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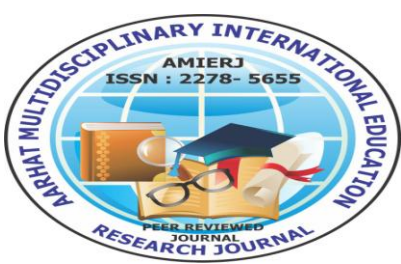
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CONSTRUCTIVISM: LEARNING THEORY AND ITS BENEFITS

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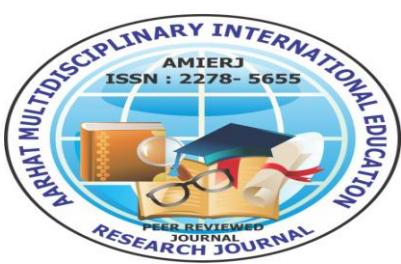
Introduction:

What is 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. 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,



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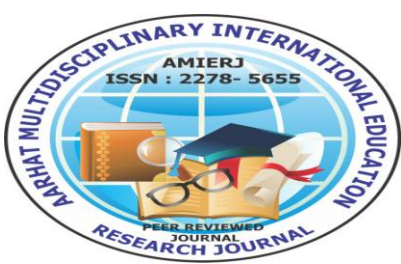
students find their ideas gaining in complexity and power, and they develop increasingly strong abilities to integrate new information. One of the teacher's main roles becomes to encourage this learning and reflection process. For example: Groups of students in a science class are discussing a problem 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.

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.

This theory differs 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



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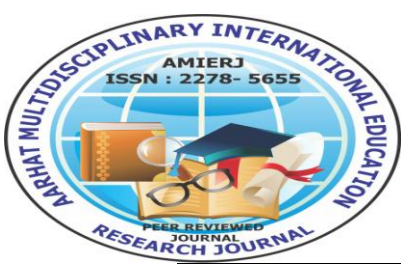
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place where the teacher ("expert") pours knowledge into passive students, who wait like empty vessels to be filled. In the constructivist model, the students are urged to be actively involved in their own process of learning. The teacher functions 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 & expanding to include the parts.
Strict adherence to fixed curriculum is highly valued.	Pursuit of student questions & interest is valued.
Materials are primarily textbooks & workbooks.	Materials include primary sources of material & 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 student construct their own knowledge.
Teacher's role is directive, rooted in authority.	Teacher's role is interactive, rooted in negotiation.



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Assessment is through testing, correct answers.	Assessment includes student works, observations, and point of view, as well as tests. Process is an important as product
Knowledge is seen as inert.	Knowledge is seen as dynamic, ever changing with our experiences.
Students works primarily alone	Students works primarily in groups.

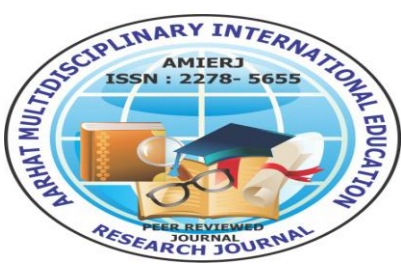
History of constructivism, and how has it changed over time?

The concept of constructivism has roots in classical antiquity, going back to Socrates's dialogues with his followers, in which he asked directed questions that led his students to realize for themselves the weaknesses in their thinking. The Socratic dialogue is still an important tool in the way constructivist educators assess their students' learning and plan new learning experiences.

In this century, **Jean Piaget** and **John Dewey** developed theories of childhood development and education, what we now call Progressive Education, that led to the evolution of constructivism.

Piaget believed that humans learn through the construction of one logical structure after another. He also concluded that the logic of children and their modes of thinking are initially entirely different from those of adults. The implications of this theory and how he applied them have shaped the foundation for constructivist education.

Dewey called for education to be grounded in real experience. He wrote, "If you have doubts about how learning happens, engage in sustained inquiry: study, ponder, consider alternative possibilities and arrive at your belief grounded in evidence." Inquiry is a key part of constructivist learning. Among the educators, philosophers, psychologists, and sociologists who have added new perspectives to constructivist learning theory and practice are **Lev Vygotsky**, **Jerome Bruner**, and **David Ausubel**. Vygotsky introduced the social aspect of learning into constructivism. He defined the "zone of proximal learning," according to which students solve

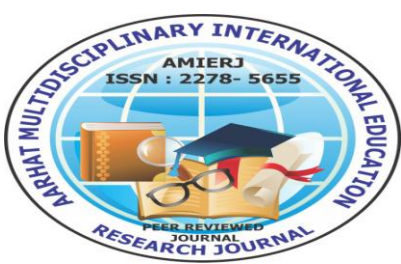


problems beyond their actual developmental level (but within their level of potential development) under adult guidance or in collaboration with more capable peers.

Bruner initiated curriculum change based on the notion that learning is an active, social process in which students construct new ideas or concepts based on their current knowledge. **Seymour Papert's** groundbreaking work in using computers to teach children has led to the widespread use of computer and information technology in constructivist environments. Modern educators who have studied, written about, and practiced constructivist approaches to education include **John D. Bransford , Ernst von Glasersfeld , Eleanor Duckworth , George Forman , Roger Schank , Jacqueline Grennon Brooks , and Martin G. Brooks.**

Benefits of constructivism

1. Children learn more, and enjoy learning more when they are actively involved, rather than passive listeners.
2. 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. Constructivist learning is transferable. In constructivist classrooms, students create organizing principles that they can take with them to other learning settings.
4. 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.



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5. 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. 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.

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