

**Journal of International
Academic Research for Multidisciplinary**



A Global Society for Multidisciplinary Research

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CONSTRUCTIVIST CLASSROOM: A PANDORA'S BOX

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ABSTRACT

Constructivism involves learner's activation of several cognitive processes such as paying attention and selecting relevant information, organizing information and integrating incoming information with existing knowledge. Cognitive constructivism is a system of exploration of how learners, as individuals, adapt and refine knowledge. In contrast to cognitive constructivism, social constructivism views knowledge as primarily a cultural product. Cognitive constructivism focuses on the internal structure of concepts, whereas social constructivism focuses on the context of their acquisition. Constructivist learning pose four dilemmas (1) Conceptual, (2) Pedagogical, (3) Cultural and (4) Political. There is another fundamental issue relevant in constructivism that the understanding of students emerging from constructivist instruction is not compatible with the evaluation system in place. However, Goodlad reported an extraordinary sameness of learning environment that is prevalent in most of the schools. Thus, the constructivist classroom transactions and evaluation procedures are far more complicated than proposed by educationists.

INTRODUCTION

Constructivism means construction of knowledge in the sense that learners actively construct their own knowledge by linking new information to the existing knowledge on the basis of materials presented to them. Knowledge construction involves learner's activation of several cognitive processes. It consists of paying attention and selecting relevant information, organizing information and integrating incoming information with existing knowledge.

The constructivist assumption is that learners do not passively absorb knowledge but rather construct it from their own experiences. Cognitive constructivism is a system of exploration of how learners, as individuals, adapt and refine knowledge. Cognitive constructivism posits that meaningful learning is rooted in and indexed by personal experience and that learners maintain ideas that seem intuitively reasonable to them. The ideas however are often at odds which canonical

knowledge held by the various disciplines. These inaccurate conceptions significantly influence how learners respond to formal instruction and often hinder the development of conceptions and interpretations held as acceptable by scientists. Mohan (1998) has described how students' misconcepts come into play in a constructivist classroom

In contrast to cognitive constructivism, social constructivism views knowledge as primarily a cultural product. Cognitive constructivism focuses on the internal structure of concepts, whereas social constructivism focuses on the context of their acquisition. From the social constructivist perspective a major role of schooling is to create social contexts for mastery and the conscious awareness of the use of cultural tools so that individuals can acquire the capacity for higher order intellectual activities. The expectation is that learning occurs as individuals contribute to and appropriate public ideas. Learning is an act of both individual interpretation and negotiation with other individuals. Knowledge in various disciplines is constructions that are subject to change as different kinds of evidence are discovered.

Constructivist learning or teaching is difficult to characterize for it is conceptualized differently by different theorists. Constructivism focuses both on individual cognitive processes and the social co-construction of knowledge. Cognitive processes adhere to a system of explanations of how learners, as individuals, impose intellectual structure on their worlds. Constructivism that emphasise social processes, on the other hand, view knowledge as having both individual and social components and hold that these cannot be viewed as separate in any meaningful way whereas social constructivists see learning as increasing one's ability to participate with others in meaningful activity. Cognitive constructivists focus on how individuals create more sophisticated mental representations and problem-solving abilities. In an effort to synthesise the above two, some scholars have proposed that knowledge is personally constructed and socially mediated. There is a fundamental theoretical problem in the teaching of science in the constructivist approach (Mathews, 2002). If knowledge cannot be imparted, and if it is to be constructed personally, then how can children come to knowledge of complex conceptual scheme that have taken the best minds hundreds of years to build up?

The constructivist pedagogy starts from the need of the learners and provides environment for their free expression, their creativity and their knowledge of how to be. A democratic environment provides meaningful learning for autonomous learners.

In constructivist view, knowing occurs by a process of construction by the knower. Rajan (2010) has described the basic principles of learning in constructivism, nature of constructivist classroom, nature of learning process and role of teacher in a constructivist classroom. Sharma (2001) has detailed the management and organisation of classroom, class discipline, constructivist teaching and evaluation procedures. Sood (2006) has elaborated the six phases and stages of constructivist classroom transaction.

Despite the potential benefits, there are practical problems in the practice of constructivist classrooms. Students require training to function effectively in their groups. It is reported many capable students are patently uninterested in helping their peers (Slavin, 1995); and negative consequence of group work such as bickering, exclusion, and academic freeloading are common. More competent of the children is not the more confident. The teachers must pair a child who is more advanced in his/her thinking with who is less advanced. Teachers must develop strategies for socializing students into new ways of dealing with peers as intellectual partners and be vigilant about students' influence on one another's thinking.

THE DILEMMA IN CONSTRUCTIVIST CLASSROOMS

Educators are struggling to develop new and more sophisticated repertoires of practice to realize the vision of children “constructing their own knowledge.” Implementing constructivist instruction is far more difficult than many in education realize. The most profound challenge for teachers are not associated with merely acquiring new skills but with making personal sense of constructivism as a basis for instruction. The challenges faced by teachers in creating constructivist classrooms have four dilemmas: (1) Conceptual (2) Pedagogical, (3) Cultural and (4) Political (Windschtl, 2002). Each dilemma is summarised below.

The conceptual dilemmas deal with the grasping the underpinnings of cognitive and social constructivism. It involves reconciling current beliefs about pedagogy with the epistemological orientations necessary to support a constructivist learning environment. Do all activities result in knowledge “construction” by learners? If certain ideas are considered correct by experts, should students internalize those ideas instead of constructing their own? Whether constructivist approaches flourish or flounder in classroom is determined by the degree to which individual teachers understand the concept of constructivism. Also, the implied precepts for

instruction break radically from the traditional educational model in which teachers themselves were schooled.

The pedagogical dilemmas entail honouring students' attempts to think for themselves while remaining faithful to accepted disciplinary ideas; developing deeper knowledge of subject matter; mastering the art of facilitation; managing new kinds of discourse and collaborative work in the classroom. What skills and strategies are necessary to become a facilitator of learning? Do I base my teaching on students' existing ideas rather than on learning objectives? Is the problem/activity meaningful? Is it important to the discipline? Does it require original thinking and interpretation or is it simply fact finding? What types of assessment will capture the learning I want to foster.

The cultural dilemmas include becoming conscious of the culture of one's own classroom; questioning assumptions about what kinds activities should be valued; taking advantage of experiences, discourse patterns, local knowledge of students with varied cultural backgrounds managing the collective transformation of students' beliefs and practices in accordance with constructivist norms. How can we contradict the traditional classroom routines and generate new agreements with students about what is valued and rewarded? How do my own past beliefs of what is proper and possible in a classroom prevent me from seeing the potential for a different kind of learning environment? Can I trust students to accept responsibility for their own learning?

The task is to transform the culture of the classroom. Using the concept of 'culture' to make sense of what happens in schools, researchers have asked; in what practices do people participate? What behaviours and attitudes are encouraged or discouraged? What is the relationship between students and teacher? Who has power to make decision, who does not and how are these power relationships maintained? What systems of thought are valued and modelled? What undertakings, what talents; are prized and rewarded. Teaching, from the cultural perspective, is more than addressing content; it is also about bringing all students to a shared understanding of what a lesson is and how to participate in it (Jackson, 1990).

The political dilemmas deal with confronting issues of accountability with various stakeholders in the school community; negotiating with key others the authority and support. How can I gain the support of administrators and parents for

teaching in a radically different and unfamiliar way? Will constructivist approaches adequately prepare my students for high-stakes testing for college admissions?

Reconceptualising the classroom in the constructivist culture is a risk-taking venture with political implications. The term political refers to those aspects of education that are linked with the exercise, preservation, or redistribution of power among students, teachers, administrators, parents, school board members, and other participants in the educational enterprise. There is a great deal of authority invested in the teacher to select and enact curriculum. However, the work of a teacher is becoming more of a routine in nature as state education agencies increasingly implement standardized curricula and administer achievement tests to assess performance of students. Teachers often feel the pressure to ‘tune’ their instruction to expectation from students and parents. Parents and educational stakeholders often see constructivist approach as dangerously experimental and are sceptical about the use of such pedagogy with their children.

ASSESSING STUDENTS’ KNOWLEDGE

Constructivist instruction is intended to cultivate understandings in learners that are grounded in meaningful contexts and that may be arrived at through different developmental trajectories depending on the student. Assessments of the above accomplishment require focus on the processes as well as on the products of learning. This will require different evaluation techniques such as observations, students’ journals, peer reviews, projects, reports of experiments, building of physical models, debates, assignments, collections, seminars, etc. Students must have a clear understanding of the criteria by which they will be assessed. If approached skilfully, these processes develop greater student ownership, less distrust and more appreciation that standards are not arbitrary. The understanding of students emerging from constructivist instruction is not compatible with the evaluation system in place. Many students report that they prefer to memorise scientific information rather than trying to understand because it is more efficient or better attuned to the assessment techniques found in many courses (Songer & Linn, 1991).

Goodlad (1984) reported “an extraordinary sameness of learning environment featuring bland, repetitive procedures of lecturing, questioning, monitoring and quizzing” is prevalent in most of the American schools (p. 249). Most of the school resist heterogeneous grouping. The dominant culture in schools is one of coping and compliance, where teachers control the intellectual activity to ensure uniform

“exposure” to the curriculum and to maintain discipline. In response, students over time grow to the role of passive observers rather than active participants in their own education (Windschtl, 2002). Thus, the constructivist classroom transactions and evaluation procedures are far more complicated than proposed by educationists.

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