Scale developed by Ramakrishnan.G (2013).

Statistical Treatments

1. Test of significance of Pearson's product-moment correlation (r).
2. 't' test for significance of the difference between the means of large independent samples.

Results and Discussions

'Correlation between Critical Thinking Ability and Achievement

The 'r' between Critical Thinking Ability and Achievement is found to be -0.205. This is found to be higher than that of the table value at 0.05 level is 0.129. Hence there is a negligibly negative relationship between Critical Thinking Ability and Achievement.

Critical Thinking Ability among Secondary School Pupils in Madurai District

The **empirical average** of Critical Thinking Ability among Secondary School Pupils in Madurai district is found 70.41, while the **theoretical average** is 50 only. This shows that Critical Thinking Ability among Secondary School Pupils in the Madurai district is found to be well above the average level.

Table 1 Results of test of significance of difference between the mean scores of critical thinking ability among secondary school pupils in the Madurai district: Population Variables - Wise

Sl.No.	Variable	Sub-Variables	N	M	S.D.	't' value	Significance at 0.05 level
1.	Sex	Male	76	69.00	11.20	-1.357	Not Significant
		Female	156	71.09	10.72		
2.	Standard	Ninth std.	168	72.74	10.62	5.993	Significant
		Tenth std.	64	64.29	9.16		
3.	Reading Science Fictions	Yes	162	72.19	10.38	3.826	Significant
		No	70	66.27	11.02		
4.	Library Visit	Frequently	177	71.73	10.64	3.381	Significant
		Occasionally	55	66.15	10.73		
5.	Food Habit	Vegetarian	52	64.02	9.74	-5.270	Significant
		Non-vegetarian	180	72.26	10.53		

Critical Thinking Ability and Sex

The calculated 't' value (1.357) is **lesser than** the table value (1.96) at 0.05 level of significance. It shows that there is **no significant difference** in Critical Thinking Ability between male and female Secondary School pupils in the Madurai district.

Critical Thinking Ability and Standard

The calculated 't' value (5.993) is greater **than** the table value (1.96) at 0.05 level of significance. It shows that there is a **significant difference** in Critical Thinking Ability between ninth and tenth standard pupils in the Madurai district.

Critical Thinking Ability and Reading Science Fictions

The calculated 't' value (3.826) is greater **than** the table value (1.96) at 0.05 level of significance. It shows that there is a **significant difference** in Critical Thinking Ability between pupils reading science fiction and not reading science fiction in secondary schools in the Madurai district.

Critical Thinking Ability and Library Visit

The calculated 't' value (3.381) is greater **than** the table value (1.96) at 0.05 level of significance. It observes that there is a **significant difference** in Critical Thinking Ability between pupils visiting the library frequently and occasionally of secondary schools in the Madurai district.

Critical Thinking Ability and Food Habit

The calculated 't' value (5.270) is greater **than** the table value (1.96) at 0.05 level of significance. It shows that there is a **significant difference** in Critical Thinking Ability between vegetarian and non-vegetarian pupils of secondary schools in the Madurai district.

Achievement among Secondary School Pupils in Madurai District

The **empirical average** of Achievement among Secondary School Pupils in the Madurai district is found 58.77, while the **theoretical moderate** is 50 only. It shows that Academic Achievement among Secondary School Pupils in the Madurai district is found, just above the average level.

Table 2 Results of Test of Significance of the Difference between the Mean Scores of Achievement among Secondary School Pupils in the Madurai district: Population Variables – Wise

Sl. No.	Variable	Sub-Variables	N	M	S.D.	't' value	Significance at 0.05 level
1.	Sex	Male	76	58.12	7.67	0.199	Not Significant
		Female	156	58.33	7.17		
2.	Standard	Ninth std.	168	57.43	7.88	3.417	Significant
		Tenth std.	64	60.42	5.03		
3.	Reading Science Fictions	Yes	162	57.08	8.06	4.869	Significant
		No	70	60.99	4.12		
4.	Library Visit	Frequently	177	57.68	7.55	2.420	Significant
		Occasionally	55	60.13	6.21		
5.	Food Habit	Vegetarian	52	59.58	5.52	1.773	Not Significant
		Non-vegetarian	180	57.88	7.73		

Achievement and Sex

The calculated 't' value (0.199) is **lesser than** the table value (1.96) at 0.05 level of significance. It shows that there is **no significant difference** in Achievement between male and female Secondary School Pupils in the Madurai district.

Achievement and Standard

The calculated 't' value (3.417) is greater **than** the table value (1.96) at 0.05 level of significance. It shows that there is a **significant difference** in Achievement between ninth and tenth standard Secondary School Pupils in Madurai district.

Achievement and Reading Science Fictions

The calculated 't' value (4.869) is greater **than** the table value (1.96) at 0.05 level of significance. It shows that there is a **significant difference** in Achievement between pupils reading science fictions and not reading science fictions in secondary schools in the Madurai district.

Achievement and Library Visit

The calculated 't' value (2.420) is greater **than** the table value (1.96) at 0.05 level of significance. It shows that there is a **significant difference** in Achievement between pupils visiting library frequently and occasionally of secondary schools in the Madurai district.

Achievement and Food Habit

The calculated 't' value (1.773) is lesser **than** the table value (1.96) at 0.05 level of significance. It shows that there is **no significant difference** in Achievement between vegetarian and non-vegetarian secondary school pupils in the Madurai district.

Conclusions

The main conclusions emerged out of the study are presented below:

1. The relationship between Critical Thinking Ability and Academic Achievement is negligibly negative among Secondary School Pupils.
2. The Critical Thinking Ability among Secondary School Pupils in the Madurai district is well above the average level.
3. Critical Thinking Ability among Secondary School Pupils in the Madurai district is dependent upon standard; Reading Science Fictions; Library Visits; and Food Habit.
4. Critical Thinking Ability among Secondary School Pupils in the Madurai district is independent upon Sex only.
5. The Academic Achievement is just above the average level.
6. Achievement among Secondary School Pupils in the Madurai district is dependent upon- Standard; Reading Science Fictions; and Library Visits.
7. Achievement among Secondary School Pupils in the Madurai district is independent upon- Sex; and Food Habit.

Educational Implications

Though there is no relationship between Critical Thinking Ability and Academic Achievement among the pupils of secondary schools, there is a significant difference in respect of the variables: standard (9th and 10th), reading science fiction, library visits, and food habit. But, in to, the Critical Thinking Ability is well above the average level.

Hence, a systematic orientation to the pupils to enhance their critical thinking ability in their academic subjects is needed. It will pave the way for new inventions and discoveries that are wanted for developing the society of India.

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