Introduction

Knowledge often comes to us via transcribed content or artifacts, which is derived from other's knowledge. These are **facts, concepts, processes, procedures, and principles** (Clark & Chopeta, 2004). Thus, artifacts are used in the learning process for creating knowledge, while in turn, knowledge creates new artifacts.

Credits: http://www.nwlink.com/~donclark/learning/artifacts.html

Content

There are five primary types of content (artifacts of knowledge): facts, concepts, processes, procedures, and principles (Clark, Mayer, 2007):

Facts Specific and unique data or instance.

Concepts A class of items, words, or ideas that are known by a common name, includes multiple specific examples, shares common features. There are two types of concepts: concrete and abstract.

Processes A flow of events or activities that describe how things work rather than how to do things. There are normally two types: business processes that describe work flows and technical processes that describe how things work in equipment or nature. They can be thought of as the big picture, of how something works.

Procedures A series of step-by-step actions and decisions that result in the achievement of a task. There are two types of actions: linear and branched.

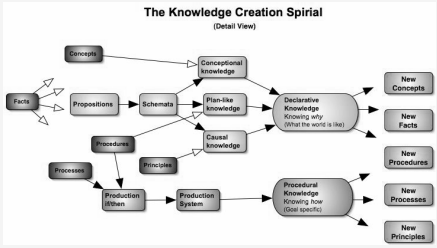
Principles Guidelines, rules, and parameters that govern. It includes not only what should be done, but also what should not be done. Principles allow one to make predictions and draw implications. Given an effect, one can infer the cause of a phenomena. Principles are the basic building blocks of causal models or theoretical models (theories).

Procedural Knowledge

Procedural models focus on tasks that must be performed to reach a particular objective or goal. It is characterized as knowing how. Procedural knowledge is often difficult to verbalize and articulate (tacit knowledge) than declarative knowledge.

Procedural knowledge emphasizes hierarchical or information processing approaches based upon productions. A combination of productions create production systems.

Knowledge Creation Process



Theses artifacts (content) are in turn, used in the knowledge creation process to create two types of knowledge: declarative and procedural, which is shown in the detailed view

Productions

Productions are the building blocks of procedural knowledge and are composed of a condition and an action or IF and THEN statement. For example, IF the light is red, THEN stop (Merrienboer, 1997).

Production Systems

A production system is a set of productions for cognitive processing. It is characterized by the recognize-act cycle in which one production leads to another production. For example:

IF the light is red, THEN stop
IF light turns green, THEN release brake
IF brake is released, THEN step on gas pedal

Thus, in a training environment, **knowledge is mainly composed of declarative knowledge**, while **skills are mainly composed of procedural knowledge**. Attitudes are composed of genes and deeply rooted knowledge and skills.

Sponsored by **CrosswordCheats.com**
Learn to solve cryptic crosswords!
http://crosswordcheats.com