

## An Analytic Study of Constructivist Approach in Teaching at Senior Secondary Level of Jaipur District

Dr. Vibha Kaushik

Suresh Gyan Vihar university, Jaipur  
Corresponding Author: Dr. Vibha Kaushik

**Abstract:** Constructivism paradigm calls for a change in the classroom culture, attitudes, beliefs and practices. Role of the teacher in this approach is to value student's experience and voice. Role of the student changes from passive listener to active participant. The study attempts to analyze the use of constructivist approach in teaching at senior secondary level. The present study was carried out exclusively in the different schools of Jaipur district. The sample consists of the science, arts and commerce teachers 193, 250 and 160 respectively. Self constructed tools are used for the study. The result clearly indicates that there is a difference in the favourable opinion of science and commerce teachers in using the constructivist approach in teaching, there is a significant difference in the favourable opinion of science and arts teachers on the use of constructivist approach at senior secondary level and It proves that there is a significant difference of favorable opinion between the commerce and arts school teachers on the use of constructivist approach in teaching.

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### I. INTRODUCTION

Constructivism is a view of learning based on the belief that knowledge isn't a thing that can be simply given by the teacher at the front of the room to students in their desks. Rather, knowledge is constructed by learners through an active, mental process of development; learners are the builders and creators of meaning and knowledge.

In the words of Martin Dougiamas (1998), a student of science education at Curtin University of Technology on Internet Technologies, Australia, observed: "Constructivism is building on knowledge known by the student. Education is student centered; students have to construct knowledge themselves. Explanations can use metacognition to explain via metaphor. Semiotics, or meanings of words, is important to keep in mind. Constructivism is a theory, a tool, a lens for examining educational practices."

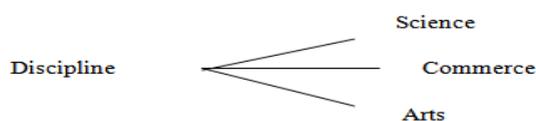
Constructivists believe that students develop new knowledge through a process of active experience. Not only do they receive input from the teacher or educational material, they also incorporate the new knowledge, into what they already know –their knowledge base–to create new knowledge and make it their own. In the constructivist paradigm, this is exactly what instructors want students to do because, unless students build representations between old knowledge and new learning, they will not retain the new and be able to recall it later without difficulty.

The teacher's role in a constructivist classroom isn't so much to lecture at students but to act as an expert learner who can guide students into adopting cognitive strategies such as self testing, articulating understanding, asking probing questions, and reflection. The role of the teacher in constructivist classrooms is to organize information around big ideas that engage the students' interest, to assist students in developing new insights, and to connect them with their previous learning.

### II. OBJECTIVES OF THE STUDY

The present study purports to achieve the following objectives:

To study the opinion of senior secondary teachers about use of constructivist approach in classroom teaching on the basis of –



Hypothesis:

**Conceptual Hypothesis 1** .There exists no significant difference between teachers in using the constructivist approach in classroom teaching regarding subject discipline at senior secondary stage.

**Operational Hypothesis 1(I)**: There is no significant difference in the opinion between the teachers of science and commerce stream on the use of constructivist approach at senior secondary level.

**Operational Hypothesis 2 (II)**: There is no significant difference in the opinion between the teachers of science and arts stream on the use of constructivist approach at senior secondary level.

**Operational Hypothesis 3 (III)**: There is no significant difference of opinion between the teachers of commerce and arts on the use of constructivist approach at senior secondary level.

### III. VARIABLES

**Independent variables:** The independent variables are the conditions or characteristics the experimenter manipulates or controls in his or her attempt to ascertain their relationship to observed phenomena. In the present study, variable subject discipline is independent variables.

**Dependent variable:** The dependent variables are the conditions or characteristics that appear, disappear, or change as the experimenter introduces, removes, or changes independent variables. In the present study, use of Constructivist approach in classroom teaching is the dependent variable.

**Method of the study:** In this study, survey method is used.

**Sample Design:** The sample for the investigator consisted of 603 school teachers of senior secondary level in Jaipur district .The random sampling was applied. The science, arts and commerce teachers were 193, 250 and 160 respectively.

**Statistical Analysis:** The mean score, standard deviation of each category of data were found out .Then t-test was employed to test the hypothesis at 0.01, 0.05 level of significance

### IV. RESULT AND DISCUSSION

**Subject Stream (Science and Commerce)**

**Conceptual Hypothesis 3:** There exists no significant difference between teachers in using the constructivist approach in classroom teaching regarding subject stream at senior secondary stage.

**Operational Hypothesis 3(I)**: There is no significant difference in the favourable opinion between the teachers of science and commerce stream on the use of constructivist approach at senior secondary level.

Statistical measures regarding the favourable opinion of science and commerce teachers on the use of constructivist approach in teaching are shown in the table given below:

**Table IV.3:** Favourable opinion of science and commerce teachers on the use of constructivist approach in teaching

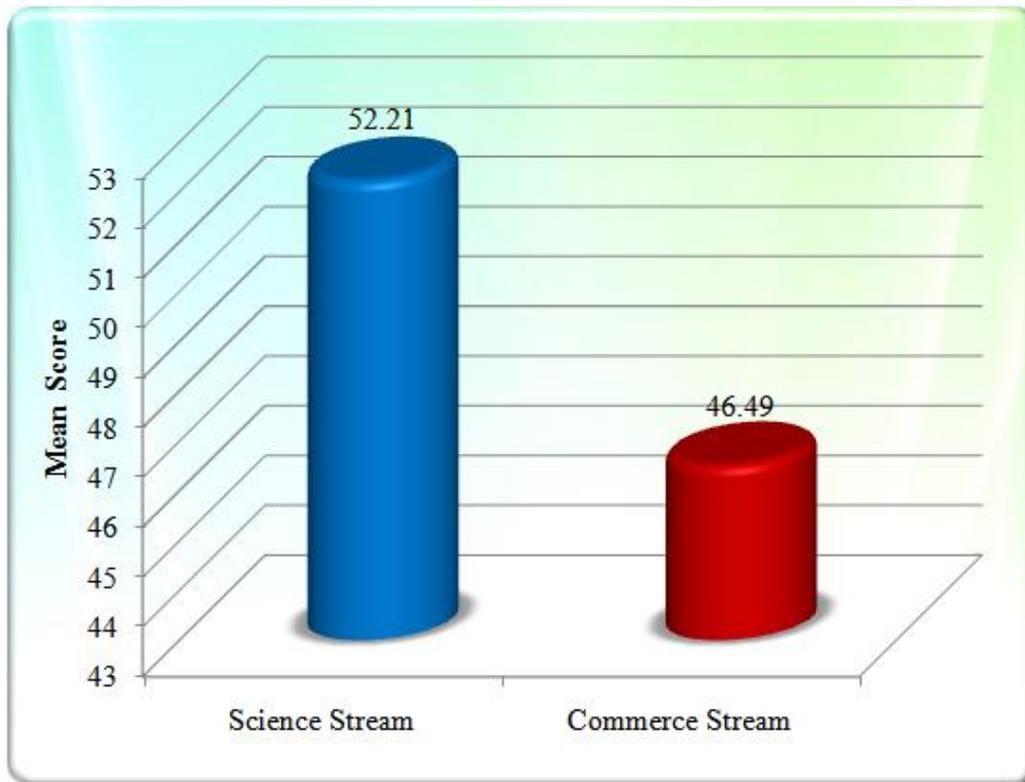
S.No.	Stream	Number of teacher	Mean	S.D.	t-value	Level of significance	Status of Hypothesis
1.	Science	193	52.21	469.34	2.56	0.05	Rejected
2.	Commerce	160	46.49	409.70			

Table value at 0.05 level =1.97, at 0.01 level =2.60

**Analysis and Interpretation:**

A glance at above mentioned table shows the result with respect of science and commerce teachers of senior secondary based on the favourable opinion of using the constructivist approach in teaching. The result clearly indicates that there is a difference in the favourable opinion of science and commerce teachers in using the constructivist approach in teaching. Mean of science schools teacher is 52.21 with S.D. 469.34 where as the mean of commerce teachers is 46.49 with S.D. 409.70. The table value of t is 1.97 at 0.05 level and 2.60 at 0.01 level. The calculated t value is 2.56 which is higher than the table value. It proves that the opinion on the use of constructivist approach is much favourable of science teachers than commerce teachers. So the null hypothesis is rejected.

The facts are presented in the graph-



**Graph IV.3:** Mean score on the favourable opinion of science and commerce teachers on the use of constructivist approach in teaching

**3 (II). Subject Stream (Science and Arts)**

**Conceptual Hypothesis 3:** There exists no significant difference between teachers in using the constructivist approach in classroom teaching regarding subject stream at senior secondary stage.

**Operational Hypothesis 3 (II):** There is no significant difference in the favourable opinion between the teachers of science and arts stream on the use of constructivist approach at senior secondary level.

Statistical measures regarding the favourable opinion of science and arts teachers on the use of constructivist approach in teaching are shown in the table given below:

**Table IV.4:** Favourable opinion of science and arts teachers on the use of constructivist approach in teaching

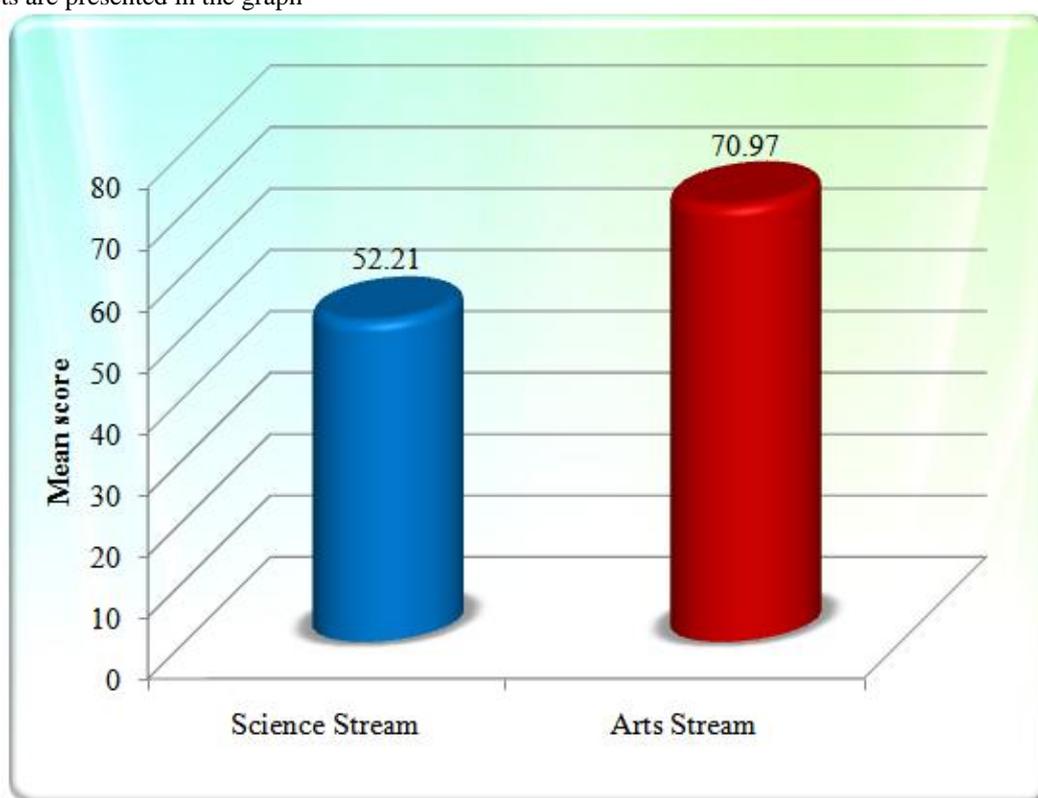
S. No.	Stream	Number of teacher	Mean	S.D.	t-value	Level of significance	Status of Hypothesis
1.	Science	193	52.21	469.34	8.41	0.01	Rejected
2.	Arts	250	70.97	636.63			

Table value at 0.05 level =1.97, at 0.01 level =2.58

**Analysis and Interpretation:**

An observation of the above table makes it clear that the mean scores about the favourable opinion on the use of constructivist approach at senior secondary level of science and arts teachers are 52.21 and 70.97 respectively. The standard deviation for the science teachers is 469.34 and for arts teachers is 636.63. The table value of ‘t’ value at 0.05 level is 1.97 and 0.01 level is 2.58. The calculated value of ‘t’ is 8.41 which is higher than the table value at both the level of significance. So, it proves that there is a significant difference in the favourable opinion of science and arts teachers on the use of constructivist approach at senior secondary level. In brief, it can be said that the opinion of arts teachers is more favourable than the science teachers in using the approach. Hence the null hypothesis is rejected.

The facts are presented in the graph-



**Graph IV.4:** Mean score on the favourable opinion of science and arts teachers on the use of constructivist approach in teaching

**3 (III). Subject Stream (Commerce and Arts)**

**Conceptual Hypothesis 3:** There exists no significant difference between teachers in using the constructivist approach in classroom teaching regarding subject stream at senior secondary stage.

**Operational Hypothesis 3 (III):** There is no significant difference in favourable opinion between the teachers of commerce and arts on the use of constructivist approach at senior secondary level.

Statistical measures regarding the favourable opinion of commerce and arts teachers in favour on the use of constructivist approach in teaching are shown in the table given below:

**Table IV.5:** Favourable opinion of commerce and arts teachers in favour on the use of constructivist approach in teaching

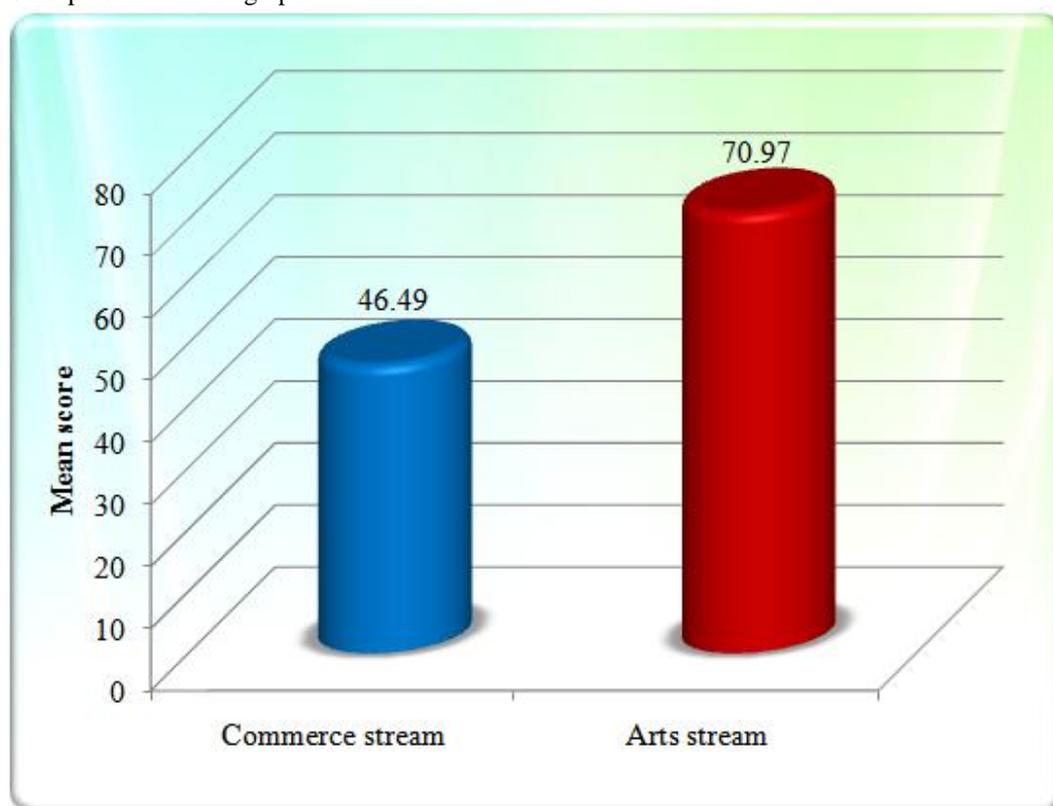
S. No.	Stream	Number of teacher	Mean	S.D.	t-value	Level of significance	Status of Hypothesis
1.	Commerce	160	46.49	409.70	9.56	0.01	Rejected
2.	Arts	250	70.97	636.63			

Table value at 0.05 level =1.97, at 0.01 level =2.60

**Analysis and Interpretation:**

The above table depicts the result with respect to commerce and arts teachers of senior secondary based on the favourable opinion of using the constructivist approach in teaching. The result clearly indicates that there is a difference in the opinion of teachers of commerce and arts in using the constructivist approach in teaching. Mean of commerce schools teacher is 46.49 with S.D 409.70 where as the mean of arts teachers is 70.97 with S.D. 636.63. The table value of t is 1.97 at 0.05 level and 2.60 at 0.01 level. The calculated t value is 9.56 which is higher than the table value. It proves that there is a significant difference of favourable opinion between the commerce and arts school teachers on the use of constructivist approach in teaching. It depicts that the approach is preferred by the arts school teachers in comparison to commerce school teachers. Hence the null hypothesis is rejected.

The facts are presented in the graph-



**Graph IV.5:** Mean score on the favourable opinion of commerce and arts teachers in favour on the use of constructivist approach in teaching

**Suggestions on the basis of findings –**

Suggestions for the teacher –

1. The teacher should encourage and accept student autonomy for the construction of knowledge.
2. The teacher should enquire students understanding of concepts before sharing his/her own understanding of those concepts.
3. The teacher should encourage students to engage in dialogue without hesitation and fear.

Suggestions for the Administration–

1. School administration should encourage and provide opportunities to the teaching staff to participate in workshops, seminars and symposium.
2. School administration should organize workshops, seminars and symposium in their schools.
3. School administration should encourage teachers to use collaborative learning in the classroom.

**Limitations of the Research:**

1. This research is limited up to 603 senior secondary schools of Jaipur city.
2. This research is limited up to senior secondary schools teachers.
3. The research has not considered the factors of personality patterns, educational qualifications and designation.
4. Subjects are taken stream wise not separate branches wise.
5. Only recognized private schools are taken for the present study.
6. Only regular teachers are selected for the present study.
7. Both the teachers of English and Hindi medium schools are selected in integrated form.

**V. CONCLUSION**

Although constructivism is not a theory of teaching, it suggests taking a radically different approach to instruction from that used in most schools. Instructors need to realize that the best way to learn is not from lectures, but by letting the learners construct knowledge for themselves. People often say that everyone cannot learn. Yet the reality is that everyone does learn. Every person is born with a brain that functions as an

immensely powerful processor. However traditional schooling inhibits learning by discouraging, ignoring, or punishing the brain's natural learning processes. In order for learners to be able to actively construct their own knowledge, rather than receive information transmitted by others, curriculum emphasis, classroom interactions, and classroom dynamics must change in major ways. Changing the traditional ways of schooling is not an easy task. Just as students do not easily let go their ideas, neither do schools board, principals parents or even teachers.

In the talk of education, constructivism is a very common word. There is much debate on whether teachers stick to traditional way by lecturing, or should they teach in constructive way, where the child has to construct the knowledge for themselves. Some may feel that the constructivist theory that was developed by many psychologists is the better and most effective way for their child to learn. The students should have a constructivist teacher along with a constructivist classroom to help them to discover new things for themselves. Constructivism promotes increased social interaction and discussion in the classroom, both between teachers and students and between students.

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