

Constructivism as a Paradigm for Teaching and Learning

Faria Khan

**Pacific Academy of Higher Education & Research
University, Udaipur, Rajasthan, India**

Abstract

"You cannot teach a man anything; you can only help him find it within himself."

--Galileo

Constructivism is basically a theory -- based on observation and scientific study -- about how people learn. Constructivism in education has evolved over the past century due to the contributions of many individuals all over the world. This article provides an overview of the constructivist ideas and its comparison with the traditional ideas of teachings. The article also provides an outline of critical perspective and benefits of constructivism in education.

Introduction

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. When we encounter something new, we have to reconcile it with our previous ideas and experience, maybe changing what we believe, or maybe discarding the new information as irrelevant. In any case, we are active creators of our own knowledge. To do this, we must ask questions, explore, and assess what we know. 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' preexisting 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 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.

You might look at it as 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.

For example: Groups of students in a science class are discussing a problem in physics. Though the teacher knows the "answer" to the problem, she focuses on helping students restate their questions in useful ways. She prompts each student to reflect on and examine his or her current knowledge. When one of the students comes up with the relevant concept, the teacher seizes upon it, and indicates to the group that this might be a fruitful avenue for them to explore. They design and perform relevant experiments. Afterward, the students and teacher talk about what they have learned, and how their observations and experiments helped (or did not help) them to better understand the concept. Contrary to criticisms by some (conservative/traditional) educators, constructivism does not dismiss the active role of the teacher or the value of expert knowledge. Constructivism modifies that role, so that teachers help students to construct knowledge rather than to reproduce a series of facts. The constructivist teacher provides tools such as problem-solving and inquiry-based learning activities with which students formulate and test their ideas, draw conclusions and inferences, and pool and convey their knowledge in a collaborative learning environment. Constructivism transforms the student from a passive recipient of information to an active participant in the learning process. Always guided by the teacher, students construct their knowledge actively rather than just mechanically ingesting knowledge from the teacher or the textbook.

Constructivism is also often misconstrued as a learning theory that compels students to "reinvent the wheel." In fact, constructivism taps into and triggers the student's innate curiosity about the world and how things work. Students do not reinvent the wheel but, rather, attempt to understand how it turns, how it functions. They become engaged by applying their existing knowledge and real-world experience, learning to hypothesize, testing their theories, and ultimately drawing conclusions from their findings.

The best way for you to really understand what constructivism is and what it means in your classroom is by seeing examples of it at work, speaking with others about it, and trying it yourself. As you progress through each segment of this workshop, keep in mind questions or ideas to share with your colleagues.

How does this theory differ from traditional ideas about teaching and learning?

As with many of the methods addressed in this series of workshops, in the constructivist classroom, the focus tends to shift from the teacher to the students. The classroom is no longer a place where the teacher ("expert") pours knowledge into passive students, who wait like empty vessels to be filled. In the constructivist model, the students are urged to be actively involved in their own process of learning. The teacher functions more as a facilitator who coaches, mediates, prompts, and helps students develop and assess their understanding, and thereby their learning. One of the

teacher's biggest jobs becomes ASKING GOOD QUESTIONS.

And, in the constructivist classroom, both teacher and students think of knowledge not as inert factoids to be memorized, but as a dynamic, ever-changing view of the world we live in and the ability to successfully stretch and explore that view.

The chart below compares the traditional classroom to the constructivist one. You can see significant differences in basic assumptions about knowledge, students, and learning. (It's important, however, to bear in mind that constructivists acknowledge that students are constructing knowledge in traditional classrooms, too. It's really a matter of the emphasis being on the student, not on the instructor.)

Traditional 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.

What are some critical perspectives?

Constructivism has been criticized on various grounds. Some of the charges that critics level against it are:

1. It's elitist. Critics say that constructivism and other "progressive" educational theories have been most successful with children from privileged backgrounds who are fortunate in having outstanding teachers, committed parents, and rich home environments. They argue that disadvantaged children, lacking such resources, benefit more from more explicit instruction.

*“ In truth, progressivism didn't work with all 'privileged' kids,
just those who had advantages at home or were smart enough to do
discovery learning. ”*

— E.D. Hirsch

2. Social constructivism leads to "group think." Critics say the collaborative aspects of constructivist classrooms tend to produce a "tyranny of the majority," in which a few students' voices or interpretations dominate the group's conclusions, and dissenting students are forced to conform to the emerging consensus.
3. There is little hard evidence that constructivist methods work. Critics say that constructivists, by rejecting evaluation through testing and other external criteria, have made themselves unaccountable for their students' progress. Critics also say that studies of various kinds of instruction -- in particular **Project Follow Through**¹, a long-term government initiative -- have found that students in constructivist classrooms lag behind those in more traditional classrooms in basic skills.

What are the benefits of constructivism?

1. **Benefit**
Children learn more, and enjoy learning more when they are actively involved, rather than passive listeners.
2. **Benefit**
Education works best when it concentrates on thinking and understanding, rather than on rote memorization. Constructivism concentrates on learning how to think and understand.
3. **Benefit**
Constructivist learning is transferable. In constructivist classrooms, students create organizing principles that they can take with them to other learning settings.
4. **Benefit**
Constructivism gives students ownership of what they learn, since learning is based on students' questions and explorations, and often the students have a hand in designing the assessments as well. Constructivist assessment engages the students' initiatives and personal investments in their journals, research reports, physical models, and artistic representations. Engaging the creative

instincts develops students' abilities to express knowledge through a variety of ways. The students are also more likely to retain and transfer the new knowledge to real life.

5. **Benefit**

By grounding learning activities in an authentic, real-world context, constructivism stimulates and engages students. Students in constructivist classrooms learn to question things and to apply their natural curiosity to the world.

6. **Benefit**

Constructivism promotes social and communication skills by creating a classroom environment that emphasizes collaboration and exchange of ideas. Students must learn how to articulate their ideas clearly as well as to collaborate on tasks effectively by sharing in group projects. Students must therefore exchange ideas and so must learn to "negotiate" with others and to evaluate their contributions in a socially acceptable manner. This is essential to success in the real world, since they will always be exposed to a variety of experiences in which they will have to cooperate and navigate among the ideas of others.

References

- [1] Brooks, J.G. And M.G. Brooks. In Search Of Understanding: The Case For Constructivist Classrooms. Alexandria, Va: Association For Supervision And Curriculum Development, 1993.
- [2] Copple, C., L. Sigel, And R. Saunders. Educating The Young Thinker. New York: D. Van Nostrand, 1984.
- [3] Darling-Hammond, Linda, Et Al. Excellence In Teacher Education: Helping Teachers Develop Learner-Centered School. Washington, D.C.: National Education Association School Restructuring Series, 1992.
- [4] Dewey, John. Experience And Education. New York: Macmillan, 1938. Duckworth, E. "The Having Of Wonderful Ideas" And Other Essays On Teaching And Learning. New York: Teachers College Press, 1987.
- [5] Duffy, Thomas M., And David H. Jonassen. Constructivism And The Technology Of Instruction: A Conversation. New Jersey: Lawrence Erlbaum Association, 1993.
- [6] Forman, G., And F. Hill. Constructive Play: Applying Piaget In The Preschool. Monterey, Ca: Brooks/Cole Publishing Company, 1980.
- [7] Forman, George E. The Child's Construction Of Knowledge: Piaget For Teaching Children. Washington, D.C.: National Education Association, 1983.
- [8] Fosnot, Catherine Twoomey. Constructivism: Theory, Perspectives, And Practice. New York: Teachers College Press, 1989.
- [9] Fosnot, Catherine Twoomey. Enquiring Teachers, Enquiring Learners: A Constructivist Approach To Teaching. New York: Teachers College Press, 1989.

- [10] Kamii, Constance. Early Literacy: A Constructivist Foundation For Whole Language. Washington D.C.: National Education Association Early Childhood Educational Series, 1991.
- [11] Vygotsky, L. S. Thought And Language. Cambridge, Ma: Mit Press.