

## A CASE STUDY

# Preparing Graduate Students for Teaching Roles "College Teaching for Non-Education Majors"

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When the College of Education at Virginia Polytechnic Institute and State University was established seven years ago, it was decided that a great deal of impetus would be placed on graduate education. To better prepare its graduates for teaching roles in institutions of higher learning, a course entitled College Teaching was added to the curriculum. The course has proven very popular with education majors but few, if any other, graduate students from other curricula in the University ever enrolled in the class.

Two years ago because of the increased emphasis on the quality of instruction in many colleges and universities, the faculty in the College of Agriculture and Life Sciences became concerned about the teaching abilities of their graduate students. Recognizing the need for providing graduates with the best possible education in their respective fields, they collectively agreed that majors should receive training which would assist them in becoming good teachers as well. A joint planning session for the purpose of achieving that goal was held with a group of interested faculty from both the College of Agriculture and the College of Education. It was agreed that graduate students outside the College of Education, who planned careers in higher education, needed tangible experiences related to college teaching.

Using input from both sources, a course was designed specifically for non-education graduate students. The course employed the systems approach to instructional development with the teaching model developed by Kibler, et. al.<sup>1</sup> as a central component. The elements of that model are shown in Figure 1.

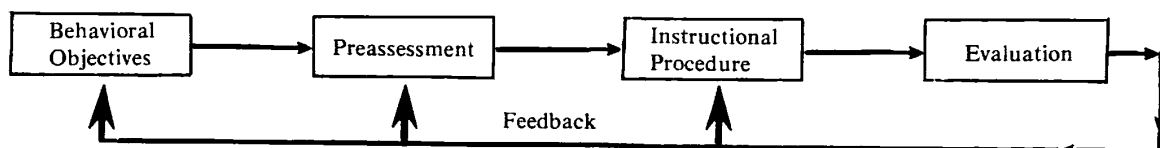
Using the model as a guide for instructional development, recommendations of faculty, and feedback information from evaluation of the College Teaching course for education majors, topics were selected to form the core of the College Teaching course. The topics were:

- I. State of the Art of College Teaching
- II. Communication Skills
- III. Learning Research and Teaching Methodology
- IV. Planning for Effective Instruction
- V. Instructional Resources
- VI. Test Construction and Evaluation
- VII. University Support Services
- VIII. Innovations and Survival in the University

A syllabus which contained instructional objectives, teaching strategies, activities, experiences, and methods of evaluation was constructed. The faculty member assigned responsibility for the course contacted staff members from both colleges who had expressed an interest and who possessed expertise in the topic areas. Some of these individuals attended one or more sessions as guest lecturers, while others worked in teams of two or more to present material. The team approach was used specifically with planning for effective instruction, communication skills, instructional resources, and test construction and evaluation. The major professor coordinated the scheduling of sessions and worked to assure that continuity between topics existed. Two relevant textbooks were selected, Wilbert J. McKeachie's *Teaching Tips: A Guidebook for the Beginning College Teacher*, and John Campbell's *In Touch with Students*. Students could opt to read either or both. One of the major course requirements was the completion of a project which required the application of the Kibler, et. al. (1970) model of the systematic approach to instruction. Students had to utilize the skills and competencies related to college teaching learned throughout the quarter. A second requirement was a video-taped microteaching session during which each student presented a fifteen minute instructional unit. Following the taping, the student and instructor critiqued the presentation using an evaluation form which helped to identify instructional strengths and weaknesses.

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Figure 1 Elements of Teaching Model



## Course Credit

Since academic credit could be given for the course, students could enroll in it for a grade. However, because of the trepidation some students have for courses in areas with which they were unfamiliar, it was recommended that a pass/fail option be available to accommodate those who did not wish to compete for a grade yet wanted to enroll for whatever benefit they could obtain.

Ten three-hour sessions were conducted during the quarter and three hours of graduate credit was awarded students who completed the requirements. In general students elected not to count the course in lieu of other graduate course requirements in their fields. In spite of this fact, interest and enrollment was high. Of the sixty-six students enrolled in the class better than half were from areas outside of education, and 80 per cent of that group were graduate students in the College of Agriculture and Life Sciences.

During the first class period, students were encouraged to express their needs and expectations of the course. Appropriate student suggestions were then incorporated in subsequent sessions. Generally, only minor revision occurred because of the extensive preplanning of the committee. In addition, time was spent to give students an overview of what college teaching is. Included were considerations of the evolution of colleges and universities in the United States. Highlighted were the shift of emphasis from classical education to utilitarian education and the emergence and dominance of public higher education.

The nature of the job market and the prospects for employment of students in college teaching positions were discussed. Emphasis was given to data distributed by the United States Office of Education. To assist students in gaining insight into the employment picture, guest speakers, such as presidents of community colleges, academic affairs personnel, and department heads were asked to share their ideas on the subject.

The final subtopics of the first session concerned the characteristics of college students and criteria for effective teaching. Information about students had immediate relevance since many of those enrolled in the course were themselves totally responsible for an undergraduate course or acted as laboratory assistants. The class members developed what they thought were criteria for effective teaching which were compared with those identified by Perry (1969).

## Communication Skills

Communication and interpersonal skills were considered essential elements for a successful teacher to possess. Through role playing, a negative classroom atmosphere was established which provided a basis for discussion centered around such questions as: "What was your immediate reaction to the role playing situation?" "How did you feel toward the instructor?" "What behavior did the instructor exhibit to alienate you?" "What

is the instructor's role in shaping students' behavior and attitudes toward the course being taught, the curriculum in general, and learning?" "What are some of the verbal and non-verbal skills that can motivate a student or inhibit learning?"

The last question directed the discussion toward the components of a good communication model and the need for teachers to be good communicators. The role of sender and receiver was discussed and attention given to the channels for transmitting messages. It was pointed out that although all components of the model may be present, there is no guarantee that communication will take place. The successful transfer of information can be impeded by several factors. First the sender may not have conveyed the message in understandable terms. Teachers often forget that students are not as knowledgeable as they. Simplification of complex concepts is essential if learning is to occur. Second, the method of conveying the message may be inappropriate. Verbal messages can often be enhanced through the use of visuals, i.e., slides, transparencies, 16mm films, models, etc. Noise is a third factor that may inhibit communication. Noise may not necessarily be sounds such as traffic, trains, hall sounds. The atmosphere in the classroom, temperature, and nervous ticks of the instructors are forms of non-verbal noises that can hamper communication.

## Learning Theory

For most students in the course, exposure to learning theories and teaching strategies had been negligible. Time allotted to the learning research and teaching strategy topic provided an opportunity for students to familiarize themselves with selected facets of learning theory and to study its relationship to teaching methodology. Emphasis was placed on both behaviorist and cognitive theories, and their implications for teaching were illustrated. For example cognitive theories highlighting problem solving and subsumption concepts of learning were shown to have relevance for (1) problem solving techniques in laboratory instruction and (2) lecture organization. The relevance of the behavioristic concepts of reinforcement and feedback for conducting discussion types of classes, homework practice, testing, and other instructional modes which utilize a written or oral interaction technique was demonstrated.

In topic four, which incorporated two class periods, students were introduced to several types of teaching models including the one developed by Kibler et. al. (1970) discussed earlier. Each component was discussed briefly, with the major thrust centering around behavioral objectives. Students were asked to read Robert Mager's *Preparing Instructional Objectives*. Mager's three essential elements of an objective, i. e., conditions, behavior, and standards were highlighted. Students were given an opportunity to develop their proficiency in identifying these elements on a worksheet. They were then introduced to Bloom's Taxonomy and the cognitive, affective, and psychomotor domains were discussed. Handouts

were distributed to students which outlined the hierarchy in the cognitive and affective domains. After thorough discussion of the levels in the cognitive domain, students were given worksheets with written objectives at each level for identification. As a follow up activity, students wrote objectives for each level in the cognitive hierarchy, which were used later for an exercise in test construction.

An intricate part of the planning procedure was the selection of an appropriate teaching methodology and instructional resources to implement the objectives. For this topic an educational film called **Visual Aids** was used to introduce the variety of media available for instruction. Also presented in the film were the advantages, disadvantages, and proper utilization procedures for instructional materials. Students were then asked to review their own written objectives and determine the instructional strategy which would be most appropriate and decide if some form of medium would clarify the presentation and enhance student learning.

### **Developing Exams**

Testing practice was an essential element of the evaluation topic. Three major facets of testing were considered. The first concerned test design or planning. Students were presented with principles of test planning which emphasized behavioral objectives and content sampling adequacy. Procedures for constructing a table of specifications which helps assure completeness and representativeness of content and behaviors was presented.

Test construction received considerable attention and procedures for writing test items were introduced. Students were taught the "do's" and "don't's" of composing all types of test items, with particular emphasis on multiple choice items. Advantages and disadvantages of each type were discussed and appropriate situations for using specific types were illustrated. To highlight the test construction topic, faculty from non-education departments visited class to present their testing practices.

Methods of scoring tests and assigning grades were considered. Attention to the two major approaches to grading, i.e. norm-referenced and criterion-referenced grading received in-depth treatment. Students were told that norm-referenced grading is favored if the purpose of testing is grade assignment, and that criterion-referenced grading is appropriate if mastery learning is an instructional goal. A dual system using both methods was considered.

Methodology for analyzing test results was discussed. Attention was given to item statistics such as discrimination and difficulty indices, range of scores, and shape of score distributions. How to use such data to improve evaluation was discussed.

Using objectives developed earlier in the course, students were asked to construct tests in their own fields of expertise. Peer and instructor critiques of the items occurred. Students who wished could present their tests to a university test analysis service for further evaluation.

The major focus in evaluation of instruction was on the relevance of that procedure to improve teaching. End of term student evaluation forms, with which students were familiar, were critiqued for their strengths and weaknesses. Other types of evaluation methodologies were considered with emphasis being given to techniques which provide information regarding practices faculty use that are detrimental to instruction. Downplayed were the use of evaluations for promotion, tenure, and pay purposes.

While the importance of providing the opportunity for teachers to develop themselves professionally was recognized, staff development techniques were not highlighted in the course. Instead, methods which would increase an instructor's teaching competence were emphasized. Attention was given to variables which related to teaching effectiveness, such as instructor traits, course content, interest level, and organization of material. Recognizing the individuality of teacher effectiveness, the necessity for each person to develop a style of instruction compatible with his/her own subject matter content and personality was stressed.

University support services have been established in most institutions to assist faculty in fulfilling all of their roles, i.e., teaching, research and publication, and service to the profession and community. One of the most valuable of these services is a learning resources center where instructors can obtain media and equipment for instructional purposes: graphics for publication; assistance in instructional development; test scoring and analysis; and television production. A research division generally keeps up to date listings of state, federal, and private foundation grant information. This division may even have a small research budget of its own. Often times a staff is provided to work with professors who are interested in applying for funds. Computer services usually have facilities for test scoring, data analysis, and often times computer-assisted instruction. Library services at all colleges and universities are invaluable for instructional and research purposes. Other services may include such things as duplication of original copy, radio and television studios, university press and film production.

The last topic was divided into two subtopics: innovations in higher education, which dealt primarily with new technology and teaching approaches; and survival in the university. Discussion regarding innovations revolved around computer managed instruction (CMI), computer assisted instruction (CAI), PLATO, dial-access systems, student response systems, instructional television, fiber optics, and holography as forms of technology that have exerted their influence on higher education. The teaching approaches explored were programmed instruction, Postlewait's audio-tutorial system, and Keller's personalized system of instruction (PSI). The potential of each approach and its application in the teaching process were discussed. Instructors on the campus who utilized some of the above methods gave demonstration's during the time devoted to instructional innovations.

### Other Factors

It was the feelings of those who designed the college teaching course that graduate students should be aware of other factors besides teaching which are essential to their survival in the university. Issues such as faculty governance, academic freedom, promotion and tenure, unionization and university politics were raised. The recent trend toward accountability and decreased mobility of professional staff in colleges and universities and their effects on faculty development were also included in this topic.

The activities in which a prospective college teacher must engage to obtain a job were also discussed. Attention was given to procedures that occur when job prospects are uncovered. Students were taught how to prepare a resume, a VITA, write letters of application, and were given interview guides and follow-up strategies to use when applying for a position. They were reminded of the importance of establishing a set of credentials with university placement for review by prospective employers. Major sources of jobs were investigated and attention was devoted to publications where job vacancies in their fields might be listed.

As indicated earlier, the course was designed for graduate students in the College of Agriculture and Life Science, but students were also recruited from History, English, Architecture, Home Economics, Mathematics, Economics. Besides these students a few faculty members sat in on the class. Their presence reinforced the College's philosophy that teaching, as well as research and service, is an intricate part of being a good college professor.

### Perceptions Shared

An open atmosphere prevailed in the class with both the faculty members and graduate students sharing their perceptions about the role of teaching faculty at a university. An unexpected outcome was that each group developed an awareness of the needs, feelings, anxieties, frustrations, and problems of the other. It was felt that if such an atmosphere, with open lines of communication, could exist in all classrooms, the potential for learning would be increased.

At the end of the course all class participants were asked to complete an anonymous teacher/course evaluation. The results yielded a positive outcome. On a scale of one to four, course and instructor related items had a mean of 3.2 to 3.9. Personal interviews further supported these evaluations, and plans have been made to continue to make the course available to graduate students outside the College of Education.

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## Resources for Teaching and Learning

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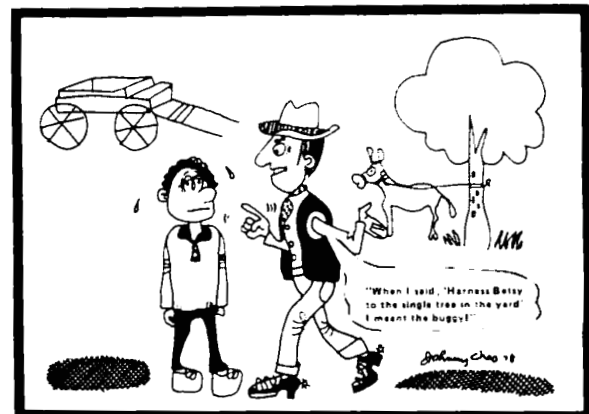
**The effective teacher realizes that everyone's personal history or experience has a time dimension and a space dimension.**

Elementary teachers understand that their pupils do not remember a time when there was no television or no indoor plumbing. Teachers who are 45 or less do not remember a world without radio or movies. College students today have no "direct" experience with World War II or the depression of the 1930's — but their older professors have. Any important event that may have occurred about ten years ago will not be directly known or experienced by high-school seniors, although they may have read or studied about it in school. And most of our urban or even rural college students are not familiar with the unmechanized family farm.

The dimension of space is also a factor in learning. Where we come from is vital to developing common understandings. Few students from Minnesota have been exposed to desert storms or hurricanes. Likewise, students in Arizona or Florida have not experienced a blizzard or ice fishing. The simple concept of a farm will vary from one space dimension to another.

**Common experiences are vital to understanding and meaning in the teaching-learning process.** If students need a particular experience to develop specific skills, concepts, and attitudes, it is the task of the teacher to provide it whether directly, vicariously, or both. A simple example of how a common base is typically achieved is the glossary of terms we develop for a particular field of

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15