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HAS THE TIME COME TO PRACTICE WHAT WE TEACH?
-THE TEACHING-RESEARCH TRADE-OFF-

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ABSTRACT

University teaching at an undergraduate level has always involved opportunity costs, especially in the trade-off of the individual's time between teaching and research. However, recent external forces, as we move into the '80's could very well force major changes in the Agricultural Economic's teaching profession. This paper examines the conventional wisdom that teaching and research are mutually reinforcing. It further examines conflict of goals and several of the economic principles that we teach but seem to ignore in addressing our personal trade-off between teaching and research. A framework is presented for resolving this conflict.

INTRODUCTION

Most agricultural economists in Northeastern universities have professional responsibilities in at least two main areas. Academic positions are predominantly split between research and teaching. In addition, numerous other combinations among administration, extension, research and teaching can and do exist. Each economist must decide, if not consciously, then by default, what part of his scarce resource time will be devoted to each responsibility. This choice is particularly critical and difficult for a new faculty member.

This paper concentrates on the teaching-research trade-off problem that often develops as one gains in reputation and respect as a popular undergraduate teacher. The scenario goes as follows: As one's teaching ability and reputation as a good teacher are recognized, enrollment in one's classes increases; as enrollment increases, time needed for class increases; as general popularity and teaching ability are recognized, teaching committee work increases. In short, the consequence of excellent and devoted teaching usually means less and less time to devote to other areas of responsibility. This most noticeably, manifests itself in pressures on time and lack of productivity in other areas. The purpose of this paper is to examine this personal teaching-research trade-off problem, its causes and some suggested possible solutions.

CONVENTIONAL WISDOM

Universities in general and agricultural colleges in particular seem to have achieved recognition and strength by a balancing of functions of preservation and innovation (Bishop). In most universities, this has been achieved by a balance between teaching and research. In the case of Land Grant institutions the outreach or extension function is also recognized as an important component, although in many university structures it is considered as a component of teaching.

Bishop, p. 706, has stated the widely held view that the functions of teaching and research are mutually reinforcing. The argument for this view is as follows:

> "It is generally conceded that research replenishes the intellectual strength of the university (and) gives substance to teaching. On the other hand, it is generally accepted that the spirit of criticism fostered by good teaching stimulates research. The discovery and transmission of knowledge are regarded as dual, but inseparable functions of a university, especially in the Land Grant universities."

A second part of the conventional wisdom relates to the assumption that what is true for the university (or agricultural colleges) is also true of the professors who work within them. That is, individual professional growth should be achieved by a balance involving classroom teaching, research and extension outreach programs. Agreement of what percentage of one's time is best spent in a given area is, however, a debatable matter. The consensus seems to be that professional development is best accomplished by a high degree of achievement (or at least extensive experience) in at least two of the three areas of teaching, research and extension.

CONFLICT OF GOALS

It is postulated that conflicting or unclear goals are a major contributing factor to the teaching-research trade-off problem. This condition is noted in society, the university in general, and in the Agricultural Economics profession in particular.

Society has often espoused the virtues of a strong education system with highly dedicated teachers and the need to develop the full potential of our human resources, and yet, the commitment in terms of resources and recognition of teaching effectiveness has often not been matched by the rhetoric. In recent times, school budgets have been under severe pressure by legislators, executive officers and citizen groups of various persuasions. Currently, funded programs are being undermined by maintaining current levels of

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expenditures in times of rapidly increasing inflation. For example, from 1977 to 1979 inflation, as measured by the CPI, increased from 181.5 to 217.4 or 19.8 percent. Over the same two-year funding period, the funding of Higher Education in the 12 Northeastern states (Del., Me., Md., Mass., N.H., N.J., N.Y., Pa., R.I., Vt., and W.V.) increased only 17.7 percent (Chambers). Although direct comparisons of higher education budgets in terms of what categories receive what percent of the funds, for example, between teaching and others are not possible with available data, other indirect measures are available. In terms of state university private support dollars, the Office of Research and Information in Washington, D.C. reported that over 56 percent went to research, student financial aid and physical plant (Margin). Also, according to a recent article in the New York Times, President Carter slashed spending requests in nearly all cabinet departments except basic agricultural research funds (King).

Hess, p. 271, speaking on the basic educational problem in our society summarized it as follows:

> ". . . the quality of teaching generally is lower by far than it should be and lower too than it need be. The reason lies in a stubborn refusal of our society to commit to the teaching profession a large enough measure of the best that we have in human resources."

It would appear that the economic system is functioning very well in bidding away from educational institutions some of the most promising teachers.

The conflict in social goals carries over and is inextricably woven into current university affairs. Question after question seems to cry out for answers, and yet, to no avail. Who are we or whom should we be serving? What is or should be the mission of the department, college and university? What is or should be the role of administration, faculty and students? What are the long and short-run goals of various groups? Snodgrass, p. 322, has noted that often administrators speak in vague generalizations on the purpose of the university. Furthermore, it would appear that universities are trying to be "all things to all people" with a lack of adequate focus or direction being devoted to individual activities. In short, individual goals, department goals, college goals, university goals and society's goals are often not clearly delineated and even when they are, seem often to be in direct conflict with one another. Add to this the reality of funding level constraints, political pressure groups and we have a very complex university setting.

Perhaps it is not surprising in the above environment that the Agricultural Economics profession has never seemed to define clearly the nature of its undergraduate instructional mission (Sjo-1974). However, it seems to stand out as a paradox that undergraduate instruction has not been treated as a special activity by many agricultural economists even though for most it is a very important and continuing part of our professional life (Sjo-1974). This observation has special relevance for many of the smaller departments in the Northeast where often 50 percent or more of the individual's time is devoted to teaching and related activities. It is probably not surprising that many individuals in our profession have found great difficulty in setting professional goals that are compatible with the expectations that society, our universities, and colleagues have of them.

COMPLEMENTARY AND SUBSTITUTION RELATIONSHIPS

As an economist, the principles of complementary and substitution relationships are high on our teaching priorities and yet the principles often seem to be ignored when allocating personal time between the teaching and research function.

Although the opportunity cost principle clearly shows that teaching and research are substitutes on one's scarce time, the 'conventional wisdom' clearly lists the functions as complements. Yet, several teacher-administrators and teacher-researchers, among others, have questioned the complementarity of the teaching-research functions.

Over a decade ago, Hess noted that it was not clear if research resulted in a neglect of teaching or had vitalized teaching. In the same journal issue, Snodgrass, p. 325, pointed out that one does not need to do a formal research project in order to be engaged in activities of scholarship.

> "Teaching and scholarly activities are clearly complementary activities, but teaching and project research may not be. The professor teaching freshmen is involved in scholarly activities when he is searching for new ways to "package" economic principles in making them more relevant and understandable for his students. But this activity will probably not result in publication, and therefore, it will do little to add to the stature of the professor or his university."

More recently, other authors have questioned the supposedly close tie between research and teaching. Bradford stated that there was little correlation between teaching and research for most undergraduate courses in agricultural economics. He further noted that there is probably more correlation between teaching and current extension activities. Perhaps Sjo, Orazem and Biere, p. 606 (1973), have best expressed the changed relationship between teaching and

research when they were reporting on the revised undergraduate program at Kansas State University.

> "When conceived and initiated, research emphasis was on developing improved production techniques and was closely related to what was offered in undergraduate instruction programs. Under such conditions there was a wide range of complementarity between undergraduate teaching and research. Gradually, as research became narrower, more complex and more sophisticated, the complementarity between it and undergraduate instruction declined. Today, it may have only an indirect beneficial effect of 'keeping up-to-date'."

In a study by Horan and Sampson (1977) on the measurement of university teaching allocation of faculty at various professional levels, they found that the departments which make the greatest research and publication demands on faculty also allocate such heavy teaching duties so as to make research performance most difficult for newcomers to the discipline.

If the statements by Sjo and others were true in 1973 for Kansas State University, they are even more true today and even more relevant for the Northeastern Agricultural Economics Departments who have been diversified from the traditional production-oriented agricultural areas for years. Although one would find difficulty in arguing that research does not provide fresh and relevant information that can flow into classrooms, the functions of teaching and research surely seem competitive in terms of the professor's scarce resource time.

LAW OF COMPARATIVE ADVANTAGE

Another economic principle that is apparently ignored in the allocation of teaching-research time is the Law of Comparative Advantage. Although we teach the virtues of specialization through the division of labor and point with pride to the productivity advantages of this system, often in Land Grant colleges, we apparently do not believe it applies to our teaching-research profession. For to specialize in teaching seems paramount to facing slow academic death in terms of recognition and promotion.

Snodgrass, p. 325, has noted that the principle of specialization and division of labor is "thought to have little relevance in the operation of a university." Hardin, p. 318, has also noted that:

> "In the competition which exists in the university, the faculty member who is both researcher and teacher will advance more rapidly than the man who devotes full time to teaching."

The message seems quite clear--the 'conventional wisdom' is that one must develop excellence in teaching, research and/or extension and that specialization is not acceptable.

It is a strange logic, but many university administrators and educators have assumed that teaching and learning are synonymous. As a result, it is assumed that a new Ph.D. who is trained in a specialized field of research can also teach effectively, while other society sectors require numerous courses in testing, measurement and teaching methods for a graduate who will teach elementary or secondary school. Consequently, in Agricultural Economics and other programs very little, if any, training is provided for graduate students in teaching. The same is often true of professors once they have accepted a department position and become involved with teaching responsibilities. It is probably not surprising that so many college professors are rated as poor teachers and often appear to know very little about providing an environment to facilitate learning and critical thinking (Tom and Cushman, Kropp). It would appear that the cost of not recognizing the law of comparative advantage is very high in terms of measurable research and excellence in teaching. This is especially true in many of the smaller departments where one is required to be a "jack of all trades." In reality, the immediacy of the situation prevails and, as a result, project research, teaching innovation and publication are often postponed, sometimes indefinitely.

COSTS-REWARD SYSTEM

One of the first principles of introductory psychology is that behavior changes with rewards and punishment (costs) and, as a corollary, that improvements and rewards are closely related. It is also completely rational that young aspiring professionals will devote their energies where recognition and rewards are the greatest. It should be of no great surprise, therefore, that by and large our profession has grown and gained recognition mostly for its research accomplishments.

This cost-reward system has been noted in the Agricultural Economics profession for many years. Research has been rewarded extremely well, often at the expense of teaching. Yearly reports by the USDA of salaries of State Agricultural Experiment stations, Forestry schools, Colleges of 1890 and the Tuskegee Institute have consistently shown that Experiment station salaries by all professional categories over the years have been higher than only teaching salaries (USDA, March 1978). A study by Blaw (1973), found that the faculty at Ph.D. granting institutions compared to faculty at other institutions, had higher salaries, a high proportion had advanced degrees, and they felt a greater obligation to publishing research. Furthermore, the Ph.D. granting institution

faculty perceive research to be of greater importance for promotion decisions than do faculty at other institutions. Numerous other authors within the Agricultural Economics profession have addressed the issue in recent journal articles. For example, undergraduate teaching has often not been an important criterion for promotion (Sjo, 1974). To be primarily an undergraduate teacher, one must be willing to forego national professional reputation (Sjo, 1974). Research publication not classroom excellence counts most heavily in promotion (Tobey); "Traditionally, college faculty expect to teach; now they expect to do research" (Hess, p. 267). Monetary losses and advancement often result from heavy teaching loads (Bradford); there has been a tendency to emphasize graduate education (research oriented) to the detriment of undergraduate education (Manderscheid).

Undergraduate education including advising, teaching and comittee work provides for many a large measure of satisfaction and this along with peer recognition is often very rewarding. However, the rewards are mostly nonmonetary and the recognition is most often local. It would appear that the teaching reward system has not been a major factor in national recognition, academic rank or monetary incentive. In the short run it seems clear that professional acceptance and its monetary rewards are best achieved (at least when starting a career) by maximizing one's efforts in publishable research and relegating teaching endeavors to an acceptable level. Yet, it is interesting to note, as Bradford, p. 1077, has observed

> "In the long run, most of you will be better remembered as teachers than as research workers. Teachers' lives live on in the lives of their students. Bulletin writers are generally little credited outside their own department and rarely known outside their own profession."

In short, it would appear that the development of teaching excellence and a system of rewards are really two sides of the same coin and that neither can develop without the other.

FRAMEWORK FOR IMPROVEMENT

The first step in helping to solve the teaching-research trade-off problem is to recognize that it is real, important, and needs corrective action if the profession is to maintain quality undergraduate teachers. Awareness is needed at all levels both within and outside of the universities. The second step is for university administrators, public officials, legislators and others in positions of authority to provide explicit corrective policies for evaluating and rewarding the teaching progran and teachers as a separate but integral part of the university mission. Further, these policies should provide that the scales of weighting be the same for each endeavor.

In terms of a more definite starting framework, five suggestions are made: (1) universities, colleges, schools, sections or units as well as departments should be required to state realistic goals in terms of their teaching programs. These goals should be specific with respect to teaching, research and public service and be oriented (and as much as possible, measureable) and include short run as well as long run objectives. (2) Professors' job descriptions (including all types of various appointments) should reflect actual job requirements. As part of this suggestion, evaluations and criteria must be developed that can distinguish various levels of competencies and then hiring practices and rewards or punishments administered within the above criteria. Teaching, for example, should be evaluated by discipline peers both within and outside of a given department and include student as well as administrative components. The evaluations should be based on specifics, such as achieving course objective, ability to communicate and motivate, advising, committee work, testing and innovations. (3) In the development of goals and criteria for evaluating individuals against the goals, the concept of opportunity cost should be kept in mind. Although many teaching and research functions have a degree of complementarity they also have a degree of substitutability. (4) It appears that the concept of comparative advantage has too long been ignored in the area of university teaching. Teaching should be recognized and fostered as an area of specialization in the same sense as research. Graduate teaching assistants, for example, could be used as assistants to extend the professor's teaching capabilities. Assistants could be used not only as graders but in routine committee work, student office hours, advising and other areas that would provide the professor the opportunity to accomplish other, more demanding tasks. (5) Steps should be taken to evaluate undergraduate (as well as graduate) teaching via grants and assistantships, journal publication, annual meeting and rewards to the same degree that research has been. In addition, since many, if not most of our Ph.D. graduates will likely do some teaching (even if not in a formal university setting), it would appear that there should at least be a teaching option within graduate programs and that students should be encouraged to take electives in public speaking, course design, and testing and measurement. This option could be in the form of formal course work, seminars, or in teaching practicums.

A FINAL WORD

One is very tempted to say, "So what's new!" "Have not teachers always been relatively paid less than their business or government counterparts, has not recognition always been more visable for research than teaching accomplishments

and has not teaching recognition been much more local than national in scope? Furthermore, have not individual professors always had to choose in the allocation of their scarce time? In short, why is the personal teaching-research trade-off problem any different or more critical today than it has been in the past?"

At least three major factors have changed the environment for university teaching professors in the late '70's. First, there has been a slowdown in the overall growth rate in the U.S. and in the demand for college professors. Although many agricultural colleges have enjoyed constant, and in some cases increasing student enrollments, overall university enrollments are projected to decline. Together with general enrollment declines there has been a decline in Federal funding, a slower national growth rate, declining grade and highschool populations and a change in national priorities away from the large increases in demand for education of the '60's. In short, the demand for education, in general, has declined and the projections are for lower enrollment in the future.

A second factor relates to the centralization of control within universities. During the rapid growth period of the '60's, control of programs, funding and personnel was occurring more at a departmental level. With the budget tightening of the '70's, control has been changed to broader control groups that operate at levels removed from the individual programs, for example, at college, division, university, or even higher levels. As a result, individual efforts are often not known and lost in the overall effort and only reported as broad aggregate results.

A third major change has been student desires for greater program relevancy and society's request for more accountability. As a result, efforts are being made to classify and measure many functions relating to teaching in terms of FTE's (full time equivalents), oftentimes without any effort to assess quality. The numbers game has seemed to have a detrimental effect on individual faculty innovations in teaching and also on participation in a wide range of activities that often appear, in a quantitative sense, to have little direct payoff.

As a profession, it would appear our responsibility is to reevaluate the type of effort and quality to be devoted to teaching within this new university environment. The status quo position, "all things to all people" seems to be the surest course for the individual teacher to reach professional stagnation and a slow nonpromotional death. At the same time, it may lead to the depletion of many outstanding potential teachers.

Although many of the Agricultural Economics teaching programs in the Northeast have become known for strong student-teacher relationships, open door policies with students, yeoman's efforts in advising, individualized training, and a five to six-day work week, can society afford the cost of these efforts? Should we still maintain this almost tutorial type of training? Or are we an anomaly that has outlived its usefulness?

As economists who teach about making choices, it would appear that we have a number to make. It would seem that to do nothing is a choice that will allow outside forces to control our professional direction.

The growth environment of the '60's appears gone and a new era is begging for new directions. If we are to emphasize teaching in our profession, our goals and rewards should reflect this emphasis. If not, we should fully understand the implications for our teaching profession.

Perhaps Hardin, p. 318, was correct when he said

> "The professor who desires peer approval from a community primarily oriented towards undergraduate teaching should consider a career in college rather than in a university."

Or are the words of Brunthaver, p. 891, more correct when he said

> "The major contribution of the university economist will be in teaching, and programs designed to increase the effectiveness of teachers will pay important returns in the future."

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