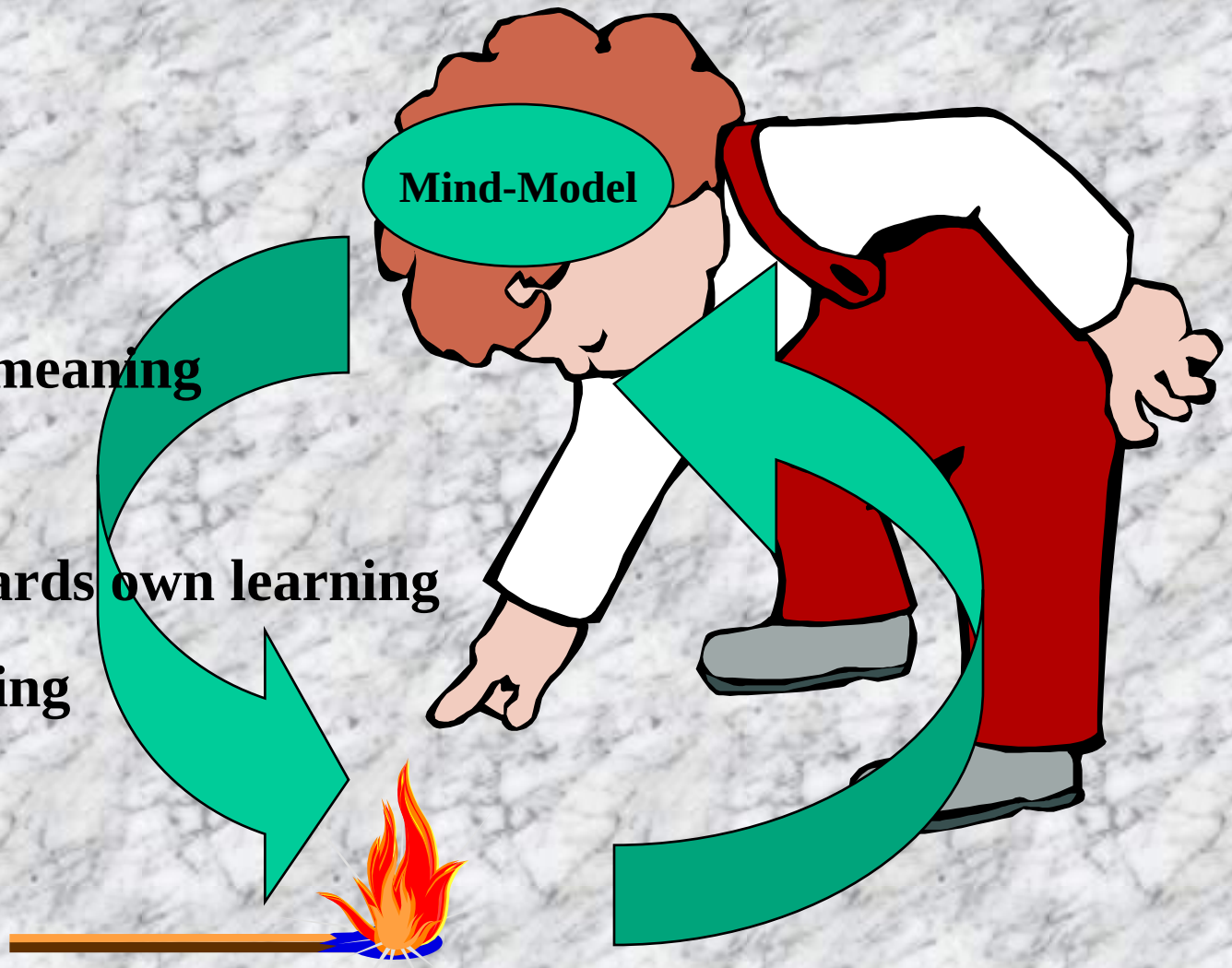
Constructivist views on science education

Constructivism and Learning

- Mind model
- Construction of meaning
- Active Process
- Responsible towards own learning
- Sharing of meaning



Constructivism and Learning

- **Learners mind is not empty**
- **Interaction between ideas that exists with the new experience and phenomena.**
- **Learner try to '*make sense*'s towards new experience or phenomena through construction of meaning**
- **Active process involved**
- **In learning, learner not only need to 'assimilate' new concepts but also 'construct', 'build' ,'move' and "change" the initial concepts.**

Comparison: Objectivism Vs Constructivism

Promary Assumption

Objectivism

Knowledge exists within and outside learners

Constructivism

Knowledge is not an objective, what we really know and understand is only our perception. It is determined by us. Knowledge does not have an absolute structure.

Effect of the Assumption on Education

Objectivism

Teachers help students to build knowledge in the context where it exists. They use analogy, examples and various techniques of remembering. They ask questions to held the students.

Constructivism

Teachers help students to construct new understandings and help to record them in student cognitive structure. They do that by helping students to build analogy,examples and student's own method of remembering. Teachers guide students to build questions that will lead them to higher level of understanding .

Teacher who practices……. Will say…..

Objectivism

- ***"There is something you want to know and I will teach you what I "***
- ***"I teach this , they learn this"***
- ***"The students are smart, they learn everything that I teach"***

Constructivism

- ***"There is something that you want to know and I will teach you how you can learn about it"***
- ***I teach this, they learn that"***
- ***"The students are smart, they learn something that I never plan to teach them"***

Are you practicing Constructivism…..?

- **Students are given opportunities to say their ideas**
- **Students share ideas**
- **Students respect their friends ideas**
- **All ideas are well excepted.**
- **Student centered learning.**
- **Activities based on ‘hands-on’ and ‘minds-on’.**
- **Teachers focus on scientific and thinking skills.**
- **Students apply new ideas in different context to strengthen their understanding.**
- **Students review the learning process that they have gone through.**
- **Students try to relate their own ideas to newly constructed ideas.**

- **Teachers prepare appropriate teaching materials.**
- **Students are encouraged to build their own hypothesis not the teachers explain the theories.**
- **Teachers pose question that will stimulate students response.**
- **Teachers do not do direct explanation.**
- **A lot of interaction takes place between students and teacher.**
- **Teachers are concerned about students interest.**
- **Students work cooperatively.**