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White Board

Become An Effective Teacher & Save Your Valuable Teaching Time and Energy

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Evidence of Evidence-Based Teaching

EVIDENCE-BASED teaching seems like the new buzzword in higher education. The phrase appears to mean that we've identified and should be using those instructional practices shown empirically to enhance learning. Sounds pretty straightforward, but there are lots of questions that haven't yet been addressed, such as: How much evidence does there need to be to justify a particular strategy, action, or approach? Is one study enough? What about when the evidence is mixed—in some studies the results of a practice are positive and in others they aren't? In research conducted in classrooms, instructional strategies aren't used in isolation; they are done in combination with other things. Does that grouping influence how individual strategies function?

Questions like these should prompt more cautious use of the descriptor, but they don't excuse us from considering the evidence and how it might be incorporated into the teaching-learning activities of our courses. I was impressed by a recent article in which three biologists describe how they created a classroom observation tool that identifies specific, evidence-based behaviors and practices. "PORTAAL [Practical Observation Rubric to Assess Active Learning] is one effort to create a tool that translates research-based best practices into explicit and approachable practices." (p. 13)

The tool was designed to assess taped teaching samples, and that's how the faculty research team used it (with interesting results, highlighted in the December issue of The Teaching Professor). I think the team's effort to take research findings and translate them into concrete actions is especially commendable. It's a challenging task given the diversity of research evidence, even in a single area. For example, there are multiple studies that attempt to identify what gets students offering better (more thoughtful, reasoned, higher order) answers. Some of the research has been done with students working in groups, some of it during whole class discussions, and lots in the context of clicker use. To use those findings, a specific yet broadly applicable action must be extracted. In this case, it's pretty easy: students need time to think before they talk. That is straightforward; but imagine a diverse collection of studies exploring the role of feedback in skill development.

Here's a sampling of actions from the 21 that appear on the PORTAAL instrument. The first item of each bullet identifies the research finding and the second the specific behaviors, actions, or practices the researchers propose. The article (in an open access journal) lists the studies (in most cases multiple) that support each action. I don't have space to list all those references in this post, so if you want to read the evidence, I encourage you to consult the journal article.

- **Frequent practice:** Observe the number of minutes students have the opportunity to talk about content during class
- **Distributed practice:** Observe how often the instructor reminds students to use prior knowledge
- **Immediate feedback:** Observe how often the instructor hears student logic (reasons for a particular answer) and responds
- **Time to think before discussing answers:** Observe how often students are given time to think before having to talk in groups or in front of the class
- **Student confirmation:** Observe how often the instructor delivers explicit positive feedback and/or encouragement
- **Error framing:** Observe how often the instructor reminds students that errors are part of learning and not something to be feared

The tool doesn't offer a comprehensive listing of evidence-based practices. And, as the researchers note, their goal was identifying concrete actions that can be observed. "Some elements may not be perfectly captured by these types of measures." Take student confirmation, for example. Teachers provide confirmation to students with a variety of nonverbal actions usually done in conjunction with one another, like a smile or nod. You won't find items like these on PORTAAL, but it starts the work that needs to be done if the research on learning and achievement is to move from research venues to instructional practice. "Following the suggestions outlined in this tool does not guarantee greater student learning, but the tool is a solid, research-supported first step." (p. 13) Time can be spent standing around waving the evidence-based teaching banner, but it's more profitably used like this, delving into the details and considering how they might apply to our teaching.

Reference: Eddy, S. L., Converse, M., and Wenderoth, M. P., (2015). PORTAAL: A classroom observation tool assessing evidence-based teaching practices for active learning in large science, technology, engineering, and mathematics classes. *Cell Biology Education-Life Sciences Education*, 14 (Summer), 1-16. Access full article: http://www.lifescied.org/content/14/2/ar23.full

Maryellen Weimer, PhD; Faculty Focus; Evidence of Evidence-Based Teaching; December 2, 2015; [http://www.facultyfocus.com/articles/teaching-professor-blog/evidence-of-evidence-based-teaching/]; December 7, 2015.

Classes End - December 4
Exams - December 7-11
Commencement - December 12
All Grades Due - December 13
Holiday Break - December 24-31

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First Monday of the Month

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Lander Student "Management" Preference Using the X-Y Theory Survey

Chad Kinsella, PhD

AS FACULTY MEMBERS, perhaps one of the biggest questions we often ask ourselves and colleagues is about our students' capacity to complete work and be responsible adults. Within the studies of management, and especially within the literature of public administration and public management, similar questions have and continue to be asked about employees. One theory used to understand employee motivation and how to manage is McGregor's Theory X and Y.

McGregor, an organizational humanist, offered competing management theories about human nature. Theory X assumes people do not like work, are not responsible, and are only motivated by economic factors, threats, and punishment. In such a situation, employees requires intense supervision. Theory Y, on the other hand, assumes employees enjoy work and gladly accept responsibility. Under this theory, the assumption is that workers are self-directed, motivated, and require little, if any, supervision. McGregor compared the difference between Theories X and Y as comparable to "the difference between treating people like children and treating them as mature adults" (McGregor 1960).

While discussing different theories of organizational management in POLS 317: Introduction to Public Administration and, in this case, Theories X and Y, students were encouraged to consider the type of "management" they would like to have. To accomplish this, a survey that was developed from a preexisting instrument in the textbook (Holzer and Schwester 2011) used to test employee preference for Theory X or Y. The survey was augmented to fit college students and administered to the class. Overall, the class was made up of juniors and seniors and was composed of sociology, political science, and education majors. The survey is shown below. Original survey language is in parentheses, the average score is listed (between 1 and 5), and the average of all scores is shown at the bottom.

Please score the following statements:
5=always, 4=mostly, 3=often, 2= occasionally, 1=rarely, 0=never

1. I like to be involved and consulted by my (boss) professors about how I can best do my (job) work. **3.38**
2. I want learn skills outside of my (immediate area of responsibility) major. **4.03**
3. I like to work without interference from my (boss) professor, but be able to ask for help if I need it. **3.76**
4. I work best and most productively without pressure from my (boss) professor or the threat of (losing my job) failing a class. **3.86**
5. When I leave the (company) university, I would like an exit interview to give my views on the organization. **1.62**
6. I like to be incentivized and praised for working hard and well. **3.83**
7. I want to increase my responsibility. **3.14**
8. I want to (be trained) learn to do new things. **4.66**
9. I prefer to be friendly with my (boss and management) professors. **4.34**
10. I want to be able to discuss my concerns, worries, or suggestions with my (boss) professor, (or another in management) department chair, or dean. **3.66**
11. I like to know what my (company's) academic department's aims and targets are. **3.24**
12. I like to be told how my (company) department is performing on regular basis. **2.66**
13. I like to be given opportunities to solve problems connected with my (work) studies. **3.52**
14. I like to be told by my (boss) professor what is happening in the (organization) department. **2.62**
15. I like to have regular meetings with my (boss) professor to discuss how I can improve and develop. **2.72**

Average Score of all Surveys: **51.03**
60 – 75 = strongly prefers Y-theory management
45 – 59 = generally prefers Y-theory management
16 – 44 = generally prefers X-theory management
0 – 15 = strongly prefers X-theory management

Overall, the scores indicate that the students, although not a representative sample of the Lander University student population, prefers Y-theory management. The findings likely are indicative of what many of us know about upper level students in our classes: that they show signs of being able to work independently and demonstrate responsibility but have not yet completely crossed the threshold of total independence. More interestingly are the questions in which students scored highest and lowest. Students scored high in areas with question regarding working with professors and wanting to learn and lowest with questions wanting to know more about the department or working with administration beyond their professor. As mentioned above, the class is not representative sample of Lander students, however it does indicate that our upper level students are generally interested in learning, broadening their horizons, and working with professors. Even though the student did not yet demonstrate a complete preference for Y-theory management, they are close and we should keep this in mind when working with upper level students.

References

Holzer, M. and Schweste, R. 2011. *Public Administration: An Introduction.* New York: M.E. Sharpe.

McGregor, D. 1960. *The Human Side of Enterprise.* New York: McGraw-Hill.