Effective Teaching Training for New Faculty through Analysis of a Student Evaluation Form

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Abstract

Last year, New Jersey Institute of Technology (NJIT) instituted a one-day workshop for its new faculty. The workshop tried to acquaint the new faculty with many different areas of the university, and part of the workshop dealt with teaching effectiveness and methodology. To provide a framework to understand the necessary steps in effective teaching, a presentation was developed relating the necessary skills to the current evaluation form used at NJIT for faculty.

This paper will describe this presentation, and how numerous action items were developed from the faculty evaluation sheets that are used by our students each semester. There are seven areas that are covered in these evaluation sheets, including how to more effectively communicate with students, how to stimulate interest in course content, and how to effectively demonstrate knowledge of course material. Details on how to achieve excellence in these areas are presented.

Introduction

Writing papers, performing research, grant writing and teaching are all aspects of an academic life, and something that can be stressful to a new faculty member. A challenge to any university is how to start a new faculty member on the road to effective teaching, especially if there has been little or no teaching background prior to their first appointment.

This past year, NJIT decided to hold a one-day workshop for its new faculty, prior to the start of the semester. While the main concept of this workshop was to familiarize the new faculty with the different areas of the university, part of this workshop dealt with teaching effectiveness. In developing this presentation on teaching effectiveness, the question was what areas to cover that would be reinforced during the semester.

Each semester, an evaluation form is used by the students to assess the teaching effectiveness of the entire faculty. There are seven main areas that are evaluated, and the author felt that these areas could be used as a framework to communicate teaching effectiveness skills.

Instructor's Ability to Communicate

When we hear the terms instructor, lecturer, or even professor, we conjure up a one-way communication mode. However, effective communication should be bi-directional, where the students are as involved as the instructor. Active learning and cooperative learning are two methods that can be extremely effective in enhancing two-way communication[1, 2]. While these

methods are effective throughout the class period, they can be especially effective when used towards the end of a class period, when student's attention is at the lowest level.

The concept of cooperative learning is to get students to interface with one another to learn together. The basic concepts of this style of learning is:

1. Fostering positive independence
2. Individual accountability
3. Encourage face to face interaction.
4. Develop teamwork skills
5. Periodic self-assessment of group functioning.

This style is not easy to learn for new faculty, and there are many potential problems. For new faculty, the largest problem would be how to incorporate this style with existing material. One of the most difficult aspects of teaching is how to allocate sufficient time for the material, both within a class period and within the term. This allocation can be severely affected when utilizing cooperative learning activities. The author has used cooperative learning activities in the beginning of a class period, once during the middle, and during the last ten minutes of the class. Each of these activities should last no more than ten minutes.

Besides utilizing these methods to involve students, new faculty need to be aware of utilizing various modes of communication styles. Felder[3] refers to five questions regarding learning styles, and one of these involves the differences between visual learners and verbal learners. *Visual learners* get more information from visual images (pictures, diagrams, graphs, schematics, demonstrations) than from verbal material (written and spoken words and mathematical formulas), and vice versa for *verbal learners* [4,5]. If something is simply said and not shown to visual learners there is a good chance they will not retain it.

Therefore, to be a good "lecturer", a new faculty member must be able to provide visual and verbal information flow. Technology, not just verbal skills, can provide this bridge between visual and verbal learners. One of the easiest and most prevalent technologies is multimedia[6], using such applications as PowerPoint®. However, one of the major problems in utilizing this technology is the total reliance on slide presentation as a means to communicate. Slides can be very effective in showing an outline of the lecture, and no more than 10-15 minutes should be spent on slides without an alternative means of communication, such as boardwork or active learning activates.

Another part of communication is the ability of an instructor to communicate at the level of the students, not way above their level. It is too easy to "assume" that student's should understand the topics, since the instructor understands the material. There are two methods to assure that this will not happen. One method is to follow the KISS philosophy – Keep it Simple, Stupid (although the author uses the acronym as KIS). Simplicity is not an anathema to teaching, and can be effective in helping students learn. Also, new faculty members should ask students during the class if they understand the material, and ask that question several times. Eventually students will understand it is acceptable to say that they don't comprehend the material.

Ability to Stimulate Interest in Course Content

There are several ways to stimulate interest in course content, especially in a technical area. One of the methods involves not being too dependent on derivations. Too often, an instructor might think that students understand the material best by being shown how to derive the material, especially if it involves a complex mathematical derivation. This method is also a way for faculty to show how well they understand the material, and to demonstrate their "brilliance" to the students.

However, the purpose of effective teaching is not to demonstrate the brilliance of the faculty member, but to help students understand the material. Explaining the meaning of a theory or concept by using real world examples, and explaining the importance of this concept in context of other related materials can be more important than derivations. Don't eliminate derivations, because they can be useful in certain applications, but their use should be limited. If the derivations take more than 10-20 minutes, think of how bored the students can become. There is a need to balance between derivation and practical.

Another way to stimulate interest in course content is to involve them, and the concept of active and cooperative learning, and discussed in the previous section, is very effective in keeping student's interest. A simple way of providing an active learning activity is to just ask open-ended questions – and wait for an answer. Too often, new faculty members are not patient enough after asking questions to students, and answer them without giving the students a chance to answer. Use a one-minute silent time – after a few of these silent times, students start to become involved in the learning process.

Instructor's Promptness and Full Use of Class Time

Teaching is not just about helping students learn technical information; it is also about teaching students certain value systems. One of the most important values that are needed in the workforce is being on time, and new faculty members have a responsibility to demonstrate proper behavior to students.

If you are going to be late or absent, plan ahead, and let students know about this. While it might sound ridiculous, since sickness cannot be predicted, many absences are due to various meetings or other service related issues. Students will appreciate knowing there might be a substitute or an alternative assignment.

Full use of a class time is one of the most difficult areas for a new faculty member, but one way to make sure that a class is not finished too early is to plan on covering more material than can be taught in one class period. Sometimes, more material can be presented than originally planned, and the last portion of a class might not have any material to cover. Once a new faculty member teaches a class for the first time, a better understanding of time management for each class will occur. An alternative to planning on covering more material is to plan on alternative class exercises. It is better to have a full class than to have nothing to do for the last portion of the class.

Instructor's Availability Outside Class Hours

Every faculty member has posted office hours, but unfortunately students might work during the office hours, or for some other reasons not be able to see the faculty member. Technology, through e-mail and other web-based applications, such as WebCT, has reduced the need for communication during office hours. While the author is not advocating reading e-mail 24 hours a day, it is important that instructor's respond to student's queries in a timely fashion. Even if there is no specific answer to the question, a response should be made within one day. While students want an effective teacher, they also want a teacher who cares. Being available for student's questions and concerns can demonstrate that caring.

Instructor's Promptness in Returning Work

Most students do not like class assignments, and especially do not like to take exams. However, what can be worse for students is not knowing how they did on either the assignments or exams. If the grading is going to take more than a week, let the students know, especially before or while the assignment or test is being given. Another way of helping meet this limit is to review when these assignments or tests should be given, considering the instructor's workload or outside needs.

Instructor's Fairness and Consistency in Grading Criteria

Make sure a syllabus details grading policies, and stick to it. While an instructor might want to make exceptions when students ask for special consideration, understand the impact on the rest of the class. Exceptions can be made, but within the context of the entire class.

Students will believe that the grades they receive are arbitrary if they don't understand them, so include detailed comments with the grade, whether the grade is for a test, a lab report, or a class assignment. Also, try to give enough graded assignments and exams so there can be flexibility in how assignments and exams will count towards the final grade. The author gives sufficient exams so that the lowest graded exam can be dropped – the concept is that a general understanding of the course will be displayed in the overall grade, not just by one exam.

Instructor's Knowledge of the Material

Before teaching a class for the first time, one of the first questions that should be asked is why students would want to attend every one of my classes? If added value to a course were not provided, then that question would be difficult to ask. Added value means supplying additional material, such as handouts or other visual aids, or providing alternative means of viewing the material. Use the textbook as a guide, not a crutch.

A new faculty member should review the material before a class, even if that material is very familiar to that instructor. Trying thinking about what questions students might ask, and be prepared to answer them. However, if students ask a question that the instructor does not know, the instructor shouldn't make up an answer. Students want honesty – instructors should tell student's that they don't know the answer, but will find the answer promptly.

Conclusion

Learning to become an effective teacher is a complex issue. In this paper, seven areas that can help new faculty members to achieve better teaching skills were presented.

Above all else, remember - The Student is Our Customer, Serve that Customer Well.

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