Circuits Virtual Community of Practice

Ken Connor
Rensselaer Polytechnic Institute
connor@rpi.edu

Lisa Huettel
Duke University
lisa.huettel@duke.edu

Session 4: What Factors Motivate Students to Learn?
April 11th, 2013

Agenda

- Welcome and Learning Objectives ~ 5 mins
- Activity: Strategies for Building Positive Expectations ~ 30 mins
- Activity: Strategies for Establishing Value ~ 30 mins
- Wrap-up & Plans for Session 5 ~ 5 mins

Session 4: Student Motivation

In preparation for Session 4 (April 11th):

– Read and be prepared to discuss the Svinicki Idea Paper #41 on student motivation (on portal)

– Read and be prepared to discuss Chapter 3 of HLW: *What factors motivate students to learn?*

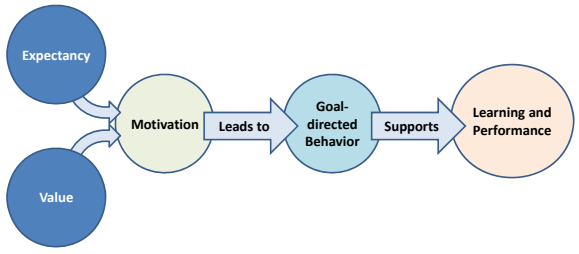
Session 4: Learning Objectives

- Identify strategies for building positive *expectancies*
- Identify strategies for establishing *value*
- Describe concrete applications of these strategies for increasing student motivation in a circuits course.

Motivation Defined

- Personal investment in reaching some goal.
- Motivation requires two factors:
  – The goal must be recognized as carrying some form of **value**. That is, the individual must desire to obtain the goal – and that value must outweigh the effort (or cost, etc.) of obtaining it.
  – The individual must have an **expectation** of achieving the goal – or that their efforts toward that goal will be themselves of value, even if the goal isn't reached.

Value and Expectancy support Motivation



Adapted from *How Learning Works* (Figure 3.1), Ambrose *et al.*

Types of **Expectancy**

- **Outcome** expectancy: My actions will *cause* a valuable outcome
  - If the outcome is predetermined, motivation to take action is diminished
- **Efficacy** expectancy: I am *capable* of executing the actions needed to reach that outcome
  - If an individual sees themselves as incompetent or constrained by external limitations/barriers, then motivation is diminished

Strategies to help build positive **expectancies***

1) **Align objectives, assessments, and instruction**
2) **Identify an appropriate level of challenge, 3) create assignments at the appropriate level, and 4) provide early success opportunities**
5) **Articulate your expectations, 6) provide rubrics and 7) targeted feedback – and 8) be fair**
9) **Help students explain success and failure in terms of things they control – and 10) give them study strategies to provide control**

* From *How Learning Works (Chapter 3)*, Ambrose *et al.*

Activity: Expectancies

Each group should imagine that they are a mentoring committee for a brand new faculty member in their department. That faculty member has just been assigned to teach Circuits.

Your committee's task is to give that new faculty member advice about good practices – and warn them of typical mistakes that new faculty make. From the strategies for building positive expectancies on the previous slide, **identify one strategy that can often trip up new faculty members** (i.e., they don't necessarily consider it when creating their course). In your report:

- Describe what happens when instructors fail to implement that strategy.
- Provide a recommendation for how a new instructor could effectively implement that strategy in their circuits course.

Activity: Expectancies (10 minutes)

Identify one strategy that can often trip up new faculty members:

- Describe what happens when instructors fail to implement that strategy.
- Provide a recommendation for how a new instructor could effectively implement that strategy in their circuits course.

1) **Align objectives, assessments, and instruction**
2) **Identify an appropriate level of challenge,**
3) **Create assignments at the appropriate level**
4) **Provide early success opportunities**
5) **Articulate your expectations,**
6) **Provide rubrics**
7) **Provide targeted feedback**
8) **Be fair**
9) **Help students explain success and failure in terms of things they control**
10) **Give them study strategies to provide control**

Types of **Value**

- **Attainment** value: Mastery, sense of accomplishment
- **Intrinsic** value: Task itself is rewarding
- **Instrumental** (or **extrinsic**) value: Performance of the task is not itself rewarding, but leads to other rewards

Strategies to help establish **value***

1) **Connect the material to student interests**
2) **Provide authentic real-world tasks**
3) **Show relevance to students' academic interest**
4) **Show relevance to students' professional goals**
5) **Identify and reward what *you* value**
6) **Show your own passion and enthusiasm**

* From *How Learning Works* (Chapter 3), Ambrose *et al.*

Activity: Value

Everyone was pre-assigned two of the value strategies (HLW, Ch. 3) and asked to think of a concrete example of a way in which they implement one (or both) of the strategies.

In your breakout group,

- Have each group member briefly describe his/her implementation example
- As a group, pick **one** of the examples (which will be presented in the report out session) and discuss:
  - Why does that implementation/strategy work?
  - When (or for whom) would that implementation/strategy fail?

Session 5: Student Teams

In preparation for Session 5 (April 18th):

- Complete Team-Maker survey
- Read and be prepared to discuss:
  1. "Turning Student Groups into Effective Teams", Oakley *et al., if your last name starts with A-K*
  2. "Student Teams in the Engineering Classroom and Beyond", Finelli *et al., , if your last name starts with L-M*

You are, of course, welcome to read both articles.