

## Using Concrete Examples to Teach Abstract Ideas

### Overview

One of the main differences between experts and novices is the way in which their knowledge is organized, experts having a more hierarchical, interconnected, and contextualized understanding of their domain, and novices having a disjointed and rather random organization (*How People Learn*, 2000). As a consequence, experts often forget what is easy and what is difficult to learn. We are striving to present material in a way that is better at facilitating a student's ability to make meaningful connections to the material and to correctly organize it in their brain. The main idea is that we always present concrete examples first and terminology or abstract concepts second.

### Helpful Tips

- Ask yourself, "What do I think my students already know and how can I relate this new information to that?"
- Try to imagine that you knew nothing about the topic. What is something in every-day life that might relate to this? Or, what is an example of this concept that students might understand?

### Example

I am teaching students about the different types of symbiotic relationships (organisms living together). I start with a scenario where the acacia tree produces little orange beadlike structures that are filled with oils and proteins that attract ants. In turn the ants aggressively attack anything that touches the tree. In this way, both organisms benefit each other. Then I introduce the term: This is called *mutualism*.

### Worksheet

**Specific Learning Objective** (What is the desired outcome for student learning?)

**Assessment Standard** (What will students do to demonstrate their knowledge?)

**Context** (Where in your course/lesson will you do this activity? Why is it needed/helpful in this place?)

**Abstract Concept** (What abstract concept are you trying to teach?)

**Concrete Example** (What is the concrete example you will give students *first*?)

**Details of the Lesson** (Use this space below to outline your lesson plan)

## What is Stress?

Adapted from OpenStax (<http://cnx.org/content/col11629/1.5>)

A useful way to conceptualize **stress** is to view it as a process whereby an individual perceives and responds to events that he/she appraises as overwhelming or threatening to his/her well-being (Lazarus & Folkman, 1984). A critical element of this definition is that it emphasizes the importance of how we appraise—that is, judge—demanding or threatening events (often referred to as **stressors**); these appraisals, in turn, influence our reactions to such events. Two kinds of appraisals of a stressor are especially important in this regard: primary and secondary appraisals. A **primary appraisal** involves judgment about the degree of potential harm or threat to well-being that a stressor might entail. There are two primary appraisals: A stressor would likely be appraised as a **threat** if one anticipates that it could lead to some kind of harm, loss, or other negative consequence; conversely, a stressor would likely be appraised as a **challenge** if one believes that it carries the potential for gain or personal growth. For example, an employee who is promoted to a leadership position would likely perceive the promotion as a much greater threat if she believed the promotion would lead to excessive work demands than if she viewed it as an opportunity to gain new skills and grow professionally. Similarly, a college student on the cusp of graduation may face the change as a threat due to a loss of financial support, or as a challenge in that it is an opportunity for independence and growth.

The perception of a threat triggers a **secondary appraisal**: judgment of the options available to cope with a stressor, as well as perceptions of how effective such options will be (Lyon, 2012). This secondary appraisal can either be **low threat** or **high threat**. An individual's belief in his ability to complete a task is important (Bandura, 1994). A threat tends to be viewed as less catastrophic if one believes something can be done about it (Lazarus & Folkman, 1984).

Imagine that two middle-aged women, Robin and Maria, perform breast self-examinations one morning and each woman notices a lump on the lower region of her left breast. Although both women view the breast lump as a potential threat (primary appraisal), their secondary appraisals differ considerably. In considering the breast lump, some of the thoughts racing through Robin's mind are, "Oh, no, I could have breast cancer! What if the cancer has spread to the rest of my body and I cannot recover? What if I have to go through chemotherapy? I've heard that experience is awful! What if I have to quit my job? My husband and I won't have enough money to pay the mortgage. Oh, this is just horrible...I can't deal with it!" On the other hand, Maria thinks, "Hmm, this may not be good. Although most times these things turn out to be benign, I need to have it checked out. If it turns out to be breast cancer, there are doctors who can take care of it because the medical technology today is quite advanced. I'll have a lot of different options, and I'll be just fine." Clearly, Robin and Maria have different outlooks on what might turn out to be a very serious situation: Robin seems to think that little could be done about it, whereas Maria believes that, worst case scenario, a number of options that are likely to be effective would be available. As such, Robin would clearly experience greater stress than would Maria.

~ As soon as you finish reading, flip this paper over, and without looking back at this (do NOT go back and look now!), draw a model of the process. ~

## What is Stress?

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Imagine two employees who have just been promoted to leadership positions in two Fortune 500 companies. John knows that this new promotion will likely lead to excessive work demands that will make it more difficult than it already is to be home by 5pm and to participate in his kids' many activities. He dreads the new responsibilities that come with this position. Ryan, on the other hand, sees that this new promotion will require him to learn new skills but that these new skills will help him grow professional and will make him more competitive for future promotions that he greatly desires. He is looking forward to this new position. John has decided that this stressor is a **threat** because he anticipates that it could lead to some kind of harm, loss, or other negative consequence. Conversely, Ryan has decided that this stressor is a **challenge** because he believes that it carries the potential for gain or personal growth. Upon first hearing this news, both John and Ryan have made a **primary appraisal** of the stressor. Thus, a primary appraisal, the way in which a stressor is initially perceived can be one of two forms: a threat or a challenge.

Now let's imagine two middle-aged women, Robin and Maria. They both perform breast self-examinations one morning and each woman notices a lump on the lower region of her left breast. Both women view the breast lump as a potential threat (primary appraisal). In considering the breast lump, some of the thoughts racing through Robin's mind are, "Oh, no, I could have breast cancer! What if the cancer has spread to the rest of my body and I cannot recover? What if I have to go through chemotherapy? I've heard that experience is awful! What if I have to quit my job? My husband and I won't have enough money to pay the mortgage. Oh, this is just horrible...I can't deal with it!" On the other hand, Maria thinks, "Hmm, this may not be good. Although most times these things turn out to be benign, I need to have it checked out. If it turns out to be breast cancer, there are doctors who can take care of it because the medical technology today is quite advanced. I'll have a lot of different options, and I'll be just fine." Clearly, Robin and Maria have different outlooks on what might turn out to be a very serious situation: Robin seems to think that little could be done about it, whereas Maria believes that, worst case scenario, a number of options that are likely to be effective would be available. In Robin's mind, little can be done about the stressor and she perceives it as **high threat**. In Maria's mind, there are many options available and she perceives it as **low threat**. This is called a **secondary appraisal**: judgment of the options available to cope with a stressor, as well as perceptions of how effective such options will be (Lyon, 2012). An individual's belief in his ability to complete a task is important (Bandura, 1994). A threat tends to be viewed as less catastrophic if one believes something can be done about it (Lazarus & Folkman, 1984). As such, Robin would clearly experience greater stress than would Maria.

John, Ryan, Robin, and Maria are all experiencing **stress**, a process whereby an individual perceives and responds to events that he/she appraises as overwhelming or threatening to his/her well-being (Lazarus & Folkman, 1984). The cause of stress is a demanding or threatening event, what we often refer to as a **stressor**. Our level of stress will depend on how we appraise – that is, judge – demanding or threatening events.

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