

## CONCEPT ATTAINMENT IN CHEMISTRY AMONG XI STANDARD STUDENTS

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### ABSTRACT:

Education is a powerful instrument of social and economic change. Education is really important to us. It is the knowledge of putting one's potentials to maximum use. We consider education as a very precious tool in life. It cannot be measured by money, fame and other things. Without education people wouldn't have their high developed skills and talents that would help them become successful both in our careers, family in making right decisions in life and to become aware of our environment. The educational system today is result oriented. So it is very important to make them aware of understanding the basic concepts in chemistry. If the concepts are understood by the students they can easily answer the questions asked in the subject chemistry that too the twisted type questions and HOTS (Higher Order Thinking Skill) type questions. This will lead to the high score in academics. The academic achievement of the students is directly proportional to the concept attainment in the subjects.

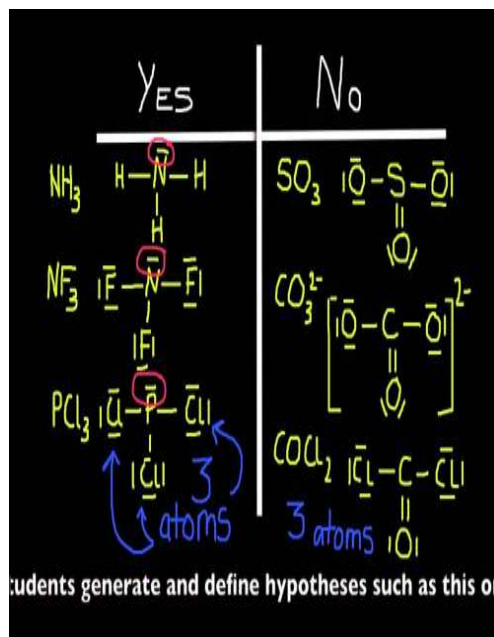
### KEYWORDS:

Concepts, Higher order thinking, Academic achievement.

### INTRODUCTION:

Teaching is an art as well as a science. As an art, it portrays the imaginative and artistic abilities of the

teacher in creating a worthwhile situation in the classroom in which the learners learn and receive the immediate and ultimate goal of education. As a science, it points to the logical, mechanical and procedural steps to be followed to attain an effective accomplishment of goals. Concept Attainment is an indirect instructional strategy that uses a structured



request process. It depends on the work of Jerome Bruner. In idea accomplishment, understudies make sense of the qualities of a gathering or classification that has as of now been framed by the instructor. To do as such, understudies look into cases that contain the properties of the idea with illustrations that don't contain those qualities. They then separate them into two gatherings. Idea fulfillment, then, is the quest for and recognizable proof of properties that can be utilized to recognize illustrations of a given gathering or classification from

non-samples. Concept attainment is designed to clarify ideas and to introduce aspects of content.

### NEED FOR THE STUDY

Concept attainment is designed to clarify ideas and to introduce aspects of content. It connects with understudies into planning an idea using representations, word cards or examples called illustrations. Understudies who get onto the thought before others can resolve the idea and after that are welcome to recommend their own particular illustrations, while different understudies are as yet

attempting to frame the idea. Therefore, idea achievement is appropriate to classroom use since all reasoning capacities can be tested all through the action. With precisely picked illustrations, it is conceivable to utilize idea attainment to teach almost any concept in all subjects. And not only that, the attainment of concepts will help them in passing through the competitive exams, entrance exams etc. for higher education in future. The attainment of concepts leads to concept formation which helps the pupil to impel the logical deduction aptitude and advance experimental attitude.

**OBJECTIVES OF THE STUDY**

- \* To study the differences in academic achievement of XI standard students in terms of gender, medium of instruction and stream of study.
- \* To examine the differences in concept attainment of XI standard students with regard to gender, medium of instruction and stream of study.
- \* To investigate the relationship between concept attainment and academic achievement of XI standard students.

**HYPOTHESES OF THE STUDY**

1. There is no huge distinction in scholarly accomplishment of XI standard understudies with respect to sexual orientation.
2. There is no huge distinction in scholarly accomplishment of XI standard understudies with respect to stream of study. There is no significant difference in academic achievement of XI standard students with regard to medium of instruction.
3. There is no significant difference in concept attainment of XI standard students with regard to gender.
4. There is no significant difference in concept attainment of XI standard students with regard to steam of study.
5. There is no significant difference in concept attainment of XI standard students with regard to medium of instruction.
6. There is no relationship between concept attainment and academic achievement of XI standard students.

Design: The investigator had used descriptive method for the study.

Sample and Sampling Technique: The sample for the study was selected randomly. Representative sample of 430 students who have joined in XI standard (science group) were selected from government schools, government aided schools and private schools (matriculation and CBSE schools).

Tools: Concept attainment in chemistry tool developed and standardized by the investigator; and the marks scored in the 10th standard public examination were taken as the achievement score.

**Analysis and Interpretation**

Hypothesis 1: There is no huge distinction in scholarly accomplishment of XI standard understudies as to sexual orientation.

Table 1: Academic Achievement with respect to Gender

Variable	Category	N	Mean	Standard deviation	df	Critical ratio	Level of significance
Gender	Male	218	2.10	.636	428	3.162	P>.05
	Female	212	1.91	.613			

From Table 1, since the calculated t-value 3.162 is greater than the table value 1.96 at 0.05 level of significance for df 428, then the null hypothesis is rejected. Hence 'there is significant difference in academic achievement of XI standard students with regard to gender'.

Hypothesis 2: There is no significant difference in academic achievement of XI standard students with regard to medium of instruction.

Table 2: Academic Achievement with respect to Medium of Instruction

Variable	Category	N	Mean	Standard deviation	df	Critical ratio	Level of significance
Medium of Instruction	English	361	2.11	.582	428	7.895	P>.05
	Tamil	69	1.49	.633			

From Table 2, since the calculated t-value 7.895 is greater than the table value 1.96 at 0.05 level of significance for df 428, then the null hypothesis is

rejected. Hence 'there is significant difference in academic achievement of XI standard students with regard to medium of instruction'.

Hypothesis 3: There is no significant difference in academic achievement of XI standard students with regard to stream of study.

Table 3: Academic Achievement with regard to Stream of Study

Variable	Category	N	Mean	Standard deviation	df	Critical ratio	Level of significance
Stream of Study	Bio-Maths	284	2.00	.665	428	0.480	P<.05
	Science	146	2.03	.563			

From Table 3, since the calculated t-value 0.480 is lesser than the table value 1.96 at 0.05 level of significance for df 428, then the null hypothesis is accepted. Hence 'there is no significant difference in academic achievement of XI standard students with regard to stream of study'.

Hypothesis 4: There is no significant difference in concept attainment of XI standard students with regard to gender.

Table 4: Concept Attainment with regard to Gender

Variable	Category	N	Mean	Standard deviation	df	Critical ratio	Level of significance
Gender	Male	218	1.78	.605	428	2.836	P>.05
	Female	212	1.61	.648			

From Table 4, since the calculated t-value 2.836 greater than the table value 1.96 at 0.05 level of significance for df 428, then the null hypothesis is rejected. Hence 'there is significant difference in concept attainment of XI standard students with regard to gender'.

Hypothesis 5: There is no significant difference in concept attainment of XI standard students with regard to medium of instruction.

Table 5: Concept Attainment with regard to Medium of Instruction

Variable	Category	N	Mean	Standard deviation	df	Critical ratio	Level of significance
Medium of Instruction	English	361	1.73	.643	428	2.720	P>.05
	Tamil	69	1.51	.532			

From Table 5, since the calculated t-value 2.720 is greater than the table value 1.96 at 0.05 level of significance for df 428, then the null hypothesis is rejected. Hence 'there is significant difference in concept attainment of XI standard students with regard to medium of instruction'.

Hypothesis 6: There is no significant difference in concept attainment of XI standard students with regard to stream of study.

Table 6: Concept Attainment with regard to Stream of Study

Variable	Category	N	Mean	Standard deviation	df	Critical ratio	Level of significance
Stream of Study	Bio-Maths	284	1.60	.602	428	-4.704	P>.05
	science	146	1.89	.645			

From Table 6, since the calculated t-value 4.704 is greater than the table value 1.96 at 0.05 level of significance for df 428, then the null hypothesis is rejected. Hence 'there is significant difference in concept attainment of XI standard students with regard to stream of study'.

Hypothesis 7: There is no relationship between concept attainment and academic achievement of XI standard students.

Table 7: Relationship between Concept Attainment and Academic Achievement

Variable	N	r-value
Academic Achievement	430	0.056
Concept Attainment		

From Table 7, it can be observed that there is no significant relationship between concept attainment and academic achievement.

### FINDINGS OF THE STUDY

1. There is significant difference in academic achievement of XI standard students with regard to gender.
2. There is significant difference in academic achievement of XI standard students with regard to medium of instruction.
3. There is no significant difference in academic achievement of XI standard students with regard to stream of study.
4. There is significant difference in concept attainment of XI standard students with regard to gender.
5. There is significant difference in concept attainment of XI standard students with regard to medium of instruction.
6. There is significant difference in concept attainment of XI standard students with regard to stream of study.
7. There is no significant relationship between concept attainment and academic achievement.

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