Focus on Deep Learning and the Constructivist Approach

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One of the challenges of schooling has been to maintain a balance of a child's happiness in school while achieving high levels of success. In other words, schools need to create learning experiences that sustain a child's momentum for curiosity while at the same time providing the child with a sense of accomplishment. Simply put, how does school enhance a child's personal fulfillment, promote social and emotional well-being, and contribute to life-long success?

One solution has been to create an alternative to traditional models of teaching and learning that can make school more than just the acquisition of academic knowledge without overlooking concerns about the future. As Jean Piaget put it: "The principal goal of education is to create men and women who are capable of doing new things, not simply of repeating what other generations have done--men and women who are creative, inventive and discoverers, [who] have minds which can be critical, can verify [rather than] accept everything they are offered" (Kohn, 1999, p.116).
Analysis of the content of some traditional school curriculum and the standardized tests that support it affirm the low cognitive level of the tasks often required. In other words, being able to recognize grammatically correct alternatives on an objective test does not tell us whether the learner is able to produce good prose or to communicate ideas clearly. Many lessons and tests support a model of knowledge as collections of bits of information that demand fast responses and militate against reflection; and the standardized format prescribes tasks in which the learner is to find correct answers rather than to engage in interpretation and problem solving.

Alternative models to more traditional forms of learning are being built on the notion of deep learning: the belief that learners have their own theories of how things work--why the sun comes up every morning, why trees sway with the breeze, and even, what love is--and that deep learning involves becoming dissatisfied with one's existing beliefs and finding new ideas that are plausible to oneself and explainable to others.

For example, deep learning was in progress when one teacher asked how the earth was formed and eight-year old Tommy volunteered his own theory by responding that “the earth formed the southern hemisphere of the globe while the sky made up the northern hemisphere. Sky and earth were joined at the equator.” Tommy agreed that if he were to walk in a straight
line he would eventually circle the earth and come back to the place where he had started from. But one thing puzzled Tommy. Why hadn’t he ever heard of anyone crossing the flat surface of the earth and coming to the point where the sky and earth meet?

Unknown to Tommy and perhaps to some of the adults around him, he had begun the process of "deep learning," whereby as he grows he will become less satisfied with his initial beliefs and have to find new ones that are plausible to himself and explainable to others for which he can take ownership. Shallow learning, on the other hand, is being "told" knowledge without personal commitment or deep consideration.

To encourage the teaching and development of higher order skills, thinking processes and problem solving, a deep learning experience must allow learners to express their initially crude beliefs and "grow" to find new ones for which they can take ownership. In other words, deep learning begins with the active involvement of the interests and experiences of the learner.

Cognitive psychologists have come to recognize that "deep learning" is the discovery of concepts that transform our perspective. This most often occurs when we include ourselves in what we contemplate, and allow our questions to haunt the very basis of our identity. Superficial learning is
when we learn theories, memorize facts, regurgitate bodies of knowledge without reflecting on the deeper meaning toward which this knowledge points. For example, when we learn a foreign language, a technical field, or scientific discipline, we master the isolated parts and details of the subject. But, if we do not go beyond the details to the sense of it all, our field of study has no power to touch or to transform us. As educators, we know that deep learning comes from penetrating the sense of it all. In other words, wisdom cannot be taught by conventional methods—it must be invoked from within, beginning with the interests and experiences of the learner. Abraham Maslow, a pioneer in studying the positive aspects of the human personality, described deep learning as moments of pure happiness, when all doubts, fears, inhibitions, tensions, and weaknesses were left behind and the learner is unselfconsciously immersed in the learning process (Maslow, 1971).

When people are asked to reflect on their long-term goals for children, few think their child should go to school to acquire a laundry list of facts. Psychologists have long ago discovered that committing things to memory may train you to be a better memorizer, but it doesn't provide lasting cognitive (thinking) benefits. And, when too much content is being covered, thinking may be undermined by the effort to transmit information on topics without sufficient scaffolding with which the learner can attach meaning or
relevance to what is learned. Such a curriculum may teach the child basic facts but not what to do with them, or to be able to recognize and apply them outside of the classroom.

Constructivism is a theory of learning that derives from the recognition that knowledge is "created" through our experiences and, like Tommy, that we form beliefs, build theories and discover relationships by actively engaging our experiences in the construction of knowledge. In other words, the teacher does not start with knowledge already organized and "told" to the learner. Organizing facts and ideas for oneself is completed by the learner in a continuous process of learning.

Deep learning, therefore, isn't a matter of acquiring new information and storing it on top of the information we already have. It's a matter of coming across something unexpected, something that can't easily be explained by the theories or beliefs we've already developed. To resolve the conflict, we have to go further--to probe, explore and discover more--and, perhaps, change what we previously believed. We have to reorganize our way of understanding to accommodate the new and possibly contradictory information encountered in life.
Influenced by the work of Piaget (1963), Vygotsky (1962), and Dewey (1938), there are three cardinal principles that characterize this view of learning:

Principle 1: Children are innately curious and will explore without adult intervention. Dewey wrote that the child, "At every let-up of external pressure his attention, released from constraint, flies to what interests him." (Dewey, 1938, p.2). The greater the pressure on students to achieve, the less engaged students become with what they are learning.

Principle 2: Human intelligence unfolds in stages. Especially during the early stages, children learn best by engaging the world through meaningful interaction that can be social and emotional as well as cognitive. We are coming to understand that the progression of ideas in a classroom need not always be linear or quantifiable. True intellectual growth "does not take place in small, linear increments but is better described as occurring in
Principle 3: Educational experiences should be defined by the creation of an environment that stimulates exploration and discovery. A good learning experience is the child's unselfconscious immersion in the subject matter culminating in a "peak experience." The problem is that a lot of schooling does not provide enough peak experiences to satisfy most learners’ demands for them.