REVIEW PAPER

TEACHING TEACHERS TO USE CONSTRUCTIVIST APPROACHES: A PROPOSAL

By

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ABSTRACT

Emerging research suggest that our education system must move towards learner centred curriculum and teaching methods. Following these suggestions, National Curriculum Framework (NCF) of 2005 emphasized on practicing learner centred approaches in teaching-learning i.e. constructivist approaches, and National Council for Teacher Education (NCTE) regulations 2014 suggested to make constructivist approaches based teaching-learning activities as an essential component of B.Ed. curriculum. In context to these initiatives, two important questions appear in our minds, whether those teachers already in teaching profession are familiar with constructivist approaches, and what challenges these teachers face regarding use of constructivist approaches in teaching-learning processes? Present paper tries to answer these two very important questions. The paper further presents a proposal to support awareness of teachers, and develop skills in practicing constructivist approaches based teaching-learning processes.

Keywords: Teacher Education, In-service Teacher Education, Constructivism, Constructivist Approaches, Secondary School Teachers.

INTRODUCTION

Constructivism is a theory that received a great attention from past two decades in India. Naylor and Keogh (1999) described constructivism as:

> "The central principles of this approach are that learners can only make sense of new situations in terms of their existing understanding. Learning involves an active process in which learners construct meaning by linking new ideas with their existing knowledge" (p. 93).

It is a theory of learning in which learners actively engages in making meaning and constructing knowledge by manipulating, creating, and exploring the new information on the basis of their beliefs and prior experiences (Cooperstein & Kocevar-Weidinger, 2004). Adding to this, Rami, Lorenzi, and Lalor (2009) comment that learning environment based on constructivism presents the learner with opportunities to help them to understand how to construct new knowledge from prior experience. Instruction materials based on constructivist theory are currently supported for general education classes by university faculty and many educational institutions (Brooks & Brooks, 1999). One of the key ideas associated with constructivist theory is that learning should be meaningful and related to real life situations (Grobecker, 1999). And National Curriculum Framework (NCF) sees constructivism as a theory of learning which emphasizes on active participation of leaner in the learning process.

Nowadays when the teaching learning processes are shifting from teacher centred to learner centred, constructivism seems useful to increase the engagement of learner in the classroom activities (Sharma, 2006) and also provide them a platform to think, observe, interact, and use their prior experiences to gain new concepts (Kumar & Gupta, 2009). Piaget (1926) and Novak and Gowin (1984) also believed, the basic characteristics of constructivism is that new learning depends on learner's previous knowledge which may sometimes interfere with the understanding of new information and also be

facilitated by social interaction (Vygotsky, 1986). According to Kim (2001), the constructivist approaches are significantly able to improve learners' academic achievement and self-concept and also help the learners to get opportunities to develop their intellectual, social, and psychological aspects. The observations like best learning is possible while the learner is trying to understand the concept through prior experience (Sims, 2002) and every one assimilates new knowledge from different experiences (Brooks & Brooks, 1999) also justify the importance of constructivist approaches. The constructivist approach is believed to enhance the creativity of children, found more effective than traditional approach in promoting interest in mathematics, and developing social skills (Nayak & Senapaty, 2011; McCray, 2007).

Research from different parts of the world reveal that constructivist approach is one of the successful methods for providing meaningful learning experiences to learner in a classroom (Brooks & Brooks, 1999; Johnson & Johnson, 1994). Researchers also observed that inquiry-based science activities have significant effect on achievement, attitudes, skills, and comprehensiveness of learners' towards science (Ball & Bass, 2000; Lawson, 2010). While a follow-up assessment by Dogru and Kalender (2007) reports that students who were taught by constructivist approaches showed better retention of concept than those who were taught by traditional approaches. Hmelo-Silver, Duncan, and Chinn (2007) also noted the significance of constructivist approaches namely problem-based and inquiry learning methods to learn science in a better and effective way. In an experimental study conducted by Sridevi (2008), it was revealed that instruction based on constructivism significantly improved academic achievement of students. And another study reported that constructivist approaches help to increase the number of students' laboratory activities and also develop students' understanding of science (Cakir, 2008).

All these arguments and reviews support the claim that constructivist approaches are useful to improve learning outcomes and can improve the academic achievement in different subjects. The effectiveness of the constructivism lie in the fact that it is different from earlier belief that knowledge is objective and based on facts only, in contrast this theory propagates that knowledge is subjective, conceptual and constructed by the learner from their own experiences (Singh & Yaduvanshi, 2015). Thus, it can be safely predicted that use of constructivist approaches in teaching play a very significant role to develop critical thinking, promoting creativity, and problem solving ability of learners. NCF has also emphasized on constructivist approaches in teaching-learning process for knowledge creation and promoting creativity. To make the vision of NCF a reality, it seems necessary that our teachers must use constructivist approaches in their teaching. Extending this view, the present paper deals with the following objectives:

- To study the practices of Constructivist Approaches in classroom teaching

- To explore the challenges faced by teachers in regard to practicing Constructivist Approaches

- To suggest a proposal for making teachers aware of skill in practicing Constructivist Approaches

1. Methodology

For the purpose of attaining the above mentioned objectives, secondary data has been used. The researchers went through policy document NCF (NCERT, 2005) as it emphasize to use of constructivist approaches in classroom teaching. Researchers also reviewed the many concerning research and literatures published from 1997 to 2017 which were related to the use of constructivist approaches by teachers of different disciplines and nationalities as well as their awareness and attitude towards using this approach for teaching-learning purposes. All reviewed literature has direct connection with the present paper.

1.1 Usage of Constructivist Approaches in Classroom Teaching: Present Status

More than ten years have been passed since the documents of NCF 2005 came. After such a long duration, it can be safely assumed that almost all the teachers would have been aware of constructivist approaches and are using the constructivist approaches to improve teaching-learning purposes. But the related studies show the different story. Kalekar (2013) indicated that instructors at several

teaching institutions still use traditional teaching methods. Teachers also assumes learner as a passive receptor of knowledge and they (teachers) are the transmitter of knowledge. The study further reported that teachers give more emphasis on completing their teaching task through lecture methods. Das (2015) also found that teaching learning process in education system did not go beyond doing a good lecture. According to her investigation, instructors did not try to find learners' prior knowledge of concepts before sharing their own understanding of concept during discussion and did not give importance to learner's initial response. Sharma (2006) observed that although our education system has shifted from 'teacher-centred' to 'learner-centred', it is still believed that the teacher has all the knowledge and s/he is the only source of 'right' knowledge.

Mulugeta (2010) investigated teachers in primary schools and found that they were not utilizing constructivist approach in teaching learning process. The approach of teaching in the classrooms was not found to be different from traditional approach in which classes are usually driven by teachers. Degnew (2017) revealed that teachers were not trying to engage students in the learning process to meet students learning needs. Korcova (2007) used 18 characteristics of constructivist education designed from the checklist of Murphy (1997) research to find out whether the teachers practicing constructivist approaches in their teaching and she observed that the teachers were not competent to use constructivist approaches. The result of study reveled that number of constructivist characteristics observed in the teachings was very low and none of the class can be called purely constructivist classroom. On the basis of these reviews, it can be concluded that teachers are not using constructivist approaches in an effective and efficient manner and there seem to be certain challenging issues in implementation.

1.2 Challenges Faced by Teachers in Regard to Practicing Constructivist Approaches

A review of related literature reveals that there are several problems faced by teachers while practicing constructivist approaches during teaching. Kalekar (2013) had given some reasons for not using constructivist approaches in

classroom setting: (i) teachers do not know the methods and strategies to implement constructivism, (ii) teachers assumed it time consuming and do not have sufficient knowledge and adequate skills to use of these type of approaches in class room, and (iii) teachers also feel that syllabi are too vast to be taught by constructivist approaches. Other overarching challenges related to implementing constructivism in classroom are the redoubtable task of transforming a learning theory into a theory of teaching (MacKinnon & Scarff-Seatter, 1997). Richardson (1997) sees the problem from a different perspective. According to him, constructivist teaching gives importance to students' understandings at the cost of "right" answers. In this process, learners' knowledge becomes idiosyncratic as 10 different learners may arrive at 10 different understandings of a concept, all of which are not equally appropriate so the inappropriately applied, constructivist approaches may lead to the "unconstraint" style of teaching (MacKinnon & Scarff-Seatter, 1997).

Another study, conducted by Degnew (2017) revealed that many challenges restrain teachers from practicing constructivist approaches. The challenges are: reluctance to implement constructivist teaching, large class size, giving preference to lecture method, teachers' lack of skill and knowledge to apply constructivist teaching strategies, and teachers' unwillingness to assess the prior knowledge of learners about the concept. Martin (1994) and Vadeboncoeur (1997) also found that teachers were not promoting constructivist approaches in their classroom teaching because of lack of understanding about constructivism. Richardson (1997) identifies another factor that appears to affect the approach teachers take in forming constructivist settings that is specific content, subject matter, or discipline. Some subjects, such as mathematics, are more "bounded" than others by rules, formulae, and procedures. They are more likely to be regarded by teachers as producing problems and tasks to which there are "correct" answers. Individual interpretations and construction of ideas and concepts are less likely to be encouraged by teachers than in subjects such as literature and writing.

A final challenge faced by teacher is the pitfall of

considering constructivism as the only feasible theoretical framework for teaching and learning. It is one way of thinking about how knowledge and understanding are constructed, but it is not the only way. In all, it can be concluded that there are many challenges before the teachers to implement constructivist approaches in classroom settings.

2. Proposed Induction Cum Training Programme on Constructivist Approaches'

Two days of induction cum training programme would be arranged to create awareness on constructivist approaches among teachers.

2.1 Objectives of the Programme

After attending the programme, teachers/participants will be able to:

- Understand the concept of constructivism and approaches based on this theory.
- Distinguish between 'constructivist approaches' and 'conventional approaches' of teaching.
- Practice constructivist approaches in classroom settings.
- Create constructivist environment in the classroom.

2.2 Structure of the Programme

2.2.1 Day - 1

2.2.1.1 Phase-I (Interaction)

This phase will begin with interaction with participants and talking about their classroom experiences and environment. The main purpose of this segment will be to assess participants' prior knowledge of constructivism. This phase will explore the need of teachers and challenges faced by them to implement constructivist approaches in actual classroom situations.

2.2.1.2 Phase-II (Theoretical Explanation)

In this phase, the concept of constructivism will be explained and elaborated by using participants' previous knowledge. During the session, teachers will be supported to use real life examples and to create interactive environment for understanding different concepts of constructivist approaches and then refine and revises those concepts by asking questions, posing contradictions

and engaging in inquiries. This phase will help teachers to learn and practice about:

- Concept, meaning, definitions and origin of constructivism
- Different type of constructivist approaches
- Significance of constructivist approaches in education
- Role of a constructivist teacher
- Role of a constructivist learner
- Characteristics of a constructivist classroom

2.2.1.3 Phase-III (Queries)

This phase will provide a chance to all the participants to pose their queries and get the relevant answers from fellow participants or subject experts.

2.2.2 Day - 2

2.2.2.1 Phase - IV (Revision)

The participants will be invited to recall the lessons learnt and significant learning from first day of work.

2.2.2.2 Phase - V (Practical / Action)

In this phase, the subject experts will help teachers to practice different constructivist approaches and present at least one example of each approach. All the participants will be required to develop a lesson plan based on constructivist approach.

2.2.2.3 Phase - VI (Feedback and Follow Up)

This will be the last session of the programme. In this session, the entire participants will be asked to fill a feedback form. This form will give them a chance to evaluate the programme and listing their problems and concerns related to use of constructivist approaches in actual classroom situations. Afterwards, the participants will be provided an opportunity to share individual experiences and further expectations.

3. Discussion and Recommendations

Review of literature makes it clear that constructivist teaching methods and strategies are not being used in a manner to support learning development in classrooms and emphasizes that teachers should improve their teaching methods by reflecting on their awareness of emerging trends and methods of teaching and give due importance to students' prior knowledge. As argued by

Ernest (1995) that "An awareness of the social construction of knowledge suggests a pedagogical emphasis on discussion, collaboration, negotiation, and shared meanings..." (p.485). Teachers should accept the fact that the learners have background and prior knowledge to build or gain new knowledge and their main role is to help and guide these students. At policy level, it can be suggested that professional development programs on constructivist approaches should be introduced for secondary school teachers to make them aware about the same. Therefore, there is a need to restructure the programmes of teacher education accordingly. As suugested by Titus (2013) that the present scenario demands to shift the paradigm from "knowledge for practice" . . . to . . . "knowledge of practice" (p. 13) which is more meaningful for both pre-service and in-service teachers. As other measures, organization of training courses, workshops, and seminars incorporating the components of constructivism will be helpful to encourage teachers to adopt constructive approaches in the classroom settings (Chibani & Hajal, 2017).

Talking about the role of constructivist teacher, Driver, Asoko, Leach, Scott, and Mortimer (1994) observed:

> "The role of the authority figure has two important components. The first is to introduce new ideas or cultural tools where necessary and to provide the support and guidance for students to make sense of these for themselves. The other is to listen and diagnose the ways in which the instructional activities are being interpreted to inform further action. Teaching from this perspective is also a learning process for the teacher" (p. 11).

This observation clearly reflects that the role of a teacher in constructivist learning environment is challenging and he/she has to move from the position of 'instructor' to 'facilitator'. Studies reveal that majority of in-service teachers are not using constructivist approaches in their classroom teaching (Mulugeta, 2010; Das, 2015; Degnew, 2017), and are unable to translate constructivist theory into practice. Majority of teachers are reported to continue with the traditional teaching methods because of the challenges they face in translating the constructivist theory

into classroom practice (Reigler, 2015). Besides, the practical issues in applying constructivist approaches to teaching learning process, and strong belief in ideology of conventional teaching methods has also affected the promotion of constructivism in classrooms in negative way (Martin, 1994; Vadeboncoeur, 1997). This belief can be attributed to the mindset grasped from one's former teachers and the frames of reference in which one was taught (Kennedy, 1999; Kirschner, Sweller & Clark, 2006).

To improve the situation, teachers need to be exposed to different perspectives and should be given opportunities to develop the discretion needed to choose the most appropriate as well as the required skills to implement their choices. Considering that professional development programmes empower teachers to improve their own skills and knowledge on a particular issue (Amadi, 2013), the researchers have proposed a professional development programme entitled 'Induction cum Training Programme on Constructivist Approaches' to make school teachers aware and skilled to practice and take benefit of constructivist approaches for teaching-learning purposes.

Conclusion

The research reviews on constructivist approaches reveal that it enhances the academic achievement, critical thinking, creativity, and abstract thinking power of the students (McCray, 2007; Nayak & Senapaty, 2011). This approach is also credited to provide opportunities to students to explore their views and make their own understanding (Sharma, 2006). Inspite of these benefits, teachers are hardly using these approaches in their classrooms. The above programme gives just a suggestive list of activities. Therefore, it becomes obvious that teachers must be oriented and trained to use these approaches. Keeping this need in view, researchers have proposed an 'Induction cum Training Programme on Constructivist Approaches' for school teachers. The researchers hope that the proposed programme will be implemented in right spirit and faith to help teachers to know and learn different constructivist approaches and get requisite skills to use them in real classroom situations.

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