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CONSTRUCTIVISM IN TEACHING-LEARNING: A PARADIGM SHIFT IN INDIAN CLASSROOMS

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Abstract:-Although constructivism is a concept that has been embraced my many teachers over the past 10 years, the meanings that are attached to this term are varied and often inadequately understood. Teachers need to have a sound understanding of what constructivism means to evaluate its promise and to use it knowledgeably and effectively. This paper explicates some of the theoretical background of constructivism and then presents as what teachers need to know to make their classroom to shift towards constructivism.

Keywords: Teaching-Learning , Paradigm Shift ,Constructivism.

INTRODUCTION:

New paradigms keep surfacing in the educational community about teaching and learning process in schools as time unfolds. The new ideas of this paradigm shift are researched, discussed and argued in the institutions of Higher learning keeping in view various dimensions such as learner, learning, cognition, technological innovations and socio-economic aspects of the contemporary times. The latest educational paradigm in India is constructivism endorsed, advocated and propagated by National Council of Educational Research and Training (NCERT) through its National Curriculum Framework for School Education (NCFSE:2005)

PARADIGM SHIFT IN TEACHING-LEARNING PROCESS

Behavioural instruction methods are those that are marked by large group lectures and instructor-provided learning objectives and assignments (Albanese & Mitchell, 1993). It is based on Bloom's taxonomy. Bloom (1956) identified three domains of educational activities.

- Cognitive: mental skills
- Affective: growth in feelings or emotional areas
- Psychomotor: manual or physical skills

In Behaviouristic classroom situation the emphasis will be given on 'knowledge', 'comprehension', 'application' and 'analysis'. Here comes the pivotal role of teachers as effective agents of transmission of textbook subject matter through skilful teaching to their pupil. Students in behaviouristic classrooms are expected to be attentive, disciplined and receivers of knowledge through their teachers. More often than not, behaviouristic teaching model is criticized for its rote learning and forced memorization. Hence, shift in teaching-learning process was advocated and practiced in countries like U.S.A and Canada from behaviouristic model to a model that promotes child as a constructor of knowledge and teacher as a facilitator in the process of child's construction of knowledge which is prevalently known as "Constructivism'.

Constructivism, as NCFSE: 2005 endorses, is an epistemological view of knowledge acquisition emphasizing 'construction of knowledge' rather than transmission of knowledge from teacher to pupil. Constructivist learning environment is 'place where learners may work together, draw upon (information) resources using a variety of tools, supporting each other

in their guided pursuit of learning goals and problem-solving activities' (Wilson, 1995). In this context of Constructivist teaching-learning, the role of the teacher becomes more proactive as a facilitator and child moves away from the conventional role of 'passive receiver of knowledge' to 'constructor of knowledge'. Child becoming the centre of teaching-learning presupposes a major shift in teacher education programs. The below table exemplifies the differences between behaviouristic and constructivist classroom

Behaviouristic Classroom	Constructivist Classroom
Curriculum begins with the parts of the whole. Emphasizes basic skills.	Curriculum emphasizes big concepts, beginning with the whole and expanding to include the parts.
Strict adherence to fixed curriculum is highly valued.	Pursuit of student questions and interests is valued.
Materials are primarily textbooks and workbooks.	Materials include primary sources of material and manipulative materials.
Learning is based on repetition.	Learning is interactive, building on what the student already knows.
Teachers disseminate information to students; students are recipients of knowledge.	Teachers have a dialogue with students, helping students construct their own knowledge.
Teacher's role is directive, rooted in authority.	Teacher's role is interactive, rooted in negotiation.
Assessment is through testing, correct answers.	Assessment includes student works, observations, and points of view, as well as tests. Process is as important as product.
Knowledge is seen as inert.	Knowledge is seen as dynamic, ever changing with our experiences.
Students work primarily alone.	Students work primarily in groups.

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 that she understands the students' pre-existing conceptions, and guides the activity to address them and then build on them. Pedagogically speaking, constructivist teachers encourage students to constantly assess how the activity is helping them gain 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". It works like a spiral. When they continuously reflect on their experiences, students find their ideas gaining in complexity and power, and they develop increasingly strong abilities to integrate new information. One of the teacher's main roles becomes to encourage this learning and reflection process.

Jonassen (1994) summarizes what he refers to as "the implications of constructivism for instructional design". He lists the flowing principles as to how knowledge construction can be facilitated.

- Provide multiple representations of reality.
- Represent the natural complexity of the real world.
- Focus on knowledge construction, not reproduction.
- Present authentic tasks (contextualizing rather than abstracting instruction).
- Provide real-world, case-based learning environments, rather than predetermined instructional designs.
- Foster reflective practice.
- Enable context-and-context dependent knowledge construction.
- Support collaborative construction of knowledge through social negotiation.

In constructivism, it is envisaged that the teacher's role will be to `facilitate', 'guide', 'innovate' and 'negotiate'.

Cardinal Principles of Constructivism

Brooks and Brooks (1993) state twelve cardinal principles essential to constructivist teaching vis-a-vis the teacher's role. These cardinal principles are:

• Encouragement and acceptance of student autonomy and initiative.
• Utilization of raw data and primary sources along with manipulative, interactive and physical materials.
• When planning, teachers use cognitive terminology such as "classify","analyze" and "create".
• Allowing student responses to drive lessons, shift instructional strategies and alter content.
• Inquiry concerning students' understanding of concept before sharing their own understanding of those concepts.
• Encouragement of students to engage in dialogue, both with the teacher and with one another.
• Encouragement of students' inquiry by asking thoughtful, open-ended questions and encouraging students to ask questions of each other.
• Pursuit of elaboration of students' initial responses.
• Engagement of students in experiences that might engender contradictions to their initial hypothesis and then encourage discussion.
• Allowance of wait time after posing questions.
• Providing time for students to construct relationships and create metaphors.
• Nurturing students' natural curiosity through frequent use of the learning cycle model. The above points suggests that the teacher's role will be to encourage', 'diagnose', 'promote reflective thinking', `elaborate', 'nurture'.

Meaningful learning, in a constructivist context, is a generative process of representing and manipulating concrete things and mental representations, rather than storage and retrieval of information. (NCFSE: 2005, p.14). Thus, for NCFSE: 2005,

• knowledge is constructed;
• it is constructed by the child;
• the child constructs knowledge out of her own experiences; and
• construction is essentially achieved through self-expression, exploration and activities.

Thus, a shift in child learning is a major movement which led to the birth of new paradigm of teaching-learning, i.e., constructivism. The priority areas for teacher education needs to incorporate the emerging demands from the school system and prepares teacher (NCF2005) for the roles of being an:

• Supportive, encouraging human facilitator in teaching learning situation to enable learners to discover their talents, realize their physical and intellectual potentialities to the fullest and to develop character and desirable social and human values to function as responsible citizens; and
• active member of a group of persons who makes a conscious effete for curricular renewal the personal need of learners.
NCFTE: 2010 suggests that, in order to realize the above, the teacher education programme must contain the following to enable the student-teacher (who):
• Care for children and love to be with them, understand children within social, cultural and political contexts develop sensitivity to their needs and problems, treat all children equally.
• Perceive children not as passive receivers of knowledge augment their natural propensity to construct meaning, discourage rote learning, make learning a joyful, participatory and meaningful activity.
• Critically examine curriculum and textbooks, contextualize curriculum to suite local needs.
• Integrate academic learning with social and personal realities of learner, responding to diversities in the classroom.
• Promote values of peace, democratic way of life, equality, justice, Liberty, fraternity secularism and zeal for social reconstruction.
The above tenets of constructivism can only be achieved if teacher education curriculum provides appropriate and critical opportunities for student- teachers to:
• Observe and engage with children, communicate with and relate to children.
• Understand the self and others, one's beliefs, assumptions, emotions and aspiration; develop the capacity for self-analysis, self-evaluation, adaptability, flexibility, creativity and innovation.
• Develop habits and the capacity for self-directed learning, have time to think, reflect, assimilate and articulate new ides; be self-critical and to work collaboratively in groups.
• Engage with subject content, examine disciplinary knowledge and social realities, relate subject matter with the social milieu of learners and develop critical thinking.
• Develop professional skills in pedagogy, observation, documentation, analysis and interpretation, drama, craft, storytelling and reflective inquiry.

Constructivism in the Context of School and Teacher Education in India

The impulse to teach everything arises from lack of faith in children's own creative instinct and their capacity to construct knowledge out of their experience (NCF: 2005, P.2). National Curriculum Framework, 2005, in its second chapter establishes the need to recognize the child as a natural learner, and knowledge as the outcome of the child's own activity. It goes on to say that "in our everyday lives outside the school, we enjoy the curiosity, inventiveness and constant querying of children, and children actively engage with the world around them, exploring, responding, inventing and working things out, and making meaning" (NCFSE: 2005, p. 12). It further elaborates that 'the association of learning with fear, discipline and stress, rather than enjoyment and satisfaction, is detrimental to learning.... Physical and emotional security is the cornerstone for all learning, right from the primary to the secondary school years, and even afterwards. (p. 14). It is explicated in NCFSE: 2005 that 'children will learn only in an atmosphere where they feel they are valued. Our schools still do not convey this to all children. ... Our children need to feel that each one of them, their homes, communities, languages and cultures, are valuable as resources for experience to be analyzed and enquired into at school; that their diverse capabilities are accepted; that all of them have the ability and the right to learn and to access knowledge and skills; and that adult society regards them as capable of the best' (p. 14)

According to NCFSE: 2005, the role of teacher, is that of a facilitator; to enhance children's natural desires and opportunities by organizing classroom experiences in consonance with the child's nature and environment. Indeed that knowledge is thus constructed by children, NCFSE claims, is a fact; a fact to be honored, if we are to succeed in educating our children. It is further advocated in NCFSE: 2005 that "the fact that knowledge is constructed by the child implies that curricula, syllabi and textbooks should enable the teacher in organizing classroom experiences in consonance with the child's nature and environment, and thus providing opportunities for all children. Teaching should aim at enhancing children's natural desire and strategies to learn. Knowledge needs to be distinguished from information, and teaching needs to be seen as a professional activity, not as coaching for memorization or as transmission of facts. Activity is the heart of the child's attempt to make sense of the world around him/her. Therefore, every resource must be deployed to enable children to express themselves, handle objects, explore their natural and social milieu, and to grow up healthy. If children's classroom experiences are to be organized in a manner that permits them to construct knowledge, then our school system requires substantial systemic reforms…" (viii).

Conclusion

Constructivism inspires teacher education reform programs, is the subject of major international conferences, is the topic of hundreds of journal articles, and is the foundation of many teacher training programs where constructivist teaching methods are widely advocated.

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