

2006-808: A SPECIFIC INSTRUCTOR EVALUATION (SPIE)

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A Specific Instructor Evaluation

Abstract

The purpose of this paper is to explain why a multiple page Specific Instructor Evaluation form (SPIE FORM) was developed and how it was used. The intent of developing a SPIE FORM was threefold. The primary purpose was to gather feedback from students in order to improve both the class and the instructor's teaching. The secondary intent was to provide students with a better means of having their say at the end of the semester about both the class and the instructor. The third purpose was to provide an additional evaluation of the instructor by the students as an aspect of a multiple measure of assessment for a future promotion and tenure case. The SPIE FORM poses questions that students respond to in multiple manners including yes & no responses, five point Likert scale ratings, and short written responses. Most often both the yes & no questions and the five point Likert scale questions are followed by the opportunity for the students to write more to explain their response. The SPIE FORM forms are much more completely filled out compared to standard evaluation forms. Furthermore, responses from students on the SPIE FORM forms are more easily interpreted and also sometimes are seemingly contradictory compared to the standard evaluations. The SPIE FORM looks into assessment of the class and instructor in a much more particular fashion and as such is a valuable tool that is more useful than standard evaluation forms.

Introduction

The acronym SPIE has been used to identify this practice while in use by the author and will be used in this paper. There is no connection between this paper and The International Society for Optical Engineering and none is suggested by use of any acronym. The SPIE FORM was created by one faculty member new to the teaching profession. This was done with a particular SPIE FORM for each different class taught. Each evaluation form was specific to each particular class. The SPIE FORM is titled "Invitation to the Final Exam." The standard school evaluation form of 17 questions does not provide adequate assessment mostly due to incomplete responses from students and the difficulty in gaining meaningful insight from them.

The author began a position teaching after over ten years experience in the civil engineering field. The teaching position was in the disciplines of civil engineering technology and construction engineering technology and while previous work experience did include three semesters as a teaching assistant, no formal training in what a professor is supposed to do was a part of the author's background. Work experience in industry is a requirement of the teaching position but no experience in teaching was required in order to be hired. Initial evaluations from students were not positive and were significantly below the department average. Doubts were raised about the validity of these ratings. The question, "it is really not that bad" was pondered. There was significant difficulty in developing action items to improve teaching while reviewing the standard student evaluation forms.

The department promotion and tenure guidelines⁷ require candidates to demonstrate excellence in teaching. Multiple methods of assessment are expected in the promotion and tenure dossier. The SPIE FORM is an additional method of assessment, gathering student evaluation of the class and the instructor. The SPIE FORM is written by the instructor to contain questions written in a manner to elicit student response of specific aspects of class. An example of this is that the author uses colored chalk and washes the chalkboard clean before each class. The SPIE FORM allows students to respond about the value and effectiveness of these actions of the instructor. Student responses are more readily interpreted and can be used to improve instruction since they are formed by the instructor.

Standard Student Evaluation Forms

The School of Engineering, Technology, and Computer Science at Indiana University Purdue University Fort Wayne uses a school-wide student evaluation of instruction format which is referred to as the CAFETERIA forms. There are two parts to this evaluation. The first part is a series of 17 questions which students rate on a scale of one to four and the second part consists of six questions which students respond to with written comments. There is no formal protocol for conducting this evaluation. The importance of these evaluations is stressed by the author prior to leaving the room when the students then complete the forms. Senior faculty members have conducted these evaluations for the author by staying in the room and emphasizing their importance to students. However, student participation on the standard forms did not improve.

Evaluations in the first semesters of teaching did not support a claim of excellence in teaching. Evaluations have improved over time. This is attributed to experience and also to attending the ExCEED Teaching Workshop sponsored by the American Society of Civil Engineering and held at the United States Military Academy at West Point. However, to this date, several evaluations are not completed by students, handed in blank or with little information on them. In a course during the Spring 2004 term, only one student supplied any comment on the written comment portion of the evaluation. It seems that after filling in 12 little circles with a number two pencil just to identify the course number and instructor for the optical scan device, students often have little interest in considering the question and responding appropriately.

Development of SPIE FORM

The SPIE FORM has three main purposes. These three purposes are 1) to gather feedback from the students in order to improve both the course and the instructor's teaching, 2) to provide students with a better means of having their say at the end of the semester about both the course and the instructor and 3) to provide an additional evaluation of the instructor by the students as an aspect of a multiple measure of assessment for the instructor's future promotion and tenure case.

The questions are posed in three manners. Questions are given as Yes or No, circle a rating of one to five on a scale, and provide a written response. Most Yes or No and scale rating questions are followed by a prompt for a written response.

An example of how these questions appear on the actual form given to students is shown in Figure 1. Note that the actual form does allow more space for written comments.

Figure 1
Example of SPIE FORM

CET 283 Spring 2004, Final Exam Invitation Specific Instructor Evaluation of David Devine				
Did the service learning assignment enhance your learning of the subject matter? Yes No How/why not:				
Should a service learning assignment be a part of this class? Yes No How/why not:				
Did the ethics assignment enhance your learning of the subject matter? Yes No How/why not:				
Should an ethics assignment be a part of this class? Yes No How/why not:				
Is it necessary to have open book and open note exams for this class? Yes No Why/why not:				
Writing is important and should be included in assignments made in this class.				
Strongly Disagree		Strongly Agree		
1	2	3	4	5

The questions that appear on the SPIE FORM are specific to the class. Questions are asked in a manner for students to respond to particular aspects of the class. Examples are if students believe that ethics assignments or writing assignments should be given in the class, if in fact an ethics assignment or writing assignment was given. Additionally, the

question would be asked if the ethics assignment or writing assignment enhanced learning, Yes or No and then how/why or why not? Any desired question relating to the class or teaching can be included. A SPIE FORM has been used in nine different classes and in all cases the form has been between two to four pages long. The length has decreased over time to encourage better student participation and because some questioned are deemed no longer necessary.

SPIE FORM Process

The format of conducting the SPIE FORM process is formal and organized. The process is explained to students in class. Importance of student response is stressed. Students are asked to consider the questions and reflect prior to providing a response. Students are told that they are required to complete this evaluation or the Final Exam will not be graded. Then students are each provided with a copy of the form in the final week of classes. This is done at the end of class when students are often anxious to leave. Few students will want to stay and complete the form when they get it. However students will read over some of the questions as they pack their backpack and walk out of the room. This is desired. Students put some thought into their response prior to actually completing the form.

SPIE FORM forms are collected prior to handing out the Final Exam. Forms are put into a large envelope, sealed with tape, and signed over by signature in front of the students. If the department secretary is available, the forms are handed to her for keeping until two weeks after grades are completed. If the secretary is not available, the envelope is provided to her at a later time. This is possible and managed well in just a few minutes with classes as large as 30 students but most classes have had between six and 20 students. There are no teaching assistants in any of these classes. No serious concerns have been raised by students about the process in the nine classes it has been used although a few students have asked questions about what will be done with the forms. About two weeks following the date when grades are due, the SPIE FORM forms are reviewed by the instructor.

A protocol was submitted to the Purdue University, Committee on the Use of Human Research Subjects prior to first using the SPIE FORM in class. This is done to protect the student's privacy, safety, welfare, and rights and also to meet government guidelines². The protocol was deemed "exempt" because it is "conducted in established or commonly accepted educational settings" and it "involves normal educational practices." However there is a stipulation for this exemption that the SPIE FORM has to be a part of class. Thus since the SPIE FORM is a part of the class requirements all students are required to complete it.

Using SPIE FORM

The results of SPIE FORM are quite positive. This is due to the response of the students. Every single student, over 150 students in nine classes over four semesters, has completed the SPIE FORM. Most every student has completed the SPIE FORM and hands it in before taking the final exam although one student retrieved the form from a parked car and another student made a return trip to campus to hand the form in. Most students complete

each question on the form and provide good explanations to the questions, in stark contrast to the CAFETERIA forms which often are not completed at all or with only simple little remarks that have little value.

The data gained from SPIE FORM indicate that many aspects of class are rated positively by students and that particular aspects of class are perceived by students to be effective and to enhance learning. Questions common on several versions of SPIE FORM pertain to class activities that result from attendance at the ExCEED Teaching Workshop (ETW) and implementing this model in class^{3, 5}. This has not only improved student evaluation ratings but also provides evidence of specific actions that are rated positively by students. This supports a claim of excellence in teaching for future promotion and tenure cases.

Results of the SPIE FORM used to quantify aspects of ETW that students can assess are presented in Table 1. Aspects of the SPIE FORM used recently are concerned with how the chalkboard is used in class. It is expected that these aspects of class would be well received by students since ETW is based on conducting class in manners that have proven effective in the past and is supported by research to be effective^{3, 4, 5, 6, 8, 9}.

Table 1
Results of the SPIE FORM

Question	Yes	No
Did you notice when the chalkboard was wiped clean during class?	91%	9%
Was this beneficial to you as a student?	79%	21%
Were you able to read and see the board more easily when the chalkboard was cleaned during class?	98%	2%
Do you encourage the practice of cleaning the board during class?	70%	30%
Did you notice the use of colored chalk during class?	88%	12%
Did the use of colored chalk enhance learning?	79%	21%
Did the images/photos or music in class enhance your learning of the subject matter?	68%	32%

The SPIE FORM also included similar questions that students responded to on a five point Likert scale. Results of these questions are as follows:

It is important for the instructor to clean the chalkboard during class.

Strongly Disagree		Strongly Agree		
1	2	3	4	5
Average		Max	Min	Mode
3.26		5	1	4

I follow information on the board better when colored chalk is used.

Strongly Disagree		Strongly Agree		
1	2	3	4	5
Average		Max	Min	Mode
3.59		5	2	4

These results suggest less enthusiasm from the students for cleaning the board and using colored chalk than the yes and no questions that assess the same aspect of class.

Qualitative aspects of the ETW impact are expressed through written responses associated with the Yes or No questions. In general student responses support that many specific aspects of class are positive, particularly use of colored chalk, cleaning the chalkboard, and using the SPIE FORM. A significant number of students believe there is little value in the standard CAFETERIA forms used in the school. These student responses can be reviewed after course self-assessment, discussions with a mentor, and in annual review or promotion and tenure materials as a multiple measure of assessment.

Remarks by students on more generic standard evaluation forms indicate students evaluate the instructor in a more positive manner than in past semesters. However, the SPIE FORM indicates that specific actions in class are positive to the class environment. This is used as evidence in a multiple measure to support excellence in teaching.

The value and perceptions of the standard evaluations are assessed by questions given on SPIE FORM. The first question related to this topic appears as:

Do you believe the standard evaluation forms are of any value? **Yes No**
Why/why not:

Results from a previous semester are as follows: Yes = 45%, No = 55%. The response rate to this particular question was 89%. This does not include the one student who responded both Yes and No, the one student who wrote "possibly" but did not respond to Yes or No, and one student who drew a circle between the words Yes and No. Only two students did not respond at all.

The why/why not responses explain the above Yes and No responses in greater detail and give support to using a SPIE FORM. The response rate was 80%. These responses are characterized as follows:

- [no response by seven students]
- Seems like professors don't care anymore
- The teachers probably read them. But most won't change according to the eval (sic)
- Not many teachers use them - I believe you do
- Because we don't see any different outcome
- Nobody cares when reading or filling them out.
- does anybody really do anything with them
- Yes, but we should be able to take it home if we want time to completely answer questions (not the bubble sheet form but the explanations).
- I think most students don't write much in them because of the general attitude that they don't matter. No teacher gets evaluated by any of the responses given by the students. No teachers (very few) even care what the students think.
- Nobody pays any attention to them
- because the teachers are able to work on the students comments

- I do not think they do any good. In my opinion teachers do not care enough to listen what their students think
- not sure any changes can be made
- lets the Prof. know how they are doing
- They are too standard. I am so sick of filling them out I don't take time filling them out.
- It evaluates the student's attitude towards the class and the instructor. If students do not have a positive attitude at the beginning of the semester the class may be more difficult for them.
- They're a pain
- I think they only matter by how the student's treat them
- Students give valued information on them
- They are if you care enough about improving.
- Helps teachers
- They ask good questions, but I believe the department does not take them seriously, i.e.: they don't take action
- You tell me.

The subsequent question was "How would you improve the standard evaluation forms?" The response rate to this question was 75%. These responses are characterized as follows:

- [no response by nine students]
- Remove them and let the instructors make their own.
- Not have the same one for 10 years straight
- not sure
- don't know
- I think the evaluations should be based on the class not standard.
- I think they are OK
- I wouldn't
- different questions
- Have teachers value them more
- ask more specific questions
- change the forms
- make them no so generic
- Have all faculty actually value them
- Change the questions every so often – getting both student & faculty input when designing a new one.
- Better questions
- Make professors (sic) superior actually read them
- Make them course specific.
- Make them more suited for each class
- update questions.
- get rid of them
- make department heads read them
- don't know
- Different questions Professors (sic) make up own questions
- I don't no (sic)
- make them not so generic

These responses are evidence that the standard student evaluations, the CAFETERIA forms, are not taken seriously by many students. However, the high response rate on the SPIE FORM indicates that the SPIE FORM was taken much more seriously by the same students. Furthermore, the written responses explain the Yes or No responses in greater detail. The purposes of SPIE FORM are well served by several of the written responses.

Results of SPIE FORM were included in a three year tenure process review document. These results are not only another means of assessing teaching, the results support a claim of excellence in teaching that the standard evaluations do not support nearly as well. Moreover, some responses on the SPIE FORM suggest why students may rate class or the instructor in a negative fashion. If this is an aspect of class that is central to the class objectives or considered important by the instructor, then it can be continued but the instructor needs to do a better job of selling the value of that aspect of class. If the aspect of class is not central to the class, this aspect can be eliminated or altered. Examples of this are that writing and ethics assignments are given in class and questions on SPIE FORM ask if students learned from the assignments and if they believe the assignments should be included in class. Many students remark that writing and ethics assignments should not be a part of these engineering technology classes. However, these assignments are deemed important by the instructor and are a part of TAC-ABET program outcomes¹. The assignments should be presented so that students indicate they are an important part of class. Some student responses indicate that while writing and ethics assignments do enhance learning, they should not be made in the class. This suggests that these students would rate any writing or ethics assignment as not appropriate to an engineering technology class.

Critiques of SPIE FORM

There are critiques of using SPIE FORM. Obviously, doing something more than required takes additional time and effort. This is true for the instructor not only to write and distribute a SPIE FORM but also to review and analyze the responses. The value of using SPIE FORM is deemed well worth while as the responses are more complete and more useful in the semesters it has been employed. To date, there has not been any student express a sentiment of not wanting to complete the SPIE FORM. This has been a welcome surprise, particularly because students are asked to do this at the end of the semester and during finals week. Evidently the value and importance of the SPIE FORM is conveyed to the students and they believe the responses will be used. It is understood that using a SPIE FORM in larger classes may not be practical. Fortunately, no class taught by the author has had more than 35 students. Regardless of the number of students, the author intends to employ a SPIE FORM at least until the tenure process is complete. The SPIE FORM is crafted by the instructor and does contain wording to elicit positive responses from the students. Thus, the critique of tailoring the survey to a best fit response of the instructor is valid. However, the standard school rating forms are also used. These standard forms have a long history of use in the school. They are a common measure used to gauge teaching effectiveness in annual reviews. Thus, a SPIE FORM does not supersede or hide

the standard rating forms. The nature of creating a SPIE FORM does permit the evaluation form to paint the best picture of the instructor.

Conclusion

The SPIE FORM meets the three main purposes of gathering feedback, providing students with a better means of assessing the class and the instructor, and providing another multiple measure of assessment teaching excellence. It is anticipated that a SPIE FORM will serve as evidence of teaching effectiveness for annual reports and promotion and tenure dossiers. Continued use of SPIE FORM is planned. The author welcomes feedback from anyone else who has similar experiences or attempts to use a SPIE FORM.

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