



Teaching for Learning Network

Designing a Domain Specific Self-efficacy Survey

As the overall aims of any academic course should require that students complete their degree with a high level of confidence in a range of academic abilities and transferable skills, an important aspect of the Teaching for Learning Network (TfLN) is assessment of the impact of evidence-based development of small-group teaching practices on the self efficacy beliefs of students.

Self -efficacy Defined

Self-efficacy refers to beliefs about one's own capability to learn or perform behaviours at designated levels (Bandura, 1986, 1997). The theory of self-efficacy was first published by Bandura in 1977. Since then self-efficacy has been researched in many fields and found to be related to clinical problems such as phobias, addiction, depression, social skills, assertiveness; to stress in a variety of contexts; to smoking behavior; to pain control; to health; and to athletic performance (Pajares, 1997). Self-efficacy beliefs have also received increasing attention in education. Much research shows that self-efficacy influences academic motivation, learning, and achievement (Pajares, 1996; Schunk, 1995). Therefore as part of the Teaching for Learning Network, an online self-efficacy survey has been designed to emulate those used by William Lucas at MIT.

Design of the Survey

The survey is best administered online using Ostrakon (see 'using Ostrakon for self-efficacy survey' document), at <http://survey.caret.cam.ac.uk/feedback>.

Background Information

At the beginning of the survey you may wish to ask a couple of background questions such as 'What is your sex/gender', in order for you to get some parameters for analysis of different student attitudes later on. In the case of the Department of Plant Sciences we were also interested to know which students had chosen to specialize in Plant Sciences in their final year.



General to specific questioning

Self-efficacy beliefs lie on several different levels, varying in psychological character from general self-efficacy which appears to be interchangeable with self-confidence in one's competence broadly defined; to domain self-confidence to perform the tasks involved in pursuing a career; and to more narrowly defined domain confidence to perform specific tasks (Lucas, 2005). With this in mind the TFLN self-efficacy survey should be designed to include a range of self-efficacy questions about general academic self confidence and also domain specific questioning.

General questions

Using the Plant Sciences self efficacy survey as a template in Ostrakon you can alter general self efficacy questions to make them correspond to the course aims for your department. In our case the questions are tailored to be generally scientific.

Specific skills in a scientific arena

These questions have been designed to be applicable in a scientific arena (but could easily be redesigned for humanities) and complementary to the P-V supervision questionnaire by including items relating to:

- Analytical skills
- Team work skills
- Oral communication skills
- Problem solving skills
- Written communication skills

Domain specific questions

The domain specific questions for each lecture topic should be substituted for your own. Some suggestions for choosing these questions are:

Variation in perceived difficulty of questions

The domain specific questions should be chosen to range from theories that are generally perceived (by teachers) to be hard for students, to those that are normally easily integrated. If you have identified potential threshold concepts in the course it would be interesting to include questions associated with these topics.

“Halo effect”

One question should be chosen to test students for the “halo effect” whilst giving survey answers. This question could be based on a topic that is not covered as part of the course.

Submission of a confident score for this question will indicate lack of thought from students or, a disinclination to admit their failings.

References

- Bandura, A. (1977) Self-efficacy: Toward a Unifying Theory of Behavioural Change. *Psychological Review*, 84, 191-215
- Bandura, A. (1986) *Social Foundations of Thought and Action: A Social Cognitive Theory* (Englewood Cliffs, NJ: Prentice-Hall)
- Bandura, A. (1997) *Self-efficacy: The Exercise of Control* (New York: Freeman)
- Lucas, W. and Cooper, S. (2005) *Measuring Entrepreneurial Self-Efficacy*: Paper presented at the EDGE conference 'Bridging the Gap: Entrepreneurship in Theory and Practice' Singapore.
- Pajares, F. (1996) Self-efficacy Beliefs in Academic Settings. *Review of Educational Research*, 66, 543-578
- Pajares F. (1997) Current Directions in Self-efficacy Research. In: M. Maehr & P. R. Pintrich (Eds.). *Advances in Motivation and Achievement: Volume 10* (Greenwich, CT: JAI Press); 1-49
- Schunk, D. H. (1994) Self-regulation of Self-efficacy and Attributions in Academic Settings. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulation of Learning and Performance: Issues and Educational Implications* (Hillsdale, NJ: Erlbaum); 75-99.