



Dynamic Learning – Seeing, Observation, Cognitive processes and Conceptual understanding

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Abstract

The aim of the article is to demonstrate the possibility to teach at a level of conceptual understanding called “core cognition”. It connects understanding with sensory perceptions of the physical world. The article focuses on visual perceptions. In order to reach this level of understanding, the learning process focuses on the passage from seeing to observing a phenomenon or an environment. This learning process is called “Dynamic learning”. The learning process enables students to have an integrated visual perception that includes knowledge and visual perception of an environment.

Two experiments are described in the article that show the integration between knowledge and cognitive processes on one side and seeing and observing on the other side. In the first experiment, middle school students went out to sand dunes, watched them and drew them. During a whole year they studied the chemical composition of the dunes, animals and plants of it, and visited the dunes several times. They drew them again at the end of the year. The drawings show significant perceptual change.

At the second experiment, 31 college students with 40 children, went out to a variety of environments. Each group, consisting an adult with one or two children, chose an environment. All the members of the group drew this environment, then they spoke about the drawings and the environments. Then the drew the same environment again.

In the two experiments there are drawings that can show the variety and complexity of the initial seeing of environments. It enables to listen to the aspects in a given environment that interest the observers. In both experiments, one could observe the unique way of seeing the environment by the learner integrated with the learnt concepts in his/her drawings. In the first experiment, there is an analysis of the changes of perception the students experienced. The four drawings that are deeply analyzed show a surprise omission of the dunes in the initial drawing, and a significant change after the learning process. In the second experiment, the mediation was mutual, and related to the process of observation of the relevant environment. Following the mediation there were significant changes in the perception of the environment by part of the academic students and the children. Generally, the children were more attentive to the mediation processes than the students. A general analysis of the level of conversation is done and also of the levels of the change in the drawings. In addition, a deep analysis was done on 8 unique drawings of a student (teacher) and three children.