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**Abstract**

In an academic world driven by student ratings and publication counts, faculty members are discouraged from exploring new pedagogical ideas because exploration takes time and often goes unrecognized. The contrast with research is striking: everyone is expected to explore and innovate in research, whereas very few make exploration in teaching their norm. This paper presents a case study illustrating a program, the Peer-Reviewed Exploration in Teaching (PRET) program, designed to encourage and recognize faculty when they implement teaching innovations. The program provides feedback during all stages of a teaching innovation, including outside-classroom activities, and incorporates a rigorous peer review process so that successive such PRETs can accumulate into a record for tenure and promotion. The paper describes the program's rationale, initial implementation, and lessons learned. Perhaps one of the most interesting lessons is that faculty explorations often go beyond a standard inventory of active learning techniques when they are encouraged and supported to explore.

**Keywords**

Teaching innovations, recognizing teaching excellence

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Peer-Reviewed Exploration in Teaching: A Program for Stimulating and Recognizing Innovations in Teaching

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In an academic world driven by student ratings and publication counts, faculty members are discouraged from exploring new pedagogical ideas because exploration takes time and often goes unrecognized. The contrast with research is striking: everyone is expected to explore and innovate in research, whereas very few make exploration in teaching their norm. This paper presents a case study illustrating a program, the Peer-Reviewed Exploration in Teaching (PRET) program, designed to encourage and recognize faculty when they implement teaching innovations. The program provides feedback during all stages of a teaching innovation, including outside-classroom activities, and incorporates a rigorous peer review process so that successive such PRETs can accumulate into a record for tenure and promotion. The paper describes the program’s rationale, initial implementation, and lessons learned. Perhaps one of the most interesting lessons is that faculty explorations often go beyond a standard inventory of active learning techniques when they are encouraged and supported to explore.

INTRODUCTION

This paper presents the Peer-Reviewed Exploration in Teaching (PRET) Program, a model for a university-wide program appropriate for all disciplines that is designed to: 1) stimulate teaching innovations, 2) support faculty during the innovation process, 3) recognize faculty efforts, and 4) create an environment for teaching explorations that last beyond the program completion.

Why Innovate?

Let us first address a more basic question: why bother to innovate in teaching? Isn’t it be enough to let a few innovate, prove that their techniques work, and offer teaching workshops to the rest of us? We argue that there are at least a few reasons why innovation, or at least curiosity-driven exploration, should be more common. The first relates to the complexity of learning and fostering a collective effort in academia that is equal to the task: if more faculty are engaged in systematically exploring what works and what doesn’t, we are likely to improve student learning outcomes. Consider, for example, that there are 9,400 physics faculty (White, Ivie, Ephraim, 2012) in the nation, most of whom are engaged in some scholarly activity in physics to understand the complexities of the physical world. Why aren’t as many faculty focused on addressing the complexities of learning? If student learning is as complex as is commonly believed, it invites the participation of more faculty in exploring and understanding how to make it work well. A second reason arises from the need to adapt techniques locally: each one of us has students from different backgrounds, who are in turn taking local flavors of courses. Thus, for example, one does not effectively use clickers in exactly the same way for a mid-morning class of residential undergraduates in chemistry, as for an evening class on health policy for working professionals. Such local adaptation takes time to refine, and constitutes a protracted exploration over several course offerings that needs nurturing and administrative support. Others have written about this need as well. For instance, Wood (2009) explains (using biology as an example) why innovation in biology teaching is needed: 1) for the U.S. to remain competitive in the global economy; 2) to exploit new discoveries in educational psychology, cognitive science, and neurobiology that have the potential to improve student learning; 3) to build on and adapt research from Discipline-Based Education Research (DBER) groups; and 4) to produce better biology majors. Finally, a culture of constant experimentation strengthens our collective agility in academia to respond to a rapidly changing landscape in higher education.

Relationship to Tenure and Promotion

What is also clear, in addition to the need to stimulate pedagogical exploration, is that standard approaches to evaluating teaching for tenure and promotion are limited in what they evaluate, often relying just on student ratings or isolated classroom visits. Student evaluations of teaching can provide valuable feedback about the instructor’s teaching effectiveness (Svinicki & McKeachie, 2010), but researchers have mixed findings about them (Boring, Ottoboni, Stark 2016; MacNell, Driscoll, Hunt, 2015). This problem has been recently recognized as challenging (Stark & Freishstat, 2014) despite the increasing emphasis on helping faculty develop instructional competence since the 1980s (Eble & McKeachie 1985; Seldin, 1990). Elton (1998) aimed to define the concept of “teaching excellence” and discovered that it is a complex concept and requires defining excellence at individual, departmental, and institutional levels. At the same time, a full-fledged statistically rigorous learning outcome study may not be practical for everyone, since not everyone has multiple sections for a careful control-and-experiment procedure, nor are there statistically reliable tests of learning in every subtopic of every field. Furthermore, some types of pedagogical experimentation will involve only a part of course, or another goal such as student engagement. Also, it is important to encourage adaptation of technique rather than have the pressure to solely create something new out of whole cloth; for example, a biology professor in our program experimented with case studies in her introductory biology class, a relatively new idea in biology but quite well-established in business schools.

A comparison between teaching and research raises yet another issue. In research, faculty members are accustomed to publishing incremental work that accumulates over time into a strong record of scholarly work. In alignment with this tradition, the
The PEER-REVIEWED EXPLORATION IN TEACHING (PRET) PROGRAM

Our Peer-Reviewed Exploration in Teaching (PRET) program is a mechanism that, roughly equivalent in effort to producing a research article, allows faculty to demonstrate a peer-reviewed contribution to teaching with real impact in their classroom. In designing the PRET program, we sought to respect several constraints. Ideally, we wanted a program that:

- lasts no longer than a semester but includes innovations that can be continued;
- encourages collaboration and works for a cohort of faculty from across the disciplines;
- features multiple forms of rigorous intramural peer-review;
- is grounded in the literature on pedagogy, and the scholarship of teaching and learning;
- and, of course, stimulates exploration beyond the usual established techniques in active learning.

Our program was instated in Spring 2012 and is informed by innovative trends in education (Beichner et al., 2007; DeHaan, 2005; Holdren & Lander, 2012) and encourages both curiosity-driven and problem-based innovative trends in education (Beichner et al., 2007; DeHaan, 2005; Beichner et al., 2018). Our PRET program, we sought to respect several constraints. Ideally, we wanted a program that:

1. writes and revises, based on anonymous peer-review, a proposal that describes specific learning-objectives and a substantial classroom intervention that is grounded in the literature on pedagogy and the scholarship of teaching and learning;
2. invites peers to observe and review the intervention as it unfolds in the classroom;
3. allows peers to interview students (without the instructor present) to assess and report on impact on their learning;
4. reflects on a review report written by peers;
5. submits the original proposal, review report, and reflection as the final package for additional blind peer review.

Typically, the visiting peers are from the cohort of faculty under whom the initiative was proposed. However, for the peer review in step 5 are from reviewers selected outside the cohort who have either been past participants in the program or have distinguished themselves in teaching at the university. For example, during the peer review, the visiting peers were from outside the cohort and were selected to represent their countries, trading, addressing global warming, fighting terrorists, and even each other.

To avoid merely gimmicky ideas, the PRET program requires applicants to follow a proposal template designed to force PRET participants to connect learning outcomes with their proposed interventions. The PRET proposal template is designed to encourage PRET participants to:

1. use an explicit and compelling argument for the need for the intervention;
2. state why the intervention is unique or different from other similar interventions;
3. provide evidence that the intervention is feasible and that it is being used extensively.

The PRET proposal template is designed to encourage PRET participants to:

1. provide evidence that the intervention is feasible and that it is being used extensively.
2. propose that the intervention is feasible and that it is being used extensively.
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after the completion of the program. The written materials, such focused faculty. There were no changes in the PRET protocol from GW faculty listservs. The instructors who participated in the PRET program self-selected themselves and they ranged from beginners to experienced instructors. The majority of them were teaching-focused faculty. There were no changes in the PRET protocol from one cohort to the other. For the two cohorts we mentioned, we examined two types of data: (1) the products from the PRET program including proposals, comments on proposals, reviews from the peers that visited the classroom, reflections and final reviews and (2) an anonymous survey administered to participants after the completion of the program. The written materials, such as proposals and reviews, were examined by the two authors independently and also coded according to Amburgey’s method. Then, we reviewed the more complex interventions to analyze their Bloom level (Anderson et al., 2001). The raw survey data was similarly analyzed.

Given our relatively small sample size, we questioned if a survey was an appropriate tool for collecting feedback, but after analyzing alternative methods like focus groups with faculty or interviews, we decided that the anonymous survey would allow faculty to express their thoughts more freely. The survey was administered online and faculty were invited to participate. No rewards of any kind were offered to the participating faculty.

The lessons we learned can be broadly described through the following questions: • Does PRET work for all disciplines? The faculty who undertook this program were spread across a variety of disciplines including physics, biology, chemistry, nursing, writing, and political science and they all seemed comfortable innovating according to the PRET protocol. Additionally, the authors believe that any situation in which a faculty member wanted to participate in PRET and found it inappropriate for his or her discipline. Thus, we have reasons to believe that PRET works for any discipline. • Is PRET suited for all faculty? The courses included freshman courses (9 cases), required courses for the major (13 instances) as well as graduate courses (2 courses). The courses were listed in five categories. All of these courses were in-classroom courses. Therefore, we think that PRET seems to be suitable for any type of in-class courses, while its suitability for online courses would have to be further explored.

• Does PRET time consuming? Faculty spend between 30-50 hours over a semester to go through all the PRET steps. • Does being an active role in a selected faculty, study estimating the time they were PA. We have been able to map all the learning activities implemented onto the items listed by Van Amburgey’s instrument except some found in 8 (out of 14 courses) which were outside the list. This suggests that many faculty were indeed spurred into trying something altogether new. The interventions proposed by our faculty were simple (combinations of elements in Amburgey’s list, or combinations of entirely new activities), with multiple activities spread across various levels of thinking complexity. Figure 1 below illustrates the distribution, which shows that most activities were of medium complexity or higher.

• Does the Administration recognize PRET? Besides the reasons mentioned at the previous point, it is worth mentioning that the program was recognized by the administration, including PRET-related events and in sponsoring PRET faculty to disseminate their PRET experiences at GWU’s Teaching Day, an annual event celebrating teaching. Additionally, PRET has its own website administered and supported by the administration. • Once the program is complete, does the sustained change in the classroom endure to justify the return on the resources invested in it? This goal of recruiting more faculty, chairs and administrators in support. The PRET program was designed to offset these obstacles. • Faculty innovation can sometimes bring about weaker student ratings (Michael, 2007). This is one reason why the program explicitly eschews the standard end-of-semester ratings in favor of peer reviews and student focus groups run by faculty.

How could such a program be adopted at other universities? What is involved and what are the costs? We propose that the university’s teaching center together with strong support from the administration launch a pilot cohort as we did Intrepid. early-adopter faculty would need to be recruited for the first cohort, after which they would serve as evangelists. Clearly strong support from the administration is necessary, both in messaging and the willingness to recognize those who complete the program. The only real cost is the time nearly needed by the program’s administrator, possibly a faculty member granted some release time.

CONCLUSION

In this paper, we made a case for spreading the wealth of innovation in teaching. Innovating and exploration is fun, stimulating and very satisfying, but is challenging to achieve in a teaching climate dominated by student ratings and weak recognition by colleagues and administrators. The PRET program was designed to offset these barriers to innovation by providing a structured process to encourage and support faculty in innovation, while providing rigorous peer review and administrative recognition. In addition, the program allows faculty to accumulate a number of these, each the rough analogue of a research article, into a record of sustained contributions to teaching. The program is ongoing at George Washington University, with the goal of recruiting more faculty, chairs and administrators in support.

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