# Constructivist approaches

**(Taken from the Times Educational Supplement Great Minds booklet)**

<http://www.lancashireadultlearning.net/pluginfile.php/109188/mod_resource/content/0/Great_Minds_1_.pdf>

# Constructivist approaches

We often have common sense ideas that turn out to be wrong. Many people think that heavier things fall faster than lighter things, simply because intuitively it seems right. In fact, gravity pulls on heavy and light things by the same amount and, if nothing interferes with the objects, they will hit the ground at the same time. How we think and learn is summed up in cognitive theories such as constructivism and multiple intelligences.

Constructivist teaching doesn’t start by saying that this original intuitive idea is wrong; it constructs a path for the learner from the incorrect idea to the correct answer. Adults and students are not empty vessels; they will have ideas and knowledge about all sorts of things, often gathered from their own personal experiences. The essence of constructivist teaching is to “start from where the person is at”.

Three names that often come up within constructivist teaching are Jerome Bruner, Lev Vygotsky and Jean Piaget - who is often credited as the father of constructivism.

Sometimes called a schema, ‘constructivism’ suggests that learning is more effective when a student is actively engaged in building their own knowledge rather than passively receiving it from a teacher.

## What’s the theory about?

Constructivism says that students learn best when they construct a personal understanding of a concept or idea based on experiencing things and reflecting on those experiences. Learning should build on the knowledge that students already have.

## How can you put the theory into practice?

One of the goals of using constructivist teaching is that students learn how to learn. To do this, teachers need to train students how to do basic tasks, for example how to make notes, or how to analyse a passage of writing, even how to revise for tests. Too often we assume that others are responsible for teaching students how to learn, without checking that they are able to do so in the first place.

Once we know that students can take the initiative for their own learning then our lessons and schemes of work can provide opportunities for students to learn constructively.

## Constructivist teaching has a number of characteristics:

* Activities are interactive and student-centred.
* Learners are actively involved in lessons.
* There is a democratic environment in the classroom.
* Teachers act as facilitators of learning. Students are encouraged to be responsible and autonomous learners.

## How to use cognitive theories to improve your lessons

A constructivist lesson involves a lot of group work. Interactive teaching and learning are key features of the lessons. Challenging students’ common sense ideas is a good way of getting them to construct new ideas from their existing ones. Getting students to try out ideas makes the lesson much more dynamic and interactive.

There needs to be a focus on social and communication skills, as well as collaboration and the exchange of ideas.

Aristotle said that teaching is the highest form of understanding. Getting students to explain ideas and concepts to each other means that they must have internalised the ideas and constructed their own meaning. Checks are needed, of course, to ensure that their understanding is correct.

When planning lessons you need to introduce activities and ideas that challenge their current thinking. In other words, provide the students with a cognitive challenge, for example if students think that heavier things fall faster than lighter things, show them a video clip of an astronaut on the moon dropping a hammer and a feather together.

**“Challenging students’ common sense ideas is a good way of getting them to construct** **new ideas from their existing ones.”**

They will see that they both hit the surface at the same time. Ask them, in groups, to discuss how this differs from their own ideas. What makes the earth different from the moon and how could that difference affect how the feather falls? Then get the students to devise their own experiments where they could test whether or not heavier things fall faster than lighter ones.

If their experiments are practical, let them try them out and get their own answers to the problems. In this way they will have constructed their own, more scientifically correct, ideas of the effect that gravity has on objects.

## Jean Piaget 1896–1980

Jean Piaget was born in Neuchâtel, Switzerland. His research centred on how knowledge grows. His answer was that it is progressive. Children’s logic and thinking, he said, are initially entirely different from those of adults. Piaget concluded a lot about children’s thinking from studying the growth and development of his own children. He described four stages of mental growth:

* Sensory-motor stage (birth–two) Children concentrate on concrete (or real) objects.
* Pre-operational stage (two–seven) Children learn symbols in language, fantasy, play and dreams.
* Concrete operational stage (seven–11) Children master classification, relationships, numbers and ways of reasoning (arguing to a conclusion) about them.
* Formal operational stage (11+) Children begin to master independent thought and other people’s thinking.

In reality the stages are not strictly age related. Many children do not move from the concrete stage to the formal stage until much later.

## Lev Semenovich Vygotsky 1896–1934

Vygotsky’s theory suggests that development depends on interaction with people and the tools that culture provides. There are three ways a cultural tool can be passed from one individual to another.

* Imitative learning, where one person tries to imitate or copy another.
* Instructed learning, which involves remembering the instructions of the teacher.
* Collaborative learning, which involves a group of peers who strive to understand each other and work together to learn a specific skill. The four basic principles that Vygotsky outlined for development are:

- Students construct their knowledge.

- Development cannot be separated from its social context.

- Learning can lead development.

- Language plays a central role in mental development.

Vygotsky stated that there is a difference between what a child can do without help and with adult help. He called this difference the Zone of Proximal Development (ZPD). The ZPD defines those functions that have not yet matured, but are in the process of maturation. They are functions that will mature but are currently not developed unless guided by an adult.

## Jerome Bruner Born 1915

Jerome Bruner believes that information or knowledge is gained most effectively by personal discovery.

He advocates that students should be allowed to pursue concepts individually in order to gain a better understanding.

Teachers should guide students when necessary to progressively build their own

Knowledge base, rather than be taught.

While Piaget puts each developmental stage in a specific age range, Bruner says that students have all the stages available to them all the time, but that one stage tends to dominate. With appropriate teaching, other stages can be brought out.