Training Graduate Students To Teach

(Your graduate students can become more effective teachers both for your department and the departments they will join as professors.)

Ann S. Lumsden

Many of the graduate students employed by university departments to teach freshmen labs and lectures have had no classroom experience or training as teachers. Most are recent college graduates, young and very bright. They are being trained as researchers by their departments, but each one of them is typically required to teach several sections or classes. Employing students as Teaching Assistants (TA's) is supposed to provide them with financial support, improve the teacher-student ratio in the department, serve as the basis of an apprenticeship system that enables graduate students to learn teaching skills through modeling and practice and to ease gradually into the role of professor (Andrews 1985).

In most situations, students are required to teach and are not allowed to choose which course, a practice that gives the assignment low priority in the students' eyes. In fact, graduate work does not aim at preparing college teachers (Ebel 1986). Most graduate students believe that teaching requires nothing more than standing before the class and knowing the material to be taught. Boehrer and Sarkisian (1985) have found that most college teachers practice on their clients without benefit of formal training. They go on to say that for the newly appointed TA, possibly the most immediate threat to self-esteem comes from the discrepancy between this assumption that one knows how to teach and the discovery that one does not.

At Florida State University, the department of biological science was faced with the situation described above. New graduate students became TA's overnight, without any training in teaching. As a result, the quality of their teaching was uneven, and depending on their attitudes, TA's felt either imposed upon or overwhelmed. To alleviate this problem, a one-week workshop was instituted for biology graduate students. It was designed to persuade these future university biology teachers of the importance of good teaching, to inform them of the techniques, theories and procedures that can improve instruction and learning, and to train them in these techniques (Appendix A). In this workshop, organization and preparation are emphasized as essential in any presentation.

The workshop has been quite successful. Besides improved teaching performance, there has been a change in attitude of the graduate students toward the profession of teaching, toward theories of education, and even toward the students they teach. Classroom teaching is a thoroughly adult role, very often the first one the graduate student has taken on. It involves many new demands—speaking in front of a group, presenting material outside the TA's own specialty, and large investments of energy, attention and time (Boehler & Sarkisian 1985). The workshop gives them the opportunity to develop some confidence in dealing with teaching, education and students, and in meeting the challenge to one's sense of adequacy that teaching frequently presents (Boehler & Sarkisian 1985).

Planning the Workshop

In planning the biological science teaching workshop there was a need to review the literature on effective teaching, measurement of teacher effectiveness, strategies for increasing teacher effectiveness, effectiveness of college biology teachers using different approaches, and workshops as training for effective college teachers. In reviewing this literature, the following findings were made: Educators and teaching/learning researchers agree that there are specific skills, methods and attitudes concerned with effective teaching that prospective teachers can learn. Integrating these findings resulted in the following list of traits and behaviors that should be introduced and taught to new teachers:

1. Feedback from the teacher to the students
   a. Praise of students' questions, answers, knowledge of the lesson
   b. Use of students' names during class
   c. Positive reinforcement of students by teacher
   d. Evaluation
      (1) Test and quizzes
      (2) Notes from teacher on papers and lab reports
      (3) Homework

2. Personality and character of the teacher
   a. Friendliness to every student
   b. Enthusiasm about the lesson and the students
   c. Imagination used in presentations, room, handouts
   d. Patience

3. Teacher preparation and presentation
   a. Knowledge of the subject
   b. Enthusiasm for the subject
   c. Variety of methods
   d. Communication skills
   e. Clarity of explanations
   f. Practice in speaking ability
   g. Motivation and fun
   h. Practice teaching of the lesson ahead of time
   i. Preparation and presentation that considers learning styles of the students

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j. Student evaluation
(1) Tests
(2) Lab work
(3) Homework
4. Positive attitude of the teacher
a. Enjoyment of teaching
b. Enjoyment of students and young people in general
5. Classroom management
a. Organized group work
b. Pleasant classroom environment
c. Teacher-centered and student-centered situations
d. Active participation by students
6. Organization
a. Objectives
b. Use of time
c. Preparation
d. Repeat and review
e. Presentation
7. Attention to all students
a. Eye contact
b. Use of student names
c. Realization that all students are different
d. Diagnosis of student needs
e. Awareness of different learning styles

The workshop was systematically designed to incorporate these features. Participants in the workshop are new graduate students who will teach for the university immediately after the workshop. All graduate teaching assistants are later evaluated on their teaching effectiveness. The workshop uses video feedback and actual classroom teaching practice in preparing graduate TA's for teaching.

The Teaching Workshop

The workshop is patterned after a graduate course offered by the department of educational leadership in the College of Education at Florida State University and two Walt Disney Educational Seminars. Several universities sent samples of materials used in training their faculty and graduate student teachers. Other materials incorporated came from The Handbook for Graduate Teaching Assistants and Faculty from Stanford University, a Change Magazine Press publication titled "How To Succeed as a New Teacher," and marketing and communications course materials offered by Walt Disney Educational Seminars. In addition, outstanding faculty from the College of Education and the department of biological science were recruited to do mini-seminars on their teaching specialties, which included learning styles, presentation techniques, lectures, questioning as you teach, labs that work, preparation of good visual aids, chalk talks, preparation skills, organization for teachers, enthusiastic teaching and dealing with students. Exercises were developed that enable graduate students to prepare lessons, teach lessons and observe the lessons they have taught.

Workshop materials include a workbook given to each participant that contains outlines, objectives and activity pages to follow during the workshop. Pertinent readings on teacher effectiveness are also included. Each person attending the workshop must actively participate in writing objectives, constructing test questions, preparing lessons, using audiovisual media and teaching mini-lessons so each student's progress can be evaluated. All participants were videotaped twice during the workshop, and each performance was then given a gentle critique. The first video was evaluated for presentation skills and the second for thoroughness of preparation by both a professional and the graduate student who was taped (see Appendix B).

Finally, participants were asked to complete a written evaluation of the workshop (see Appendix D). Results from these evaluations are used to revise the workshop from year to year.

Procedure

The workshop is presented each fall to the new biology graduate TA's in the week before classes begin. It meets from 8:30 a.m. to 3:30 p.m. every day for five days. Lunch is provided, as are snacks and soft drinks for morning and afternoon breaks. Three previous workshop graduates typically help with the workshop by assisting with the videotaping and serving lunch. They also act as role models for the new graduate students. Twelve university faculty and two graduate students make presentations. Presenters include the chairman and both associate chairmen of Biological Science, the director of the FSU Marine Lab, the director of the Institute of Molecular Biophysics, the chairman of Science Education, the director of The Office of Science Teaching Activities, and other professors known and recognized for their excellence in teaching. For the past three years, the president of Florida State University has given the opening address.

This workshop has been a very positive step in the acclimation of new graduate students in biology to their role as teaching assistants. Graduate students' attitudes have changed drastically, and morale is much improved. Last year, new faculty members were invited to attend, and some did. Who knows where that idea might lead!

References


APPENDIX A

Outline for Teaching Workshop

Day 1, 9:30 a.m.–3 p.m.
A. Introduction
1. Welcome: Chairman of the department of biological science
2. Name game and map
3. Seminar outline and objectives
4. Assignments
B. Preparation
1. Lesson plan
2. Components of effective presentations
3. Syllabus (course outline)
4. Practice of the lesson
C. Lunch: noon
D. The role of the teacher: President of the university, 1 p.m.
E. The first day of teaching
1. Self introduction
2. Introduction to course and text
3. Ice breaker and roll call
4. Course outline
5. Getting started
F. One-on-one awareness: Center for Instructional Excellence, 2–2:45 p.m.
G. Self test: Your learning style

Day 2, 9:30 a.m.–5 p.m.
A. Learners: Department of educational leadership
1. Learning styles
2. Different kinds of learners
3. Your learning style (also your teaching style)
B. Learning: Chairman of department of science education
C. Presentation: Department of educational leadership
Movie: Speaking Effectively: To One or One Thousand
1. Importance of speech
2. Body language
3. Self concept
4. Attitude
D. Video order: Sign up on board

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E. Lunch: noon
F. University Program in Ruby Diamond Auditorium, 1–3 p.m. (transportation provided)
G. Videotaping of each participant introducing self (name, hometown, high school, college, interests, major professor at FSU, Ph.D. or masters, area of study) (2 minutes)! 3–5 p.m.
1. Procedure: Taping, viewing and evaluation of these participants, repeated until entire group has been taped
2. Evaluation
   a. Preparation
   b. Presentation
   c. Evaluation forms (see Appendix B)

Day 3, 9:30 a.m.–3 p.m.
A. Methods of instruction
   1. Lecture
   2. Questions to use with lecture
   3. Questions to lead a discussion
   4. Films, slides, overhead projection
   5. Labs
   6. Field trips
   7. Other student involvement
B. Examples from the department of biological science
   1. Lecture with slides: Chairman
   2. Lecture with overheads: Associate chairman for undergraduate studies
   3. Lecture with props: Director
C. Summary & reflection
   1. Which presentation was the easiest for you to follow?
   2. List one objective of each presentation.
   3. What was the strongest characteristic of each presentation?
   4. Were there weaknesses in these presentations?

Day 4, 9:30 a.m.–3 p.m.
A. Methods of instruction
   1. Questioning: Assistant in research
   2. Chalkboard: Graduate student
   3. Laboratory: Graduate student
B. Evaluation
   1. Tests and testing: Department of educational research
      a. What to test (use of the objectives)
      b. Constructing a test
         (1) Multiple choice

APPENDIX B
Evaluating Teaching Effectiveness

Presentation: Style

<table>
<thead>
<tr>
<th>Directions: Respond to each of the statements below by checking the number that best expresses your judgment.</th>
<th>1 = strength</th>
<th>2 = somewhat problematic</th>
<th>3 = a major problem</th>
<th>4 = not applicable</th>
</tr>
</thead>
</table>

Voice Characteristics
1. Voice could be easily heard.
2. Voice was raised or lowered for variety and emphasis.
3. Speech was neither too formal nor too casual.
4. Speech fillers ("okay now," "ahm") were not distracting.
5. Rate of speech was neither too fast nor too slow.

Nonverbal Communication
6. Teacher established and maintained eye contact with the class as presentation began.
7. Teacher wasn't too stiff and formal in appearance.
8. Teacher wasn't too casual in appearance.

Other Comments:
APPENDIX C
Evaluating Teaching Effectiveness

Content: Organization and Clarity

Directions: Respond to each of the statements below by checking the number that best expresses your judgment.

1 = strength
2 = somewhat problematic
3 = a major problem
4 = not applicable

<table>
<thead>
<tr>
<th>Introduction</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>1. The teacher stated the purpose of the presentation.</td>
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<tr>
<th>Body of Presentation</th>
<th>1</th>
<th>2</th>
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<tr>
<td>2. The teacher arranged and discussed the content so that the organization or structure was made explicit to the audience.</td>
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<td>3. The teacher asked questions periodically to determine whether too much or too little information was being presented.</td>
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<td>4. The teacher presented organized and legible examples, illustrations or graphics to clarify abstract or difficult ideas.</td>
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<td>5. New terms were defined.</td>
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<td>6. The teacher established eye contact.</td>
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<tr>
<th>Conclusion</th>
<th>1</th>
<th>2</th>
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<td>7. The teacher solved or otherwise dealt with any problems raised during the presentation.</td>
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<td>8. The teacher summarized the main ideas in the lecture.</td>
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APPENDIX D

MEMORANDUM
TO: Participants in the Department of Biological Science Teaching Seminar
FROM: Seminar presenter
RE: Your valuable feedback

You have just participated in a teaching seminar. My hope is that the skills and techniques shared with you will assist you in your assigned professional responsibilities. Your ideas are IMPORTANT. Please take a few minutes to provide me with the following information:

1. Your previous teaching experience:
2. Your highest earned academic degree:
3. Did the seminar address your needs as a teaching graduate student? (Please explain.)

4. What differences, if any, will the seminar make in your work plans, performance?

5. What part was most valuable to you and why?

6. Suggestions:

7. Would you be interested in participating once a month in other teaching seminars (e.g. motivation; what kind of a learner am I?; challenges in your teaching; more videotaping, etc.)?

Thank you for your responses. Please let me know if I can assist you in any way. It was a pleasure to have had the opportunity to meet and work with you. Best wishes in your continued endeavors.