

## **2006-1980: PEER REVIEW OF TEACHING: A MULTI-FACETED APPROACH TO IMPROVING STUDENT LEARNING**

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## Peer Review of Teaching: A Multi-Faceted Approach to Improving Student Learning

### Abstract

Many Universities use the student evaluation as the primary tool for assessment of teaching. Peer review of teaching is also an important method of assessment, both formative and summative. The aspects of successful peer review of teaching are presented and several methods of peer review are described. Significant issues to consider when using peer review for teaching of civil engineering courses are given. The different methods can be employed as necessary to make various assessments of teaching effectiveness, and most importantly, to increase student learning.

### Introduction

There has been much debate on the degree to which the academy values teaching as compared to research by faculty members. One way to determine the value of an activity is to look at how the activity is evaluated. The *sine qua non* in the evaluation of scholarly research is peer review. As scholars, we present our research findings to our peers at conferences and publish in peer-reviewed journals. Peer review is the way we evaluate the quality of our research.

Consider how teaching is evaluated. Often, student evaluations are the only measure taken to assess the quality of teaching. While student evaluations are an important part of teaching assessment,<sup>1,2</sup> there are certain aspects of teaching that should be evaluated by peers. As Hutchings states (emphasis in original):

If teaching were to be seen as scholarly, intellectual work, it would not be enough to evaluate teaching simply by looking at student ratings. Teaching, like research, should be peer reviewed. Indeed, *until* teaching is peer reviewed, it will never be truly valued.<sup>3</sup>

Besides the need for peer review as a validating agent of effective teaching, peer review is also essential in the improvement of teaching. In the “booming, buzzing confusion of the classroom” it is hard for the instructor, who is deeply involved in the process, to take it all in. The students are also (hopefully) deeply involved in the learning process. The help of a peer in seeing ourselves teach “from the outside” is imperative when trying to improve teaching.<sup>4</sup>

Peer review of teaching is also important because, frankly, teaching is hard. Instructors soon come to realize that “teaching is a highly complex, situated activity which is learned largely and necessarily by experience.”<sup>5</sup> The help of peers is vital in improving teaching to positively affect student learning.

For many, peer review of teaching means having another faculty member sit in on a lecture period and critique it. However, there is much more to peer review than this one-dimensional view. In fact, using several methods in combination can result in a synergis-

tic whole greater than the individual methods themselves. This paper outlines several methods that have been successfully used in the peer review of teaching.

### **Peer Review Of Teaching: Elements Of Success**

Before discussing the methods used for peer review of teaching, it is important to determine the attributes of a successful peer review program. The three main goals of peer review should be:

1. Intellectual rigor,
2. Appropriateness to the discipline, and
3. Improvement of teaching.<sup>6</sup>

As the last of these goals states, peer review should not just be about evaluating teaching, but should improve student learning. In addition, it is important that peer review be a process that is “owned” by the faculty.<sup>7</sup> As Hutchings states (emphasis in the original), “On most campuses, the evaluation of teaching is something that happens *to* faculty; they are objects, not agents, of the process.”<sup>3</sup>

When choosing methods of peer review, it is important to consider what information is expected from the process. Hart identifies six aspects of teaching (“events”) that should be evaluated by peers:

1. The place where and the time when classes are taught and other physical factors affecting delivery,
2. The procedures used by the teacher in conducting the class,
3. The teacher’s use of language to inform, explain, persuade, and motivate, and the language students use in responding and reacting to the teacher,
4. The roles played by teacher and students as they interact,
5. The relationship of what is occurring in a particular class to other classes, disciplines, and the curriculum in general, and
6. The outcomes of teaching, as reflected in student learning.<sup>8</sup>

The method or methods selected should be tuned to assess the desired aspects to be evaluated. The evaluator should also be selected with the end in mind—it should be someone with expertise in evaluating the desired aspect(s).

Time is also an important consideration. Faculty members are very busy and reluctant to commit to excessively time-consuming projects. Many successful peer review projects require a surprisingly small time commitment. A time commitment on the order of a half hour per week or less is typically feasible—any program requiring significantly more time may be unfeasible.

## **Methods of Peer Review of Teaching**

Having established that peer review of teaching is important and the elements of a successful program, below are discussion on various techniques that can be used.

### **Reciprocal Visits and Observations**

As mentioned above, peer review of teaching is often viewed as being synonymous with classroom observation. Classroom observation is certainly an important part of peer review, but there is more involved in a successful program. A successful classroom visitation program will provide many of the following elements.<sup>3</sup>

- Multiple visits occur throughout the semester.
- Pre-visit meetings are held to discuss expectations and aspects of instruction that should be “watched for.”
- The visitation is discussed afterward.
- Student interviews are conducted to gain further insight into the classroom experience. More information on effective student interviews can be found in the reference by Morehead and Shedd.<sup>9</sup>
- Students are informed of the process and what to expect.
- Observations is based on a systematic teaching model and observers are trained on how to evaluate teaching based on the model.<sup>10</sup> An example of such a model is the Teaching Assessment Worksheet used in the ExCEED Teaching Workshop.<sup>11</sup> Attendees of the ExCEED workshop also receive training in the use of the worksheet. The worksheet is given in the Appendix of this article.
- A good fit is found between the purposes of the observation and the observers. For example, if assessing the content of instruction is important, then someone current in the field should be chosen. Or, if a teaching method is to be assessed, the observer should have expertise in working with and evaluating the method.

An important consideration in using classroom visitation is the lack of anonymity for observers. Because of this, it is difficult to elicit the frank assessment that is needed for a summative evaluation of teaching.<sup>12</sup> In addition, class visitation is typically more effective when used in conjunction with other methods, such as student interviews.

An alternative to student interviews is the “Small Group Instructional Diagnosis.”<sup>13</sup> In this method, the class is broken into small groups of 4-6 students. In their groups, the students discuss and come up with answers for questions such as “What helps you learn in this class?” and “What improvements would you like and how would you suggest they be made?” After the group discussion, the class is brought together and the groups report their answers to a faculty facilitator other than the class instructor. Further discussion ensues to distill the answers to the most important issues, which are then reported to the instructor.

## Teaching Circles

A teaching circle is a small group of faculty that meet together to improve teaching and learning. A successful teaching circle will:

1. Have a clear purpose with goals, expectations, and ground rules,
2. Focus on specifics such as students groups or curriculum (teaching circles that entail “general” discussion of teaching are usually not as effective), and
3. Disseminate results through the publishing of minutes, the creation of a brochure, publication of a scholarly paper, etc.<sup>3</sup>

Teaching circles are often formed that focus on a specialized topic like large classes or first-year students.<sup>14</sup> One teaching circle included students who were able to provide valuable insight.<sup>15</sup> Another used the internet to conduct the meetings online.<sup>16</sup> One catalyst for success mentioned repeatedly in reports on teaching circles: providing refreshments.

## Teaching Portfolios

Teaching portfolios are an effective way to document teaching excellence. A peer review of the portfolio further helps to improve teaching. Some advantages of teaching portfolios as a peer review technique are:

1. They give faculty more control over assessment,
2. They complement student ratings, and
3. They provide a way to share teaching technique with others.<sup>3</sup>

While teaching portfolios have been used for some time, a course portfolio may be more helpful in some situations. Focusing on a specific course helps to get a better grasp on the content offered and leads to improved teaching.

For teaching or course portfolios, there are several guidelines for success:

- The purpose of the portfolio (if it is required) should be clear. That is, faculty members should know what is at stake based on evaluation of the portfolio.
- Faculty should be encouraged to be selective in the material included and avoid including material “just in case.” This will ease the burden on those who evaluate the portfolio and increase the likelihood the evaluators will actually read the portfolio.
- Various kinds of evidence (quantitative and qualitative) should be included from various sources (colleagues, former students, etc.).
- The portfolio should include reflective commentary to indicate to reviewers what to look for.

- The portfolio can be thought of like a research paper complete with “a thesis with relevant evidence.”<sup>3</sup>
- The portfolio should set goals and show how they are achieved.

### **Team Teaching**

Working with a colleague in the teaching of a class is a good way to assess and improve teaching. Team teaching has been raised to new levels with the advent of “coordinated studies.” In coordinated studies, students take a block of classes rather than registering for individual classes. This coordination of classes allows the instructors to better “mesh” the content of the separate courses and improve student learning. The professors of the coordinated classes can meet together to discuss specific students. Such a system involves much planning and institutional support.

### **Collaborative Inquiry**

As Austin and Baldwin state, “The image of the solitary scholar working alone in a library carrel or laboratory is no more than a fond memory or historical artifact.”<sup>17</sup> Just as collaboration has become ubiquitous in scholarly research, it is important for educational goals as well. Collaboration can help to assess whether a desired instructional goal is being met. It is especially important to use collaboration when the desired assessment falls outside the expertise of the instructor. Collaborative inquiry is also desirable to show that teaching methods are effective. One instructor who had seen a dramatic improvement in student performance was told by colleagues that his results were “interesting” but they desired more proof that the students were actually “better than before,” not simply that they liked the new teaching method better.<sup>3</sup> In response he designed a study using collaborative inquiry and found that his new method did indeed appear to improve student performance.

### **Peer Evaluation in Civil Engineering**

Some issues to consider when implementing peer review of teaching in a civil engineering curriculum are:

1. *More rigorous procedures may be required.* The organizer of a teaching circle that included faculty from the mathematics department noted, “Mathematicians are allergic to anything with a touch-feely quality” and so the teaching circle had to be more rigorous in nature.<sup>3</sup> The same would likely be true for engineering professors. Even the name “teaching circle” might seem “touchy-feely” to some; a better name might be “working group.”
2. *Include practicing engineers as peers.* Because civil engineering is a field that is extremely practice oriented, it is important to obtain peer review of teaching content from practicing engineers. The practitioner advisors to the student ASCE chapter might be someone to contact regarding peer review.
3. *Provide discipline specific training on peer review.* For example, the ExCEED Teaching Workshop can provide a framework and training in observational techniques in the peer review of teaching.

## Conclusion

There are many peer review of teaching methods that can be employed depending on the goals of the instructor and the type of feedback that is desired. Different methods have been explained in this paper. For all methods it is important that:

- The evaluation is intellectually rigorous, discipline-appropriate, and improves teaching,
- The correct method is used and the evaluator has the needed expertise,
- The time commitment on the evaluator is reasonable (30 minutes per week or less), and
- Faculty members being evaluated feel that they “own” the process.

## Acknowledgements

Funding for this study was provided under a Scholarship of Teaching and Learning Grant through the Teaching Excellence Center at the University of Wisconsin, Platteville.

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<b>TEACHING ASSESSMENT WORKSHEET</b>
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**INSTRUCTOR:** \_\_\_\_\_ **ASSESSED BY:** \_\_\_\_\_

**LESSON TOPIC:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**STRENGTHS:**

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**AREAS FOR IMPROVEMENT:**

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Appendix: Course Assessment Worksheet from the ExCEED Teaching Workshop

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	Needs Work	Good	Excellent	Remarks
<b>TECHNICAL EXPERTISE</b>				
Command of the Subject Matter				
<b>LESSON ORGANIZATION</b>				
Lesson Objectives				
Organization of Boards & Classroom Activities				
<b>CONDUCT OF THE CLASS</b>				
Enthusiasm, Energy, and Confidence				
Orientation to the Subject Matter				
Clarity of Presentation ( <i>boards, viewgraphs, etc.</i> )				
Clarity & Precision of Explanations				
Voice ( <i>volume, speed, variation</i> )				
Questioning & Answering Questions				
Contact with Students				
Visual Aids and Demonstrations				
Time Management				
Appropriate Use of Textbook				
<b>THE CLASSROOM ENVIRONMENT</b>				
Classroom Appearance				
<b>OVERALL ASSESSMENT:</b>				
Are the students who attended this class adequately prepared to accomplish the Lesson Objectives?				<input type="checkbox"/> No <input type="checkbox"/> Not sure <input type="checkbox"/> Yes

**Specific areas on which to focus during your next class:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_