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L. Dee Fink
University of Oklahoma

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Higher Level Learning: A Taxonomy for Identifying Different Kinds of Significant Learning

L. Dee Fink, *University of Oklahoma*

Two major changes are occurring in higher education that will have a significant impact on teaching and learning if they converge. One is a paradigm shift for institutions from "providing instruction" (the teaching paradigm) to "producing learning" (the learning paradigm) (Barr and Tagg, 1995). Second, in recent years a number of organizations and individuals have been calling for more significant kinds of learning by college students (Association of American Colleges, 1985; Gardiner, 1994). In general, the call is for students to acquire more significant kinds of cognitive learning (e.g., critical thinking as well as "understanding and remembering"), but also for something more than just cognitive learning.

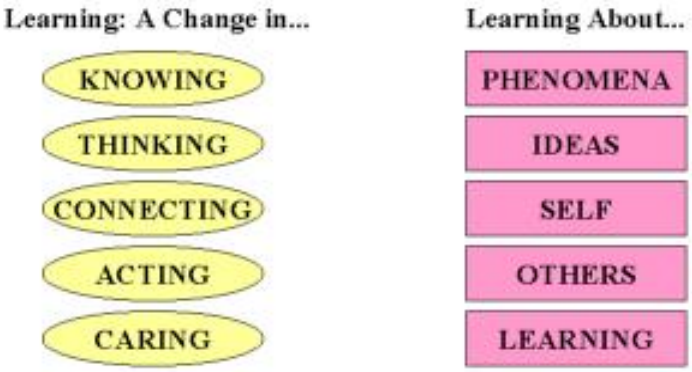
In the past, some teachers have turned to Bloom's classic taxonomy for guidance in providing more significant kinds of learning (1956). However, this taxonomy needs to be updated and broadened considerably. Still others have turned to the powerful concept of active learning (Bonwell & Eison, 1991; Meyers & Thomas, 1993). As valuable as this concept is, it is ultimately a concept that is focused on *how* people learn, not on what they learn. I propose that the higher education community needs a parallel concept that is focused on *what students learn* and that an appropriate name for this concept is "Higher Level Learning."

A Model of Learning In order to respond to the need for new kinds of learning goals, it seems helpful to start by re-conceiving what we mean by "learning." My own rethinking of the concept of learning has been based on my observations of what people are learning when they learn something that they (or others) deem significant. This rethinking has led to the construction of a model of learning that consists of ten components. (See Figure 1.) These components are, in essence, responses to two general questions:

- What are students learning *about*?
- What are the *kinds of change* that occur in learners?

Figure 1

The Components of Higher Level Learning



In any learning experience, students may learn *about* a number of things. They learn *about*...

- **Phenomena** - the "things" in life, e.g., rocks, human behavior, historical events, literature, etc.
- **Ideas** - interpretive perspectives that give meaning to particular kinds of information, e.g., evolution, Marxism, style periods.
- **Self** - one's own personal characteristics, self-image, self-ideal (i.e., what I want to be).

- **Others** - people with whom one has an actual or potential relationship: how they respond to events, how they communicate, what affects them, etc.
- **Learning** - what learning is, how it takes place, what affects it, one's own learning patterns, what helps one learn more effectively.

Regardless of what students are learning about, the learning experience can also result in different kinds of change in the learner, e.g., a change in...

- **Knowing** - an increase in students' "understanding and remembering" of information, relationships, concepts, etc.
- **Thinking** - the ability to think critically, creatively, and/or practically.
- **Connecting** - the ability to connect and integrate, for example, different kinds of information and ideas with each other, classroom learning with other parts of one's life, etc.
- **Acting** - a readiness to "engage in an action": physical actions (e.g., playing the piano), skills (e.g., communication, computer literacy), and/or the ability to organize large complex projects.
- **Caring** - one's feelings, interests, and/or values.

Adding Significance According to this model, there are two ways that teachers can add significance to teaching and learning. One is by helping students **learn about additional things**, e.g., about themselves, about others, about learning. A second way is by helping students **change in different ways**, e.g., by attempting to change their ability to think about the subject, their ability to "do" something, their ability to connect different kinds of knowing, or the degree to which they "care" about something.

Figure 2

A Taxonomy of Higher Level Learning

Type of Significance	Key Component of Learning Involved	Special Value
Learning how to learn	Learning	Provides capability for long-term continuation of learning.
Motivation	Caring	Provides the energy (short term or long term) for learning; without this, nothing significant happens.
Human Dimension	Self, Others	Connects one's self to onself and to others; gives human significance to the learning.
Integration	Connecting	Adds power by connecting different ideas, disciplinary perspectives, and/or realms of life.
Application	Thinking, Acting	Allows other learning to become useful.
Foundation	Knowing	Provides necessary information for other kinds of learning.

The components in this model of learning can be used to construct a "Taxonomy of Higher Level Learning," as shown in Figure 2. Each category represents a distinct kind of learning with a particular kind of value. These six categories, and the key component(s) of higher level learning involved in each category, are briefly described, starting at the bottom of Figure 2 with the most familiar kind of learning.

- **FOUNDATION (knowing):** This is what (we hope) happens in most courses now. Students acquire some basic knowledge, something they understand and remember, usually about some "phenomena" and set of "ideas." This information and understanding is a necessary foundation for other kinds of learning, especially "application" and "integration" learning. However, "knowing" can be about self, others, and learning as

well.

- **APPLICATION (thinking, acting):** When students take foundational knowledge and learn how to think about issues and/or how to become ready to act in regard to that knowledge, they are learning how to "apply" that earlier learning.
- **INTEGRATION (connecting):** Two kinds of integration are currently recognizable in higher education. First, interdisciplinary courses integrate two or more realms of ideas, e.g., an understanding of the biological environment and public policy on the environment. Second, students sometimes learn how to integrate two or more realms of their life, e.g., classroom learning with work life, community life, or personal life.
- **HUMAN DIMENSION (self, others):** Sometimes a course allows students to better understand themselves and/or how to interact with other people. This may happen because of the course content (e.g., studying psychology or sociology) or because of the kinds of learning activities used (e.g., well-designed small group activities). When this kind of learning happens, students are learning about the "Human Dimension" of life.
- **MOTIVATION (caring):** Some courses change the way we feel or care about something, e.g., about the subject of the course, ourselves, or learning. When we care about something, then and only then do we have the motivation and energy necessary to learn about it in a lasting way. Caring creates a desire to learn; without it, little of educational significance happens.
- **LEARNING HOW TO LEARN (learning):** The idea of helping students "learn how to learn" has been around a long time. When students do learn about learning and/or how to learn, they have a greater capability for better learning, both in their present courses and in future learning situations. Therefore, this kind of learning has the potential for generating even more learning in the future.

Using the Concept of "Higher Level Learning" The primary application of the concept of "Higher Level Learning" will be in instructional design. When teachers design learning experiences for their students, this concept and the associated taxonomy can identify several ways for them to formulate learning goals that are truly significant for their students. Also, teachers can use this concept to

weigh the advantages of alternative and innovative ways of teaching. For example, problem-based learning is particularly effective at promoting "application," interdisciplinary learning addresses the need for "integration," and role playing can greatly facilitate learning about the "human dimension" of life.

The concept of "Higher Level Learning" has several other uses as well. Two examples include the following: (a) students can use the concept to guide their own learning when constructing learning portfolios; and (b) institutions, when evaluating the teaching of faculty members, can ask for evidence of the degree to which their courses promote higher level learning.

Ultimately the hope is that the concept of "Higher Level Learning" will provide a "road map" for teaching and learning that is simple and focused, yet rich and complex, for any individual or organization wanting to promote more significant learning in higher education.

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