Concept Analysis
by Miki Lane, MVM Communications and ISPI Board Member

Concept Analysis Introduction
Concept analysis is a tool/technique helpful to many HPTers. It helps individuals and teams create clear statements, definitions, and examples about a “concept.” For example:

- Has your company been struggling with diversity issues?
- Has it been able to develop a clear sexual harassment policy?
- Have you ever wondered what was really meant by business casual?

Concepts are, as Webster’s states, “ideas; things conceived in the mind.” Concepts can be concrete, like triangle, table, and dog, or abstract, like business casual, sexual harassment, or physical aggression.

If you feel like these are fuzzy, hard-to-operationalize issues, you’re treading in the water of concept analysis. Concepts are, as Webster’s states, “ideas; things conceived in the mind.” Concepts can be concrete, like triangle, table, and dog, or abstract, like business casual, sexual harassment, or physical aggression.

Concepts are critical to analyze if the definition of the concept is required for the proper conduct of your company’s business. For example, is it critical that all of your customer service representatives are clear as to your company’s definition of “customer service”? Is it also critical that your manufacturing units know what your company’s definition of quality is?

Concept analysis is also critical if the clear understanding of the concept is critical to the task that needs to be performed.

We also do concept analysis if there is confusion or ambiguity about the concept or to clarify what may otherwise be taken for granted.

Examples of concrete concepts are fairly easy to identify. We all know what a table or a square looks like, and we can discern the differences between a variety of examples of them. However, the distinctions become blurred when you start talking about issues of quality or diversity.

Think of a diagram of a target, and let’s work with the concept of quality. If you are manufacturing widgets, it is probably easy to determine which widgets are right on target. If there are any defects, you need to determine if the widget will still be considered a quality widget.

This is where you start to get to the outer reaches of the target, and the line separating a hit or a miss can get blurry. You need specified criteria for what constitutes an acceptable widget. The widgets and their customer applications may accept a high degree of variation and still meet performance criteria. If you are manufacturing the latest generation of computer chips, your criteria of acceptance may be beyond six-sigma territory.

The idea is that your organization’s definition of what constitutes quality must be clearly defined to everyone in the organization. There can be no blurring of the lines, especially if it means that there is a possibility of negative consequences.

Concept Analysis Process Steps
How do you conduct a concept analysis? There is a process that you can use that involves the following five steps:

1. Draft a tentative definition of the concept.
2. Determine the critical attributes of the concept (all examples of the concept need to exhibit all of the critical attributes).
3. Determine the variable attributes of the concept.
4. Develop a set of examples that include clear examples, divergent examples, and close-in nonexamples.
5. Develop a test to determine if learners can identify, describe, and discern between examples and nonexamples of the concept.

At the ISPI Board meeting held in September, the Board attempted to use this process of concept analysis to clarify the concept of “human performance technology (HPT).”

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**Concept Analysis Process Example**

**Tentative Definition**

The reason we do a tentative definition is that this is the point where you ensure that your corporate-specific information is included in the definition. You state your best guess for the definition, which will either be accepted or modified later in the process.

Human performance technology (HPT) is a process for achieving desired organizational and individual results. The goal of HPT is to provide high-quality, sustainable products and services. Results are achieved through a process that

- Considers the institutional context
- Describes desired performance
- Measures gaps between desired and actual performance
- Identifies root causes
- Selects interventions to close the gaps
- Measures changes in performance

**Critical Attributes**

The critical attributes are those attributes of a concept that every single example of that concept must have/exhibit. If the concept is “square,” all examples of a square must have four sides, equal sides, four right angles, straight sides, and be a closed figure. It turns out that the list of critical attributes becomes the accepted definition of the concept.

For HPT, the critical attributes are listed below.

1. Is a set of systematic, replicable processes that include: inputs (FEA), transformers/manipulators/interpretations, outputs (recommended solutions), and outcomes/consequences/results
2. Includes at least two levels of “focus” (individual, organizational, societal)
3. Targets results
4. Identifies and ensures requirements for performance are present
5. Treats organizations as living/open systems
6. Is based on proven principles (cognition, motivation, measurement/evaluation, communication, etc.)
7. Adapts to existing and potential organizational contexts and constraints

**Variable Attributes**

The variable attributes are those that help the concept display its greatest amount of variation. All of the critical attributes must still be evident. With our square example, the variable attributes are color, tilt, and size. A large magenta, dotted square, positioned on one corner (diamond shaped) is still an example of a square if it has all of the critical attributes.

For HPT the variable attributes may address the following:

1. Societal impact
2. Nonhuman issues
3. Types of interventions/solutions
4. Specific processes/models
5. Principles of
   - OD
   - Ergonomics
   - Learning
   - Instruction
   - Economics
6. Contextual constraints

**Examples and Testing**

This is as far as we got during the Board meeting. The next step in the process is to create a set of clear examples; that is, those examples that can be easily identified as having all of the critical attributes and the variable attributes are minimal.

For example, if we choose ISD and the classic ISD model, ADDIE (Analysis, Design, Development, Implementation, and Evaluation), does our concept analysis work? Let’s look at each of the critical attributes and see if ADDIE fits.

**Critical Attributes**

1. A set of systematic, replicable processes that include: inputs (FEA), transformers/manipulators/interpretations, outputs (recommended solutions), and outcomes/consequences/results
   
   **ADDIE certainly meets this criterion!**

2. At least two levels of “focus” (individual, organizational, societal)
   
   We could get some arguments here. Usually this process focuses on one level at a time, but two are possible.

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3. Targets results
It will evaluate whether or not the intervention was successful, but at what level and is it results oriented?

4. Identifies and ensures requirements for performance are present
Hopefully the analysis phase will do that, although the model has and will be used without that focus.

5. Treats organizations as living/open systems
The more enlightened practitioners of the ADDIE model will say that they are doing this, but it is usually implemented in fairly closed systems.

6. Based on proven principles (cognition, motivation, measurement/evaluation, communication, etc.)
One would hope that would be the case.

7. Adapts to existing and potential organizational contexts and constraints
Classical ADDIE is not very flexible.

So with a couple of minor caveats, classic ISD, using the ADDIE model, seems to meet all of the criteria of the critical attributes.

What about the variable attributes?

Variable Attributes

1. Societal impact
The ADDIE model could be used to develop, implement, and measure interventions designed to have a societal impact.

2. Nonhuman issues
The ADDIE model could be used for nonhuman products and processes.

3. Types of interventions/solutions
The ADDIE model is robust enough to be used with a variety of interventions/solutions.

4. Specific processes/models
We are looking at one process and model with ADDIE.

5. Principles of
OD
Ergonomics
Learning
Instruction
Economics
The ADDIE model certainly uses training and development principles.

6. Contextual constraints
Theoretically, the analysis phase of the model takes into account the context.

It seems that ADDIE will fit with our definition and critical and variable attributes. What about the close-in nonexamples and other examples? Certainly if we leave out any of the parts of the ADDIE model, which happens in real life often enough, that would be a nonexample.

Concept Analysis Summary

Many more “tests” of a concept are needed to see if it really works and to modify it as necessary.

ISPI welcomes your comments/contributions to this process as it applies to our desire to refine the current definition of HPT.

Even if you don’t further explore the HPT concept analysis, look for other concepts that need clarification within your own organizations. Chances are wherever people are unclear, ambiguous, confused, or acting inappropriately, you may be dealing with the blurry edges of a concept. By conducting a concept analysis, you can bring clarity to the situation.

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