# Distance education, individualization, and the demise of the university

## Marvin J. Croy

*The University of North Carolina at Charlotte, Charlotte, NC 28223, USA*

**Abstract**

Both critics and advocates question distance education. These questions concern the future survival of the university as a residential institution, the quality of distance learning, the meaning of education, individualization, the control of distance courses, and the potential for expanding student choice. Such questions are related to issues of responsibility and control over technology and to recommendations about how faculty on both sides of the debate should approach this technology. It is concluded that developing undergraduate distance degree programs is at best premature. It is faculty who bear primary responsibility for the impact of distance technology on higher education, and there is currently a wide gulf between faculty attitudes toward this technology. © 1998 Elsevier Science Ltd. All rights reserved.

When thinking about education and technology, questions and sometimes accusations are posed by both advocates and critics of distance education. Critics often question the worth of untested distance technologies, while advocates question the assumed effectiveness of the current system of higher education. Focusing on the nature of individualization in education and its relation to rule-governed technologies can serve to frame these questions in ways that make the relevant values and risks clearer. These questions will be made explicit below, followed by some suggestions for reasonably addressing them.

## 1. What's at stake?

In recent times the very existence of the university in its traditional form has been called into question. The revered management consultant, Peter Drucker, expresses these doubts in the form of a prediction.

> Thirty years from now the big university campuses will be relics. Universities won't survive. It's as large a change as when we first got the printed book. Do

you realize that the cost of higher education has risen as fast as the cost of health care?.. Such totally uncontrollable expenditures, without any visible improvement in either the content or the quality of education, means that the system is rapidly becoming untenable. Higher education is in deep crisis [1].

This view of higher education in America is becoming commonplace, along with predictions that the current system will be replaced. The nature of that replacement is hinted at in Drucker's ultimate analysis. "Already we are beginning to deliver more lectures and classes off campus via satellite or two-way video at a fraction of the cost. The college won't survive as a residential institution" [1] (p. 127). What will survive is a cost effective system of distance education based on computer networks.

Perhaps the clearest explanation of how and why this transition will occur is put forward by Eli Noam in his portrait of the "dim future of the university" published in Science [2]. Noam's historical analysis of information institutions predicts that the current model, which has been stable for over 2500 years, is ripe for fundamental change. "This model—centrally stored information, scholars coming to the information, and a wide range of information subjects housed under one institutional roof—was logical when information was scarce, reproduction of documents expensive and restricted, and specialization low" [2] (p. 247). None of these conditions exist today. Electronic communication has changed forever the flow of information, controlled for millennia by scholars serving as gatekeepers and proprietors of physical libraries. Moreover, the current system carries a huge price tag and cannot hope to match the capacity of distance education to expand markets. Once universities lose their grip on accreditation agencies, private companies (Noam's example is "McGraw-Hill University") will begin awarding degrees.

Noam expects large, public universities to be affected much more than small, private colleges. The only hope for large universities is to separate or "unbundle" its component functions such as credentialing, teaching, guidance, knowledge generation, and housekeeping.

Credentialing is the key factor. Universities cannot hope to compete with companies that serve only this one function and hence must be prepared to provide credentials to those who want them and nothing more.

Credentialing is also the cornerstone of the Western Governor's Virtual University, currently an on-going enterprise produced by a cooperative effort of several western states. Governor Roy Romer of Colorado explains the need for virtual universities as follows.

This country has a great demand for new skills and knowledge in the workforce because that is the nature of the economy we are going to face in the next century, and because we need to close the wage gap. What this means is that there are many more people to be educated today, and we need to find a way to make learning more affordable and more accessible and still keep it high quality [3].

Romer expects that this endeavor will eventuate in the awarding of full university degrees. In fact, such accredited electronic degree programs are already a reality,

and warnings that such programs will radically transform higher education continue to be issued. One serious question, then, is whether in developing distance education we are risking the demise of the university and whether that risk should be of any great concern.

## 2. Will quality be maintained?

Important technologies raise questions concerning quality, cost, and accessibility. In respect to computer technology in education, the emphasis has changed over the decades. The early emphasis was clearly on quality. In particular, increased individualization was seen as the key. It was this goal that drove faculty to explore a variety of computer uses in teaching. The concern for individuality in American education has a long history. Much of this concern is articulated in a 1965 document (A climate for individuality) produced through a collaborative effort of national educational organizations. One theme of this work emphasizes the impact of increasing societal complexity and the structures designed to cope with this complexity.

> Individuality tends to be submerged in gigantic organizations, in chain-belt production, in monolithic economic enterprise, and in the complex cultural interdependencies of our society. Caught in this cultural drift, the schools are veering toward impersonal solutions to vital educational problems. Mass groupings, standard curriculums, texts, and examinations, and standardized institutions are squeezing individuals into a common mold [4] (p. 9).

In an effort to cope with increasing complexity and sheer numbers, standardization ignores the characteristics which differentiate students in terms of their special needs. The simplicity of the one-room school has been replaced by the complexity of rule-governed systems, yet these systems still group students in ways that are blind to crucial individual differences. This quest has found its way to the computer, perhaps the paragon of rule governed systems. Computer-based educational techniques have been heralded as our best hope for individualization. Patrick Suppes, arguably the father of computerized instruction, once likened the promise of computers in education to the one-to-one tutoring which Aristotle provided to Alexander the Great.

Distance education advocates sometimes report increased interaction with their students after introducing e-mail and electronic discussion groups. They question the degree to which traditional classrooms actually support significant student–faculty communication and see increased interaction as a step toward individualization. Critics raise questions about the type of student best suited for distance education courses, particularly since more responsibility is placed on students in distance education. Students with the best chances of succeeding in distance courses are those who are highly-motivated, self-regulating, and perhaps even self-teaching. To the degree that students lack these characteristics, their prospects for failure increase. The question that emerges is whether distance education will increase or decrease individualization and the quality of instruction.

## 3. What is the substance of a college education?

"A Climate for Individuality" makes a crucial distinction between individuality and individual differences. The latter involve specific characteristics related to the learning of particular subject matters. Knowledge of these characteristics contributes to individualizing instruction. Individuality is a more global and subtle aspect of personal individuation. Developing individuality requires maturation as a person. The dichotomy suggested is that between education and training. Critics of distance education contend that this distinction is missing in Governor Romer's concept of the virtual university. A college education is more than skill acquisition, more than the sum of courses taken. A university degree represents more than a certificate of training.

Disagreement over the significance of this distinction is currently fueling a debate in Arizona over a proposal to allow community colleges to offer baccalaureate degrees. Supporters see this as a practitioner's degree based on applied, skill-oriented courses. Opponents argue that obtaining a baccalaureate degree entails a socializing experience based on a more wholistic approach to education.[1] Their view is that higher education provides opportunities, both within and outside of the classroom, for personal and intellectual maturation beyond skill acquisition. This view is expressed well by Susan Saltrick.

> Citizenship is not just about earning a wage; it's about responsible engagement with our social institutions. Education is not just about transmitting job skills; it's about transmitting our humanity to the next generation. The goal of the student should not just be to connect with employers, important as that may be. The goal of learning is also to connect the heart, the mind, the body, and the spirit with the hard-won lessons of our past, with the insistent exigencies of our present, and with our fledgling dreams for the future [6].

Nevertheless, advocates of distance education ask for evidence that such lofty goals are regularly achieved, and/or contend that distance education can also produce personal growth and intellectual maturation. At the very heart of this debate, however, are questions about what defines a higher education, what is worth learning, and what it is to be an educated person.

## 4. Who will control distance education?

Two practical questions of control are paramount here, one concerning the institutions which administer distance education and one concerning the faculty who develop distance courses. The issue of institutional control involves the inevitability of competition and the role of the market in that competition.

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[1] For an account of this dispute, see Ref. [5].

Advocates sometimes speak as if the only competition will be for new markets, mostly students abroad and those employed full time. The role of market demand is seen as a positive force which if necessary will eliminate weaker programs. Critics maintain that distance education is bound to increase institutional competition well beyond disappearing geographic boundaries. Market competition is just as often won by those who make the cheapest and/or the most convenient product as by those who make the highest quality product. The specter of this competition is already apparent in the attitude adopted by many institutions, that distance education must be implemented as a hedge against the possible adoption by their competitors. The ultimate result is that universities will be driven to offering undergraduate distance degrees which offer students less of an education and more of a training experience.

Faculty control is also an issue. Critics ask whether faculty really want to contribute to the devaluation of the undergraduate experience. The issue of ownership of distance courses remains unresolved, yet faculty continue to build the foundation for an enterprise over which they have little power. Faculty should at least be honest with themselves about the fact that the use of distance education courses, once implemented, will be mostly out of their hands. In any event, questions concerning the ultimate control of distance education should be part of any debate over its implementation.

## 5. Will student choice be expanded?

Advocates of distance education believe that one consequence of its implementation is that student choice will be enlarged. Adding distance courses to existing offerings will increase the number of alternatives that students can choose from. Indeed, it will provide at least one alternative to some who at present have none. Students will be able to freely choose between a distance course or one that requires physical attendance, or between a distance degree and attending a residential institution. Critics suspect that eventually choice will be constrained because a few providers will come to own most of the market. Companies such as Microsoft will eventually dominate. Having little competition, the variety of offerings will be constrained. Students will find much less choice than they have today.

## 6. Answering the right questions

The passages above have raised questions concerning the potential risks and rewards of distance education. These questions will be addressed from two perspectives, one which relates distance education to general views of the nature of technology, and one which takes the perspective of faculty who are considering implementing distance courses.

## 6.1. Individuality and individualized instruction

Saltrick's vision of what an education should be stands at the center of any reflection upon the appropriate use of distance learning technologies. This vision is given life primarily by the faculty of educational institutions. It is their personal and professional interaction with students which connects the heart, mind, body, and spirit in the way she describes. Clearly, this enterprise pervades campus life and carries through both in-class and out-of-class endeavors. There is reason to believe both that residential institutions have the sort of impact expected, and that this impact is worthwhile.

For example, Pascarella's review of studies concerning college outcomes concluded that "significant positive associations exist between extent and quality of student–faculty informal contact and students' educational aspirations, their attitude toward college, their academic achievement, intellectual and personal development, and their institutional persistence" [7]. Residential education can thus foster a climate which nurtures maturation and individuality. Whether distance techniques can match or exceed this capacity is yet to be determined. When it comes to individualization of instruction, some prospects for increasing individualization by means of distance education do exist. Certainly, students individualize their own education through their choices, and if their alternatives can be expanded then individualization can be increased.

Nevertheless, this possibility falls far short of the promise of individualization which achieves one-to-one tutoring, and the view taken by "The Climate for Individuality" is critical of even this promise, whether attempted by computer or programmed text. "Individualized instruction methods often provide chiefly for rates of speed appropriate to the individual. This is not unimportant; pace may be highly significant. But speed should not be confused with other subtler aspects of individual difference. In fact, individualized instruction often forces all students through the same doors with a rigidity and an emphasis on conformity that ignores special aptitudes and destroy uniqueness" [4] (p. 11).

This complaint concerns the rules of the program and their insensitivity to special student needs. It should be recognized that this problem is completely independent of computer hardware or the medium chosen to instantiate "the program." The problem is in coming up with a set of rules that will be sufficiently sensitive in terms of student characteristics and sufficiently detailed in terms of responses to those characteristics. The capacity of a medium to store and efficiently execute such rules is of consequence only once the rule set has been formulated. The rules specify the ways in which students vary, how this variation affects learning of particular subject matters, and what ways of addressing these variations best promote learning. Individualization thus requires knowledge of student characteristics and corresponding pedagogical techniques, all of which must be determined empirically.

It must be ascertained which differences matter and which do not. This is no mean task and goes far beyond self-pacing. The reason computer use has made so little progress toward the promise of individualization has little to do with computer technology itself and much more to do with the intricacies of discovering and exploiting

helpful pedagogical categories. It should be clear that distance education in itself adds nothing to this empirical enterprise. "Putting your course on-line" or merely making an existing course available electronically, does nothing to expand the empirical knowledge which founds individualization. Computer use can play some role in the quest for individualization and in determining what rule-governed systems can contribute to that quest. As students use instructional programs, computers can track performance relative to particular learners and methods. But none of this is part of current proposals to deliver courses electronically.

## 6.2. Choice and control

Choice and control are important issues with any new technology. One criticism of modern technology is that it fails to live up to its reputation for increasing human choice. Technology supposedly increases alternatives and thereby expands human choice. The automobile, for example, added another alternative to the choice among walking, cycling, or riding a horse. But eventually, social change, the location of cities, factories, and suburbs, and the evolution of transportation infrastructure have made the automobile the only practical choice for most cases of transportation. To be without an automobile in American society is to be at a distinct disadvantage. Walking, cycling, and riding horses are no longer genuine alternatives, and choice has consequently been restricted.

If we are to develop distance education, we must take care that a similar scenario does not unfold. Cost and convenience must not turn students away from more worthwhile but more demanding educational experiences. The most direct way to avoid this scenario is to make known the value of education in its fullest sense and to thereby bolster its demand by undergraduates. It should be made clear that when it comes to counseling, guidance, mentoring, and the vast array of extracurricular opportunities for learning, these activities cannot be unbundled from the experiences of the classroom.

Faculty must commit themselves to the importance of "informal faculty–student contact" and make that contact worth something. If students continue to complain about being taught by graduate assistants and about professors having more time for research than for students, there is trouble on the horizon. If faculty and their institutions do not take action to enrich faculty–student interaction and extracurricular activities then the fate of higher education may well be captured by the forecasts of Drucker and Noam.

## 6.3. Issues of responsibility

There is a tendency in modern thinking about technology to deny human ability to control technological processes once implemented. Increasingly, contemporary reflection upon modern technology raises questions about its ultimate controllability. Nevertheless, there is something dangerous in the idea that technology has a life of its own and that it is ultimately uncontrollable. That danger resides in an erosion of human responsibility. C.S. Lewis once pointed out that "what we call man's power

over nature turns out to be a power exercised by some men over other men using nature as its instrument" [8]. This statement underscores the role of human responsibility in the development of technology and suggests that the consequences of technology are the product of human action and inaction. Even when technology seems to run amok, there are those whose refusal to act either initiates, magnifies, or continues the adverse consequences.

In the present case, higher education faculty should accept responsibility for the impact of distance learning. Faculty on both sides of the debate bear special responsibilities. Those who introduce distance education courses bear responsibility for seeing that these courses have just the consequences intended. This means empirical evaluation, monitoring, and personal control. In particular, empirical evaluations should be built into implementation plans.

While designing distance versions of existing courses, faculty should introduce pre- and post-tests into their current offerings. These same tests should eventually be administered to distance students. When deemed appropriate, measures of student attitudes and interactivity should be employed in the same manner. It should not be assumed that because some distance courses have been shown to be pedagogically and/or cost effective, that all distance courses are. Equally important, before putting a course on-line, faculty should resolve questions concerning ownership and control. They should take steps to maintain control via copyrights and should endeavor to influence institutional policy as early as possible. Faculty who forecast more harm than good from distance education bear the responsibility of making residential education live up to its traditional accolades. They must confront squarely, Drucker's claims about inordinate increases in cost with little or no increase in quality. They must make the quality of student–faculty interaction, both formal and informal, of unassailable value. If these faculty are correct in their suspicions, then action is imperative. In the face of current conditions, it is no more irresponsible to put courses on line and let the chips fall where they may than it is to mouth the praises of Education and the Academy with no visible changes in behavior.

## 6.4. Distance courses versus distance degrees

The development of undergraduate distance degree programs is at best premature. Not enough is know about the conditions under which individual distance courses will succeed or fail. At worst, development of such programs may undermine the integrity and wider purposes of education. With any new technology the aim should be to discover as soon as possible whether or in what ways its application is worthwhile. This needs to be done in the very early stages while changes are still easy and relatively inexpensive. Problems discovered later in a technology's implementation are much more difficult and expensive to remedy. Technologies become less tractable once intertwined with other technologies and systems. This means that distance courses should be developed in ways that make their strengths and weaknesses clear early on. Empirical tests and monitoring are crucial. It also means staying focused on issues concerning what tasks are better carried out by computer (human devised rules executed at a distance) and what tasks are better carried out in person.

Unfortunately, in the era of the microcomputer, many applications were developed with the promise of eventually addressing such issues, but those promises have gone mostly unfulfilled. At present, distance courses should be explored cautiously and with much scrutiny.[2]

## 7. Some concluding thoughts

Let me conclude this essay with an account of an experience which occurred at the Penn State Conference on education and technology. After the final proceedings, I headed off to take some campus photographs, particularly of the Nittany Lion, a well known statue on the edge of campus. Little did I anticipate what I found there. Two groups were making family portraits while holding children on the lion's head and back. The toddlers were of particular interest as they wore small, dark blue jackets sporting the Penn State insignia. As we waited our turn, the father of one youngster explained to me that this was a yearly tradition and that he had photographs of himself as a child on the lion. Just then, a long white limousine pulled up and out stepped a bride and groom in full wedding regalia along with a professional photographer. The line continued to grow, and I never did get the photograph I wanted, but these events suggested something about traditions, growing to maturity, and the place of education in that process.

First, there certainly will be some demand for distance degrees. Nevertheless, many families are keenly aware that obtaining an education is one aspect of growing up, and that residing at a particular campus with all that this entails, even attending the big game on Saturday, is an experience that transcends generations. Many parents want their children to take part in the same traditions and to face the same challenges that contributed to their own development and individuality.

Institutions of higher education are much more than the information generation and transmission facilities that Noam makes them out to be. Information storage and retrieval may characterize libraries back to the time of Alexandria, but they are poor models of knowledge, learning, and the environments that support them. Universities, in particular, are complex, multidimensional institutions centered around a wide variety of services and functions. They house ethics centers which contract services with hospitals and businesses. They provide consultants to a variety of ongoing enterprises, both public and private. They research and develop particular products and patentable processes. They host conferences, athletic and computer camps, Elderhostel, and such activities as the Special Olympics. What this means is that universities are integrated into local communities and American society in many ways, some as commonplace as being suppliers of athletes to the NFL and NBA. But none of these are as essential to education as is the process by which intellectual develop-

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[2] The general view of technology sketched here is that of Incrementalism. For more on this approach see Refs. [9,10].

ment comes to shape individuality, personal maturation, and an understanding of the world and one's place in it.

It will be unfortunate if this is replaced by something merely of less cost and greater convenience. Nevertheless, as faculty our actions will be telling. In fact, one generation of faculty may be making choices that affect many generations of faculty to come. This is no battle between the Academy and Microsoft or McGraw-Hill. Such companies can achieve little in this arena without the cooperation of at least some faculty, and perhaps the inaction of many. Nor is it a consequence of administrators scheming with politicians. This is a conflict between faculty attitudes toward teaching, technology, their students, and education. The rift is not the same as that separating the two cultures portrayed by C.P. Snow, but it perhaps runs as deep.

The future is always uncertain, and we cannot have complete confidence in the consequences of our choices, but as faculty the choices are mostly ours. In any event, as I strode away from the commotion swirling around the Nittany Lion I had a clear sense that something of value might be threatened, but if in fact it were lost, we would not have far to look for the cause.

## Acknowledgements

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Marvin Croy has been designing and using computer programs to aid in the teaching of logic since his days as a graduate student at Florida State University. It was there that he took his Ph.D. in Philosophy of Science in 1979. He is currently an Associate Professor of Philosophy at the University of North Carolina at Charlotte. His work has mainly addressed the empirical and conceptual problems of using computers to achieve individualization, the design of graphic interfaces, and the general social and ethical issues surrounding the educational use of computers.