



## Constructivistic Approach in Teaching and Learning of B.ed. Trainees

### KEYWORDS

**Dr. Ritu Bala**

Associate Professor, Sri Ganganagar Shikshak Parshikshan (P.G.) Mahavidyalaya, Sri Ganganagar (Raj.)

**ABSTRACT** This study determines the effectiveness of constructivistic approach in teaching and learning of B. Ed trainees. In the present study, pretest, experimental treatment and posttest design was employed. It involved two groups of students, one experimental group and one control group. The experimental was taught Psychology through constructivistic approach and the control group was taught through conventional method. The design comprised three stages. The first stage involved pretesting of all the students. The second stage involved treatment of three weeks. The experimental treatment consisted of teaching two units of Psychology through constructivistic approach to experimental group and through conventional method to the control group. In the third stage, the students were post tested. Equivalent group design was used for the present study. There were 20 students in each group. Results indicated that the students who were taught Psychology through Constructivistic approach had shown significant improvement than the students who were taught through the conventional method.

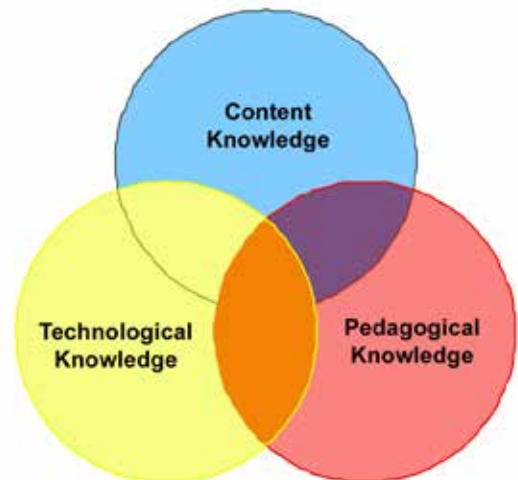
### Introduction

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. Constructivism draws on the developmental work of Piaget and Kelly. Twomey Fosnot defines constructivism by reference to four principles: learning, in an important way, depends on what we already know; new ideas occur as we adapt and change our old ideas; learning involves inventing ideas rather than mechanically accumulating facts; meaningful learning occurs through rethinking old ideas and coming to new conclusions about new ideas which conflict with our old ideas. A productive, constructivist classroom, then, consists of learner-centered, active instruction. In such a classroom, the teacher provides students with experiences that allow them to hypothesize, predict, manipulate objects, pose questions, research, investigate, imagine, and invent. The teacher's role is to facilitate this process.

### Constructivism

Constructivism is basically a theory —based on observation and scientific study —about how people learn. It says that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences.

In the classroom, the constructivist view of learning can point towards a number of different teaching practices. In the most general sense, it usually means encouraging students to use active techniques (experiments, real-world problem solving) to create more knowledge and then to reflect on and talk about what they are doing and how their understanding is changing. The teacher makes sure she understands the students' pre-existing conceptions, and guides the activity to address them and then build on them.



Constructivist teachers encourage students to constantly assess how the activity is helping them gain in understanding. By questioning themselves and their strategies, students in the constructivist classroom ideally become “expert learners.” This gives them ever-broadening tools to keep learning.

With a well-planned classroom environment, the students learn how to learn.

### Need and Significance of the Study

School reformers today are for a shift from traditional “teacher — to the practices to one that focuses on student's meaningful intellectual involvement in the development of knowledge”. In other words, from transmission of knowledge to student constructed knowledge. Educational curricula and teaching methods are changing one component of the current redevelopment of all subject area curricula is the change in focus of instruction from transmission curricula to transactional curriculum.

Teacher educators, student teachers and current teachers can gain valuable insight into their own teaching styles as a result of this study. Student teachers could also have

much gain from this. If the preparation programs were better able to prepare them they can be able to attend to the components of constructivist teaching and how they interpret teaching. The transition from an intern to a full time classroom teacher will be very effective and smooth. Finally student teachers themselves will have an opportunity to reflect on their own teaching styles, giving them valuable insight that could make these student teachers even best teachers in future. Thus the present study will be a significant contribution to psychology educational curriculum and for practicing teachers.

The present study examines how often do learners use constructivist practices in their classroom, it will more specifically look at when learners use constructivist practices on acquisition of branch of psychology. When the learners are proved to adopt constructivist practices like, do they use during receiving new information, performing activities or at self assessment. To develop effective practices based on constructivist approach, it will be important to conduct studies in classroom using instructional strategies that are in consonance with constructivism, hence there is a need to study the effectiveness of constructivist approach on teaching and learning for student teachers.

### Review of Related Literature

The effects of a constructivist approach on academic achievement, self-concept and learning strategies, and student preference were investigated by Kim, Jong Suk (2005). The 76 sixth graders were divided into two groups. The experimental group was taught using the constructivist approach while the control group was taught using the traditional approach. A total of 40 hours over nine weeks was used to implement the experiment. The instruments used were as follows; mathematics tests administered by the teacher, self-concept inventory, learning strategies inventory, and a classroom environment survey. The results are 1) constructivist teaching is more effective than traditional teaching in terms of academic achievement; 2) constructivist teaching is not effective in relation to self-concept and learning strategy, but had some effect upon motivation, anxiety towards learning and self-monitoring; 3) a constructivist environment was preferred to a traditional classroom.

Tom H Brown (2005), Beyond constructivism: Exploring future learning paradigms, and communication technology (ICT), the commercialisation and globalisation of education, social changes and the pursuit of quality. Of these, the impact of ICT and the new knowledge economy are the most significant. Changes in our educational practice lead, in turn, to changes in our approaches to teaching and learning. These changes also impact on our teaching and learning paradigms. Currently, as over the past few decades, we teach and learn in a constructivist learning paradigm. The paper discusses past and present paradigm shifts in education and then explores possible future learning paradigms in the light of the knowledge explosion in the knowledge era that we are currently entering.

Travis et al. (2005) have found that constructivist teaching techniques work well in various instructional settings. This study compared an undergraduate non-major biology lab section taught in a traditional teacher-centered style to a similar section taught as a constructivist class. Weekly lab quiz scores, attendance, a science attitude inventory, and an analysis of videotapes were used to determine whether student interest and performance were affected by the teaching style used. Evaluative tests showed many significant

differences between the groups and demonstrated that the constructivist class had higher quiz scores, more appreciation of science, better attendance, and increased participation in the lab activities than the traditional group.

Mayer (2004) developed a literature review spanning fifty years and concluded "The research in this brief review shows that the formula constructivism = hands-on activity is a formula for educational disaster." His argument is that active learning is often suggested by those subscribing to this philosophy. In developing this instruction these educators produce materials that require learning to be behaviorally active and not be "cognitively active." That is, although they are engaged in activity, they may not be learning (Sweller, 1988). Mayer recommends using guided discovery, a mix of direct instruction and hands-on activity, rather than pure discovery: "In many ways, guided discovery appears to offer the best method for promoting constructivist learning."

Lin, Wan-Ju (1998) has made a research on restructuring biology. His study reports on the improvement of a teacher researcher's teaching practice by adopting a constructivist teaching approach. Data were drawn from student responses to teacher-designed, open-ended discussion questions based on the core concepts of each unit. Students were also surveyed about their attitudes and concepts toward this teaching approach. It was discovered that students show positive attitudes toward cooperative learning and their understanding of the nature of science increased significantly.

### Statement of Problem

*"Constructivistic Approach in Teaching and Learning of B.Ed Trainees"*.

### Objectives of the Study

To compare the pre test and post test performance of student teachers in the unit "Mental Health and Hygiene and in Individual differences" in Psychology learnt through constructivistic approach with that of student teachers through traditional method.

To compare the gain scores of student teachers in the unit "Mental Health and Hygiene and in Individual differences" in Psychology learnt through constructivistic approach with that of student teachers learnt through traditional method.

### Hypotheses of the Study

Control group and experimental group student teachers do not differ in their Pre test and post test scores in the unit "Mental Health and Hygiene and in Individual differences".

Control group and experimental group student teachers do not differ in their gain scores in the unit "Mental Health and Hygiene and in Individual differences".

### Sample

In this study 40 student teachers were selected from Sri Sarada College of Education, Salem, randomly based on their achievement. 20 student teachers for control group and 20 student teachers for experimental group were selected for the study.

### Tool Used

Pre test and post test questions were used as a tool for the study.

**Statistical Techniques Used**

Descriptive statistics like mean and S.D. and inferential statistics like 't' test was used for the study.

**Interpretation of Results**

1. Control group and experimental group student teachers do not differ in their Pre test scores in the unit "Mental Health and Hygiene and in Individual differences"

**Table showing the 't' value of pretest scores of experimental and control group of student teachers**

Groups	Mean	N	Std. Deviation	't' test
Pre test scores of experimental group	17.45	20	4.68	0.74 NS
Pre test scores of control group	16.45	20	3.61	

From the above table it was found that the calculated 't' value is less than the table value and so it is not significant. Hence the hypothesis is accepted.

2. Control group and experimental group student teachers do not differ significantly in their Post test scores in the unit "Mental Health and Hygiene and in Individual differences"

**Table showing the 't' value of post test scores of experimental and control group of student teachers**

Groups	Mean	N	Std. Deviation	't' test
Pre test scores of experimental group	48.80	20	.89	17.16**
Pre test scores of control group	31.10	20	4.58	

From the above table it was found that the calculated 't' value is greater than the table value and so it is significant at 0.01 level. Hence the hypothesis is not accepted.

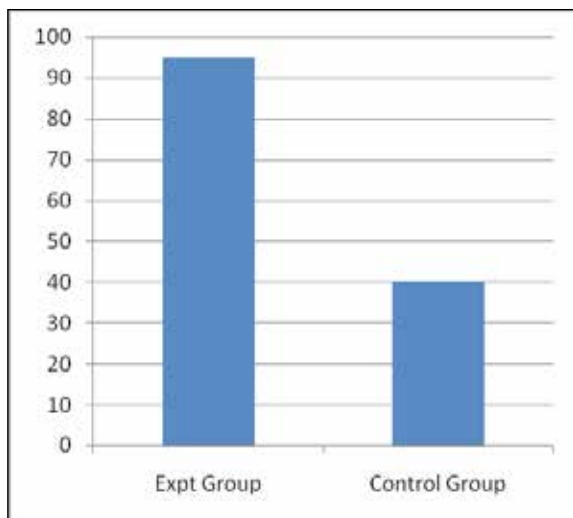
3. Experimental group and Control group student teachers do not differ in their gain scores in the unit "Mental Health and Hygiene and in Individual differences"

**Table showing the 't' value of gain scores of experimental and control group of student teachers**

Groups	Mean	N	Std. Deviation	't' test
Gain scores of experimental group	96.15	20	2.815	14.25**
Gain scores of control group	42.95	20	16.848	

From the above table it is found that the calculated 't' value is greater than the table value and so it is significant at 0.01 level. Hence the hypothesis is not accepted adopting a constructivistic teaching approach, and student show positive attitude towards cooperative learning and their understanding of the nature of psychology increased significantly. The investigator found in this study that there is significant difference between pre test and post test scores of the experimental group.

**Figure Showing the Mean Value of the Gain Scores of the Experimental and Control Group student teachers**



**Implications of the Study**

Since we are striving for quality improvement of the present system of education, it is essential to provide adequate training to teachers regarding the recent technology as well as different teaching methodology. This study also provides the student teachers on opportunity for their effective preparation of the concepts for group learning in future.

As constructivistic approach is more effective when compare to the traditional method it is recommended that this method can be used as an alternative method in the classroom teaching by the student teachers. Since it is self explanatory it would help the student teachers in effective collaborative learning.

**Discussion of the Study**

This study reveals an evaluative tests showed many significant differences between the groups and demonstrated that the constructivistic class has higher quiz scores, more appreciation of science better attendance and increased participation in the activities than the traditional group, Travis, et.al., (2005). But in the present study the investigator found that there is significant difference between control and experimental group of the student teachers in their post test scores.

The study reported in the review shows that the formula constructivism = hand on activity is formula for educational disaster that in many ways guided discovery appears to offer the best method for promoting constructivistic learning (Mayer, 2004). In this study it was conclude that the group based learning is more effective than the conventional approach in teaching and learning among the student teachers.

Lin, Wan — Ju (1998) reported the improvement of a teacher researchers teaching, practices by in order to improve the quality of teaching and learning process, teachers and students should be encouraged to use this method. This study could really be very useful for the future student teachers in creating innovative classroom situations wherein the students are meaning makers which is the ultimate aim of learning. It emphasizes learning through meaning making process than memorization of concepts.

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