

Fifty Years of Education

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Opinion/Commentary

Introduction

I have been asked to share with you some of my observations of college teaching and learning over the last 50 years. I first set foot on the University of Nebraska campus as a freshman in September 1951. Probably a lot of you weren't even born yet. I taught my last class in the spring of 2000, not quite a 50-year span, but very close. During those years I served also as an adult church school teacher and a military instructor in the Army Reserve, which gave me important additional insights into teaching and learning.

Today, I would like to address three areas. First, I will describe some aspects of our instruction that have not changed significantly in 50 years. Second, I will review some of the educational practices and programs that have directed our efforts in instructional improvement during those 50 years. Third, I will describe some of the possibilities for the future based on what I have learned and continue to learn as a teacher, a faculty member, and a scholar. After I have alienated as many persons as possible, I hope to save some time for questions and arguments.

The Disclaimers

But before that, I must list a few disclaimers. First, I must limit eye-contact and stick very close to my notes or this presentation may go on forever. Second, I do not consider this talk an educational presentation, since I will violate a whole bunch of sound educational principles which are very important to me. Third, my experiences occurred in agricultural colleges of four-year research universities. They may differ from yours because of differences in the natures of our institutions. Fourth, there will be exceptions to almost every point I make. However, to simplify and shorten my presentation, I will treat them all as gospel. Fifth, I will focus on what we have done with little attention given to how we have done it. Sixth, as we get into the futures part of the presentation, I may stray into what appears to be politics and religion. I apologize in advance. As is my custom, I seek not to entertain you or even please you, but rather to challenge you, and perhaps even to start an argument from which we may all learn something.

The Stalwarts

What has not changed? Certainly, we have always

cared about our students. We have not always cared enough to educate ourselves about teaching and learning in order to make our courses more effective and useful to them, but we have been willing to interact with them, helped them to select courses, advised them about career possibilities, helped them with all sorts of personal problems when they needed it, helped them outwit university requirements, encouraged them to do their best, and frequently helped them find appropriate employment.

Some of you may argue with this next point, but in the main, our requirements for graduation have not changed very much. They consist largely of a list of courses to be completed. Some of these courses are very appropriate, others more or less so, and a few, like castor oil, are supposed to be good for the students, although the students and a few advisors fail to see their value. Frequently, advisors have had little knowledge about some of the courses they have required for their major. Even liberal arts requirements, although tinkered with constantly, are not much different in our institution than those I had to meet in the early '50s. Granted, political correctness has entered the picture, but it hasn't changed the basic requirements all that much.

Third, laboratories have persisted for at least 50 years almost unchanged. They were good educational activities 50 years ago and they are still good ones today. They involve students directly in their studies, often require analysis and writing, encourage working together, and frequently utilize active learning principles. Sometimes I have observed in a new course that more thought has gone into the laboratories than into the design of the complete course.

Fourth, our objectives for our students have always been very vocational. Although we have tried to give them a well-rounded education, an examination of our curricula shows that most of all we want them to be prepared for jobs and careers. As a side-light, the most vocational area of all in our universities has been graduate study.

Fifth, although educational research has consistently shown its low effectiveness in producing long-term learning, we have steadily clung to the lecture mode of instruction. Sure, we have scattered various forms of media, technology, and little activities into it, but it's still lecture. Probably it persists because we

teachers love to preach. It reinforces our ego, and most of us have developed the ability do it without thinking and without planning. Administrators love lecturing because it's low cost. Students like it because it facilitates class-cutting and allows them to catch up on their sleep, and the campus newspaper.

Sixth, our means of evaluating the performance of our students has not changed much. We have consistently relied on paper and pencil tests. We have always lauded essay tests and decried multiple-choice tests. However, thoughtful study of current texts in tests and measurements shows that well-designed multiple-choice tests are much more effective in evaluating higher-level learning than the low-level essay tests that have been so common in classes throughout the last 50 years. For more on this subject, read my article, "The Case Against Essay Tests" in the *NACTA Journal* of last year (Volume 45, issue 4, pages 36-40).

Finally, writing, projects, and student grading have often been proposed as new methods of performance evaluation, but they have always been with us. They were not used very much in the "old days" and they still aren't used as much as they should be. Involving students in research and various types of work-study programs have also been with us as long as I can remember.

- Overhead Projectors
- Filmstrip Projectors
- Audio Tape Players
- Slide Projectors
- Slide-tape Projectors
- Videotape Players
- PLATO
- Teaching Machines
- Computers - Various formats
- Television Sets

Next the processes and programs. I couldn't figure out a logical way to order these, so there is no order to the listing in Table 1.

Table 1. Processes and Program of the Last Fifty Years

Personal Professional Development in Education - Personal Growth Plans	Computer-assisted Instruction - Real Programmable Computers, not Data Managers and Communicators
Educational Television	Experiential Education
IOTA - Instrument for the Observation of Teaching Activities	College and Departmental Teaching Improvement Committees
Teaching Professionals and Teaching and Learning Centers	Multiple-track Instruction and Curriculum
Auto-Tutorial Instruction	Programmed Learning
PSI - Keller Plan - Repeatable Tests	Outcomes Assessment
Guided Design and Case Studies	"Internationalization" of the Curriculum
Writing across the Curriculum	General Education Requirements
Values Instruction and Values Clarification	Learning Communities - Teaching Circles
Faculty Classroom Research	Students Performing Research
Class and Student Portfolios	Distance Learning
Modeling	Teaching Seminars
TQM - Total Quality Management	The "Wired" Classroom

Practices and Programs

Now I would like to talk about some of the practices and programs that we have encountered in the last 50 years. I want to emphasize these because they define our efforts to do a better job for our students and therefore provide a good history of instructional improvement. Almost every practice or program we have encountered has left us with some information or experiences that have improved, or at least have had the potential to improve, our educational activities. Some were around for relatively short times. Some have remained almost 50 years. Unfortunately, what we have learned from a particular practice or program is often lost in the relentless search for something new by the rabid promoters among us. I wish I had time to talk about what we have learned from each of the practices and programs, but available time precludes it.

First I would like to mention the major items of equipment (gadgets) that have helped us through the years:

- Blackboards
- Newsprint Stands
- 35-mm Film Projectors

I am sure I have missed some. I repeat that there is not one program in this list that did not, nor does not, have at least some redeeming value. Most have given needed new direction to our teaching activities. However, today society seems to believe that new is valuable and old is not. Therefore we must replace the old with the new. Sometimes that's very smart, and sometimes it's incredibly stupid. Other times we just don't know. One recurring message is that there never has been, nor is there currently, nor will there ever be a so-called "wave of the future."

The Future

This statement then, brings us to the future. To look at the future requires an assessment of the present. Where are we now? In most of our institutions of higher education, research is King. The Land Grant Philosophy as originally conceived and which has guided us for so many years has been essentially abandoned. Students are, for the most part, trained for careers in big business. We do a fairly good job of education, but much that is known about teaching and learning is not being implemented in our classes. Second-order improvement in teaching and learning show up only sporadically. Professional development

Fifty Years of Education

of faculty members in teaching and learning seems to have a low priority among both administrators and faculty members. Maintaining student numbers is a frequent problem for a variety of reasons. Portions of the farm economy are not very healthy and have been marginalized by decision-makers. Instances of low faculty morale are becoming more evident. There is dissatisfaction among citizens with education of their sons and daughters at all levels. Certainly there have been better times for higher education.

It has been said that there are two characteristics you can count on for the future. First, it won't be like the past. Second, it won't be what the futurists think it will be. Keeping these statements in mind, I will not try to predict the future, but rather lay out some possible futures that may define the extremes.

One possibility, of course, is an educational system much like what we are experiencing today. In the short run, the future will probably look much like the present with minor modifications, primarily because few critical stresses are perceived within the system. In the long run, however, the continuation of the system as we know it is less likely. Even if the present system doesn't become unsustainable, there will always be calls for change, mostly because the world is changing, even if the institution is not.

A second future could be a drastically transformed higher education system or even the destruction of the system as we know it. This future could result from very serious societal, political, or environmental problems which could drastically affect state, provincial, or national priorities, which would in turn affect the support for higher education. The shape of these changes is impossible to predict at this point. Such an outcome could result from serious energy problems such as a major interruption of the petroleum supply to the United States, a major terrorist attack, meltdown of a portion of the economy, adverse weather conditions perhaps resulting from global warming, a point or non-point pollution problem, or a host of other disasters which may be waiting in the wings. We would like to think that the probability of these types of events is low, but we are not doing much to prevent or prepare for them at this time, either locally or nationally. Nor, as I said before, are we preparing our students very well for these types of situations, one or more of which are considered by knowledgeable people to be likely or possibly inevitable.

A third future is one which will lead the higher education system to greater effectiveness and respect. This future will require a totally different view of our institutions, ourselves, our students, and our world. First, our educational institutions must place more emphasis on effectively serving the present and future higher educational needs of the state, province, or locality, and give much less emphasis to the self-centered image and empire-building activities which seem to consume so many of

our institutions today. Instead of being the training and research arm of big business, these institutions will have to empower all citizens to make their greatest possible contribution to their world in their own sphere of influence.

For us teachers, we will have to broaden our experience and abilities through revitalized professional development. We must go beyond our narrow science and technology mini-world, and embrace the whole gamut of human experience, past and present. This experience includes philosophy, politics, ethics, geography, history, culture, and yes, even religion. Working together, we will have to find solutions for educational problems that confront us and to prepare for those likely to lie around the corner. We must develop those concepts, skills, and ideas that allow us to design comprehensive teaching and evaluation programs that will insure that our students have the abilities to make a better future for themselves and all the people of the world.

For our students, we will have to decide what is important and what is trivial in present-day education programs. Speaking, writing, personal interaction skills, and comfort with ambiguity will still have to be strengthened. Concepts will still have to be mastered. But increased emphasis must be given to problem analysis, formulation of alternative solutions, creation of alternative scenarios, and assessment of outcomes. All of this will have to be directed toward building on students' knowledge, abilities, and talents rather than upon finding the "school solution." A student reaching for a calculator to multiply by ten, one, or even zero, as I have often observed, should no longer be acceptable.

Those of us in the agricultural and life sciences and natural resources are uniquely positioned to lead the way in this effort because of our close connection to many areas where serious problems are likely to occur, such as the environment, food supply, weather, energy, resources, and others.

We would all like to see this future. But it will not happen spontaneously. The processes that must be followed are not very different from those used in preparing a high-quality course. Measurable objectives describing desired outcomes must be written and agreed upon. Activities and courses-of-action which will accomplish those objectives must be designed. Financial, personal, and knowledge resources must be identified and gathered. Progress assessments must be made (tests must be written). Client responses (student evaluations) must be collected and studied. We can do it if we have the will and a lot of help from society.

Editor's Note: This is the text of Dr. Sorensen's Blue Ribbon Presentation given at the June 2002 NACTA Annual Conference in Lincoln, Nebraska.