

# Five Factors to Evaluate Distance Education Programs

## Keynote Address

1997 NACTA Conference

Iowa State University, Ames, Iowa

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It is important to recognize that the context for learning in our society is undergoing profound change, from a focus on teaching to a focus on learning. As with all technological change, people are spread across a predictable range of relative satisfaction with the present situation (Rogers, 1995). There are those who argue that change is unnecessary because we have the best educational system in the world, and those who argue that "School's Out"—that the entire American system of education is more than inefficient, it is "irrelevant", and should be replaced by some technologically mediated system of just-in-time "Hyperlearning" (Perelman, 1992). I believe the truth lies somewhere in the middle.

In this era of unprecedented change, I think it is somewhat presumptuous for anyone to set forth answers to questions about distance education. I hope that the discussions we begin today will serve as a benchmark we as faculty can use to define our role in this new educational climate. Barbara Means (1994) said, "The school reform movement and the introduction of technology into classrooms are two of the most significant trends in education today" (p. xi), and these two trends may "become mutually reinforcing partners in support of student learning" (p. xii). I like to think about the change process we face as an opportunity to improve student learning.

We should recognize that the successful educational systems from our past are no longer adequate to meet the needs of the students we're preparing for the future, or even the present. The world is changing, has in fact, changed. In their first five years of working, half of what engineering students learned in their four years of college becomes obsolete (Davis & Botkin, 1994). Lifelong learning is no longer an educational buzzword: it's become an economic necessity. Many business and industry executives believe that the ability of their workers to continuously learn faster and better may be their only sustainable competitive advantage (Fingar, 1997). Students today literally need to go out and *learn a living*, constantly upgrading their skills throughout their professional careers. What's more, they expect us to provide them with these opportunities. Three major findings of Dillman, Christenson, Salant, and Warner's 1995 national survey, *What the Public Wants from Higher Education*, were: "Eighty-one percent think that getting additional education is important

for them to be successful at work," that "distance education strategies have the potential to overcome significant barriers to lifelong learning," and "public support exists for universities, and land grant universities in particular, to do more than educate 18-22 year old undergraduates," including "teaching older, returning students" (pp. 3-4).

Can we meet this growing expectation? I certainly hope so, and I believe that effective distance education programs will help. What do we mean by *program*? First, a program is not synonymous with a course. Comparatively, individual courses are easy, programs are hard. Absolutely anyone can, and does, offer courses. In 1993 there were 93 "cybercolleges," or accredited institutions offering credit granting courses on-line, listed in Peterson's "Distance Learning" guide. The 1997 edition lists 762. "Over 1 million students are now plugged into the virtual college classroom" (Gubernick & Ebeling, 1997, p. 85). Compare that with the 13 million attending the "brick and mortar schools" we all work in. A tremendous number of people are offering, and taking courses on-line.

Conversely, in order to offer a program, an institution must demonstrate a commitment to ongoing support, both financial and technical, to the continuation of the program for a period sufficient to enable students to complete a degree or certificate. I strongly believe that students enrolled in an institution's programs be offered the same opportunities, and meet the same requirements, regardless of location or delivery method. Though much more difficult to establish and maintain, I believe future success in distance education lies in offering effective programs, not courses.

There are currently not very many examples of successful degree-granting distance education programs in agriculture. Our hosts here at Iowa State recently began to offer the Professional Agriculture program to meet the needs of baccalaureate degree seeking students who wish to minimize the time they spend here in Ames (Iowa State University, 1997). Kansas State offers a B.S. Degree in Animal Sciences and Industry—animal products option, through their Division of Continuing Education (Kansas State University, 1997). We, at the UI, offer a masters degree in Agricultural Engineering through Engineering Outreach, and a B.S. in General Agriculture through a collaborative arrangement with the Col-

lege of Southern Idaho. There are a few others, but not many.

The reason may be that the formula for effective distance education programs is not as simple as the sum of the successful courses. Of course, some argue that distance education is inherently ineffective. Let's address that issue first.

Thomas L. Russell, (1997) from North Carolina State University summarized 248 Research Reports, Summaries, and Papers in his on-line resource, "The 'No Significant Difference' Phenomenon." As the title implies, this meta-analysis of distance education research indicated that distance, and the methods employed to transfer an instructional program over distance, are not determining factors in instructional effectiveness.

14 years ago, Clark (1983) stated, "The best current evidence is that media are mere vehicles that deliver instruction but do not influence achievement any more than the truck that delivers our groceries causes changes in nutrition . . . only the content of the vehicle can influence achievement" (p. 445). In order to completely agree with Clark's statement, I would need to add that, you'd need to know your customer, the contents must be properly packaged, and the vehicle carefully chosen.

I think it's important to note that there are clearly differences between the students who avail themselves of these kinds of programs and the no-longer-typical 18-23 year old college student. I don't believe that Dr. Clark was suggesting that we could ship groceries to customers without first knowing the kinds of foods they preferred.

Additionally, we should be aware that there are clearly differences in the subject areas chosen for delivery over distance, and that these differences influence the delivery method. To continue with Clark's analogy, you hopefully wouldn't ship ice cream and fresh vegetables in the same truck.

In the final analysis, distance education can be as instructionally effective as any other well-designed instructional delivery method at providing particular kinds of instruction to particular audiences. The audience with the greatest degree of success in using distance education is the self-directed, internally motivated, active learner who wants to participate in shaping learning experiences that apply directly to his or her current situation or life experience. These people are adults who want to complete a degree, university students with schedule conflicts, lifelong learners, and working professionals who need to retain certification or earn advanced degrees.

This is also the fastest growing market for education of any type. In 1992, nearly four million more corporate employees received formal training than in 1991. They each averaged 31.5 classroom contact hours. That's 126 million *additional* hours of learning in one year. To handle this kind

of growth, 13 new universities the size of Harvard would need to be built each year (Davis & Botkin, 1994). Clearly, other methods will need to be employed, and effective programs of distance education will undoubtedly play a role. Professionals in business and industry training certainly think so. In 1996, training programs delivered over the WWW grew by 87%, those delivered on CD-ROM grew by 53%, while the number of instructor-led training programs fell by 13% (King, 1997). While concern for the quality of the educational experience we provide our learners is admirable, the argument that we cannot offer a given course or program at a distance grows weaker every day.

In the limited time we have today, I want to describe five factors I believe are indicative of the success of any distance education program. These five factors are: **Planning and Instructional Design, Putting Students First, Administrative Commitment, Institutional Culture, and Strategic Partnerships**. Now let's take a look at each of the five.

### Planning/Design

My co-presenter today, Barry Willis (1995, p.1) once wrote, "Without exception, effective distance education programs begin with careful planning and a focused understanding of course requirements and student needs."

The ordered planning and design of these programs, following a recognized instructional design scheme from Needs Assessment through Evaluation, is critical.

Assuming that the program follows accepted instructional design practices, how does the fact that it's delivered over distance shape it's practice?

Perhaps the most difficult practice is to involve learners fully in the teaching-learning process. Make them active participants in their educational program. There is now widespread agreement among educators and psychologists that the advanced skills of comprehension, reasoning, composition, and experimentation are not acquired through the transmission of facts but rather through the learner's interaction with content. This constructivist view of learning is the well-spring of many of the ideas for the current curriculum and instruction reform movement (Collins, Brown, & Newman, 1989; Resnick, 1987).

The *presentation* of information, however it is accomplished (e.g., book, audiotape, videotape, interactive videoconference, etc) is *not* teaching. According to Gagné and Briggs (1979) there are nine events of instruction: "1) Gaining attention, 2) Informing the learner of the objective, 3) Stimulating recall of prerequisite learnings, 4) Presenting stimulus material, 5) Providing "learning guidance", 6) Eliciting the performance, 7) Providing feedback about performance correctness, 8) Assessing the performance, and 9) Enhancing retention and transfer" (p.123). Presenting material is #4. While no one disputes that the presentation of

material is an important event, nor that an inordinate amount of time must be spent to both create an effective presentation, and modify it for transmission over distance, I hope that no one believes that the presentation is, in and of itself, teaching.

Our primary job as educators is to create and foster an environment in which learners are encouraged to interact with the materials at a sufficient depth for them to learn well. This means that we must concentrate on understanding what it is we want learners to be able to *do* following instruction, not on what we would like to cover in the course. Additionally, we need to concentrate more on designing active learning environments *for* learners, including authentic, challenging tasks, and less on how we want to present the materials using all the latest bells and whistles.

This is true even when we are using stand alone computer-based interactive multimedia training programs that appear to only require a computer and a learner. Any technology serves only as the delivery platform, the connecting link, between an instructor and a learner. Instructors choose the scope and suggest the sequence, they choose how to present the materials, the cognitive structures, what questions to ask, what remediation to suggest, and what indicates successful mastery of the content. True, with interactive CBT, the instructors did all this a long time before the learner arrived at the workstation, and they only had to do it once, but they still did it.

In the final analysis, technology contains neither a pedagogical philosophy nor a content bias. We cannot base instructional decisions on whether or not a particular technology is effective. The key to effective instruction over distance is whether or not the instructional design—teaching methods, strategies, tactics, and curriculum materials—*match* the chosen technology to create an effective learning environment. The key to the partnership of technology and education is the development of reformed sets of curricular and instructional goals followed by the application of technology as a tool to support these goals.

### **Putting Students First**

Whenever I hear someone mention “student-centered” educational programs, I think of the Sasquatch we’re supposed to have in Idaho. Everyone talks about them, but no one can provide you with an example of a “Bigfoot.”

What does it mean? How do you operationalize “students come first?”

Well, let’s list some factors:

Student-centered programs provide clear and complete information, in a timely fashion, on: the curriculum, the course and degree requirements, the nature and amount of instructor-student interaction, the assumptions made about technical competence and skills, technical equipment required,

the availability of academic support services and financial aid resources, and the cost and payment policies for the program. This information is supported by an academic advising process that ensures that every enrolled or admitted student has the background, knowledge, and technical skill needed to undertake and be successful in the program.

Once enrolled, students have reasonable and adequate access to the range of student services appropriate to support their learning, and appropriate learning resources are equally available to students regardless of their location.

The program provides for appropriate and sufficient synchronous and asynchronous interaction between faculty and students and among students.

Qualified faculty provide academic oversight of the program, ensuring the content addressed is both adequate and current.

Finally, the institution provides for the assessment and documentation of student achievement in each course and at completion of the program. Moreover, an evaluation of the program’s educational effectiveness is performed using assessments of student learning outcomes, student retention, and student and faculty satisfaction. To complete the circle, students are given access to this program evaluation data.

To a very large extent, these kinds of services require a human touch. If programs are to be truly “student-centered,” then truly intelligent student services are a must. By this I mean services that do more than provide information; they actually assist students in making choices from among similar alternatives in a user-friendly way.

How many times, with how many different people, does a student have to initiate contact with an institution to enroll in a course? To pay their fees? To order textbooks and materials? To report problems?

How many contacts are necessary? AT&T is allocating enormous resources to “provide all its customers with just one point of contact, a single source that can address all their sales and service needs” (McCartney, 1997, p.38).

AT&T used to have a monopoly on telecommunications. Many of us had a similar monopoly on higher education within well-defined “service areas.” Like AT&T, we’re now facing competition in a global marketplace. Outstanding student service is no longer a option; it’s an expectation.

### **Administrative Commitment**

Here again, how can you operationalize administrative commitment?

One measure would be the extent to which the program is consistent with the institution’s role and mission. Although I think this is important, I also believe it would provide a more qualitative than quantitative assessment. How can you quantify commitment?

## Institutional Culture

Well, I'm not Jerry McGuire, but one easy way is to follow the dollars. Is there support for faculty development? Adjustments to workloads? Are necessary facilities and technological equipment available?

What kind of funding is required? Just how wide is the educational technology gap? I contend that the information age revolution we've all been hearing about is happening everywhere in the world, except in schools and colleges. Private industry is spending over 300 times more on technology than public schools.

Remember that education in the U.S. would be the 8<sup>th</sup> largest economy in the world if it were an independent nation. 450 billion dollars a year. It is arguably the nation's largest business. It is also arguably, the business most dependent on the transfer of *knowledge* and *information*. So you might expect that it invests heavily in technologies that facilitate these functions? Surprisingly, you would be wrong.

Education, as an industry, invests virtually nothing in buying technology for its workers. The average American industry makes a capital investment of \$50,000 per worker. High tech industries invest \$100 - \$300,000 per worker. Education spends less than \$1,000 dollars for each worker.

We also invest virtually nothing toward the improvement of our industry. In the average American industry, 2% of sales goes back into Research and Development; for high tech industries 7%; 20%, sometimes 25% or more is directed back into R&D to find better, faster, cheaper ways to accomplish their core initiatives. Microsoft, for example, will spend over \$2 billion in 1997 on R&D. By contrast, in education, 1/4 of 1/10 of 1% of total national education spending goes for research and development (Perelman, 1992).

Ladies and gentlemen, I submit that distance education is R&D for education.

So, to measure administrative commitment, look for the availability of faculty support services, both equipment and personnel, specifically related to teaching via distance. Look for policies for faculty evaluation that include appropriate consideration of teaching and scholarly activities related to electronically-offered programs.

Finally, look at how the program is funded. Initially, many programs are supported through extraordinary funding sources including grants and contracts, and the temporary shifting of funds from other budgetary assignments. The extent to which a program is funded as a *normal budget item* is a measure of administrative commitment.

In many cases, the administration champions the idea of distance education, but then fails to follow through with the resources necessary to accomplish the task.

Closely tied to administrative commitment is a factor I call institutional culture. These are the policies and procedures, both formal and informal, that we as faculty operate under. To a very large extent, these procedures are unwritten, and even unspoken in many cases.

In higher education, the culture has been that we are a monopoly. Further, not only are we the only show in town, we are the best show in town. We can therefore: ignore the costs of doing business, work alone, exist in isolation, treat students as serfs rather than customers, and change to meet new demands as slowly as we like. We also decide how and when to reward those functions we believe faculty should carry out.

To be successful, distance education programs require a shift in institutional culture. Let me give you a couple of examples.

In many states, legislators have adopted the position that they will determine the extent to which credit will transfer from one institution to another. As you can imagine, this issue has caused a stir among faculty members. Faculty need to realize that the time has passed when they could determine in closed meetings held on each campus what credit they will and will not accept, and legislators need to realize that faculty should be involved in the process. I'm hoping that the State Boards of Education assume leadership for this issue and form committees with faculty participating from all the institutions in the state to address it.

We need to adopt academic policies, and promotion and tenure processes that reward the realities of teaching at a distance, and address the changing needs of teaching faculty. As mentioned earlier, teaching via distance requires significantly more planning, cooperation, communication, and design and development than does teaching to students collocated with the instructor. Faculty often are faced with the dual challenges of upgrading both their teaching methodology and their technological skills in order to develop a successful distance education program. Without some change in reward structure, many find the effort professionally counterproductive.

As an example, some faculty members in our Family and Consumer Science department conducted a program via satellite entitled Feeding Young Children. This was a good program, with an estimated audience of over 7000 participants. When the program was first completed, there was no recognition from our campus, and some of the faculty members felt burned out. They told me that they were not sure if they would ever do another program. Over the next six months, Feeding Young Children received national awards and recognition, and then was belatedly recognized on our own campus. Several of the faculty involved have since indicated that

they are ready to go again.

### Strategic Partnerships

Strategic partnerships are perhaps the most important factor in the long-term viability of distance education programs. In fact, much of the advantage of distance education may only be realized through strategic partnerships.

For the most part, it is unheard of to send students to another school that offers a course available at your institution. Yet our College of Agriculture has had a collaborative agreement in place with the College of Southern Idaho since March of 1994 that does just that. Under this agreement, students are able to complete a University of Idaho B.S. degree in General Agriculture by completing the two-year agriculture program at CSI, and taking their upper-division courses from the UI via distance. In our model, the capacity of both institutions is enhanced.

A Higher Education Planning Grant entitled Developing Distance Delivery of a Tri-State Regional Degree Program in Agriculture has been submitted by the University of Idaho, Washington State University, and Oregon State University. The project involves creating a collaborative arrangement among three land grant, and initially, four community college institutions, to deliver a complete baccalaureate degree in general agriculture to learners located at any of the participating locations. This model program presents many additional opportunities and challenges, but is a natural extension of the program we have in place with the College of Southern Idaho.

While the Tri-State Degree program promises to benefit the post-secondary institutions in the Pacific Northwest through greater collaboration, the articulation of degree programs, and increased efficiencies through the reduction of duplication, the real beneficiaries will be the non-traditional learners in these three states. By selecting the very best from each of the institutions, students will have increased access to high-quality instructional programming in agriculture.

There is broad agreement that collaborative efforts similar to this hold the answer to many of the challenges facing higher education today. The widespread support enjoyed by initiatives like the Western Governors University (WGU) is indicative of the commitment to this concept.

Collaborative programs provide both the ways and the means to extend successful, high-quality distance education programs in agriculture to the place- and time-bound learners in our states.

### Conclusion

Many of us work at land grant institutions. The Morrill Act that created our institutions championed the idea that education, open to all and focused on learning that is applicable to

real economic needs, cannot be divorced from economic growth and national strategy. To say the times have changed is an understatement, but the idea is as relevant today as it was in 1862.

Distance education provides us with a tool to help meet the expanding demand for education and training. In the final analysis it will be you, the faculty, who have to actually develop these effective distance education programs. I believe the five factors I've described here today, Planning and Instructional Design, Putting Students First, Administrative Commitment, Institutional Culture, and Strategic Partnerships are indicative of the success of any distance education program. Use them as a benchmark in the ongoing discussions on your campuses as you strive to improve both access and quality in your programs.

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## First NACTA Executive Committee Meeting Minutes

The first NACTA Executive Committee meeting was called to order by President Rick Parker at 4:00 p.m., June 22, 1997, in room 204, Scheman Center. Iowa State University, Ames, Iowa. Executive Committee members present were Parker, Erpelding, Yoder, Brown, Gough, Stufflebeam, Banwart, Gleischner, Frey, Haning, and Jen. Chairs of NACTA Committees and Boards present were Terry, Pry, Barkley, Johnson, Foutch, Sorensen, Beals and Barrett. Chairs of the 1998 and 1999 Annual NACTA Conferences, Kent Mullinix and Jim McKenna, also were present.

The minutes of the Fall 1996 NACTA Executive Committee meeting were approved as presented in the December 1996 NACTA Journal.

The Secretary-Treasurer's reports were presented and discussed. These reports are shown following the minutes of the Annual NACTA Business meeting.

The NACTA Journal Editor's report was given and discussed. A motion passed to include the Annual Conference schedule and NACTA awards winners as a 30 (or so) page insert in each June NACTA Journal, as an addition to the normal 60 page format. A motion was passed to proceed with a reciprocal agreement with two other national professional teacher societies to publish appropriate announcements in each others journals.

Both the Historian and Secretary-Treasurer withdrew their resignations and were included in the report of the nominating committee to serve additional two-year terms.

President Parker appointed an Auditing Committee of James Wilson, Chair, Robert Stephenson and Herman Sampson to examine the NACTA Secretary-Treasurer's 1996-1997 financial books and records. He appointed a Resolutions Committee of Susan Price, Chair, Nancy Irlbeck and Ed Brokaw.

An invitation for everyone to participate in the 1998 Annual NACTA Conference, June 21-24, 1998, at Wenatchee Valley College, Wenatchee, WA, was given by General Conference Chair Kent Mullinix. The theme for the Conference is to be "Diversity in Agricultural Education".

Jim McKenna, General Conference Chair of the 1999 Annual NACTA Conference, presented an outline of the Conference to be held at Virginia Tech University, Blacksburg, VA, June 19-22, 1999.

The meeting recessed at 6:00 p.m.

*Murray A. Brown  
NACTA Secretary-Treasurer*

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## NACTA Foundation Board Minutes

The NACTA Foundation Board held its annual meeting at 8:00 a.m., June 24, 1997, in Curtiss Hall, Iowa State University, Ames, IA. Foundation President Foutch recognized the Board members present. They were Brown, Parker, Weber, Lindahl, Posler, Pals and Erpelding.

It was confirmed that donations to the Foundation from an individual totaling \$1,000, or from a corporation totaling \$10,000, entitles membership in the Schowengerdt Keystone Club of givers.

It was announced that NACTA Western Region Director Joseph Jen was successful in soliciting enough corporate institutional funds in his region to endow the NACTA Western Region Outstanding Teacher award. The Central Region is partially endowed. Directors of the other NACTA regions will be encouraged to secure corporate funding sufficient to endow their NACTA Regional Outstanding Teacher awards.

The NACTA Foundation Pledge Form will be revised so that donors may designate that their contributions be placed in the "general", "E. B. Knight NACTA Journal Award", or "Jack Everly NACTA Journal Award" Foundation accounts.

The meeting was adjourned at 8:50 a.m.

*Murray A. Brown  
NACTAF Secretary-Treasurer*