

Introduction

One gains knowledge through context (experiences) and understanding. With context, one can weave the various relationships of the experiences. The greater the context, the greater the variety of experiences that one is able to extract.

The greater the understanding of the subject matter, the more one is able to weave past experiences (context) into new knowledge by absorbing, doing, interacting, and reflecting. Thus, understanding is a continuum (Cleveland, 1982):

■ **Data comes about through research, creation, gathering, and discovery.**

■ **Information has context.** Data is turned into information by organizing it so that we can easily draw conclusions. Data is also turned into information by "presenting" it, such as making it visual or auditory.

■ **Knowledge has the complexity of experience,** which comes about by seeing it from different perspectives. This is why training and education is difficult - one cannot count on one person's knowledge transferring to another. Knowledge is built from scratch by the learner through experience. Information is static, but knowledge is dynamic as it lives within us.

■ **Wisdom is the ultimate level of understanding.** As with knowledge, wisdom operates within us. We can share our experiences that create the building blocks for wisdom, however, it needs to be communicated with even more understanding of the personal contexts of our audience than with knowledge sharing.

Often, the distinctions between data, information, knowledge, and wisdom continuum are not very discrete, thus the distinctions between each term often seem more like shades of gray, rather than black and white (Shedroff, 2001).

Data and information deal with the past. They are based on the gathering of facts and adding context. Knowledge deals with the present. It becomes a part of us and enables us to perform. However, when we gain wisdom, we start dealing with the future as we are now able to vision and design for what will be, rather than for what is or was.

Credit: Donald Clark

<http://www.nwlink.com/~donclark/performance/understanding.html>

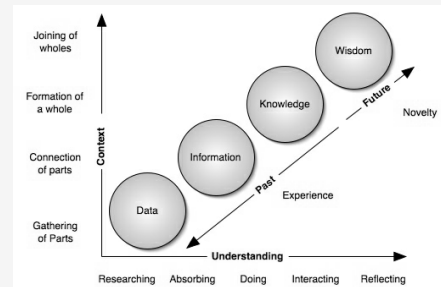
Data

Data is created with facts. Thus, a datum (see note below) can be thought of as an "artifact of a fact".

Data is the building block of meaning. It has no context except for its relationship to other bits of data. Without further context, data is meaningless as the user cannot determine where it came from, why it is being communicated, etc. Examples of data are lists of temperature, scores, and bits of news. (Wurman, 2001)

Note: Data can pose as information. For example, trivia and bits of news is just data as it has nothing to teach us. In addition, what constitutes information to one person, may be data to others as they do not have the needed context to make full use of it.

Continuum of Understanding



Information

Inform originally meant to give shape to; while information is meant to shape a person.

Information comes from the form that data takes as it is arranged and presented in different ways. This "massaging" of the data adds context to it and allows us to understand something about the data that is presented to us. Researchers often describe information as a message that is communicated. As with any message, it has a sender and a receiver. The purpose is to change the receivers' way of perceiving something so as to cause an impact on their judgment and behavior.

Knowledge

Locke gave us our first hint of what knowledge is all about. Since that time, others have tried to refine it. Davenport and Prusak (1998, p. 5) define knowledge as, "a fluid mix of framed experience, contextual information, values and expert insight that provides a framework for evaluating and incorporating new experiences and information." Notice that there are two parts to their definition: First, there is content: "a fluid mix of framed experience, contextual information, values and expert insight." This includes a number of things that we have within us, such as experiences, beliefs, values, how we feel, motivation, and information.

The second part defines the function or purpose of knowledge, "that provides a framework for evaluating and incorporating new experiences and information." Notice how this relates back to Locke's definition — we have within us a framework (one idea) that we use for evaluating new experiences (the second idea).

Wisdom

Wisdom is the ultimate level of understanding. It is achieved when we see enough patterns and meta-patterns in our knowledge base to be able to synthesize and then use them in novel ways (Wurman, 2001). Patterns can be classified as (Aldo de Moor, 2006):

- **Goal patterns** — represent objectives

- **Communication patterns** — describe communicative interactions

- **Information patterns** — conceptualize knowledge obtained from knowledge analysis activities

- **Task patterns** — define which information patterns are associated with particular steps in a process

- **Meta-patterns** — are conceptual in nature and used for interpreting, validating, linking, and assessing the quality of other patterns

Once there are enough patterns on a task or subject, they can be linked together, we are then able to make inferences for interpreting, assessing, and predicting new uses for the patterns.



By **[deleted]**
cheatography.com/deleted-
2754/

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