

GOING THE DISTANCE IN EDUCATION: TWENTY-FIRST CENTURY IMPERATIVES

Richard Cornell

University of Central Florida, Orlando, USA

Karen Murphy

College of Education, Texas A & M University, USA

Kathy Ingram

Florida State University, Tallahassee, Florida, USA

Keywords: distance education, teacher training, change theory, instructional technology, International Council for Educational Media, learning styles

Contents

1. Introduction
2. Preface: Distance Education and Teacher Training's Global Perspective: From Smoke Signals to Satellite
- 2.1. Executive Summary: Pedagogy through Distance Education by Karen Murphy
3. A few years later a second report saw the light of day (Cornell, R., & Murphy, K. (eds.). (1995). Preface
- 3.1. Executive Summary by Karen Murphy
4. And more recently, in Cornell. R. & Ingram, K. (Eds.) (1997), its preface stated
- 4.1. Executive Summary by Kathy Ingram.
5. Implications for the Future
- 5.1. Paradigms for the New Millennium: How Professors Will Certainly Change!
6. Implications for Taiwan and Other Nations
7. Conclusions
- Appendix
- Acknowledgements
- Glossary
- Bibliography
- Biographical Sketches

Summary

As nations evolve into the next millennium, so too will their levels of sophistication in a variety of areas, not the least of which will be education of their citizenry. As the available array of diverse technology spreads from nations more affluent to those with less, it is critical that unified efforts toward sustaining the opportunity to learn are not diminished. One method bound to expand in scope is teaching at a distance. During the mid-90s, the International Council for Educational Media (ICEM) published a series of reports which examined the use of distance education across many different nations. This article summarizes some of the major findings taken from these reports and examines their significance to those who would plan educational delivery systems for

the coming century.

1. Introduction

Some ten years ago, the following extracted statements were included as preface and executive summary in what would become the first in a series of three reports produced for the International Council for Educational Media (ICEM), a Non-Government Organization (NGO) affiliated with UNESCO: (Farkas, P., Cornell, R., Saar, C. & Armstrong, J. (Eds.) (1993). They will be followed by the prefaces and executive summaries of two subsequent reports on the same topic, all produced within a period of six years. Of significance for the reader will be how different the areas of concern and emphasis are from the first to the third report. These differences reflect the rapidity of change within the area of distance education and training. This report concludes with a summarized article that places future implications into context.

2. Preface: Distance Education and Teacher Training's Global Perspective: From Smoke Signals to Satellite.

This report, three years in the making, faced increasingly the possibility of becoming obsolete before it was published. Comparable vagaries accompany the entire broad spectrum of that which we term "distance education" for, as one technology is adopted; a new one suddenly appears on the horizon to replace it. So much for change....so much for telecommunications rivaling the speed of light!

The intent of this report was to assess the state of distance education internationally, with particular emphasis on teacher education and, more specifically, how pedagogy is delivered at a distance: Clearly a formidable challenge as little proved forthcoming which so narrowly addressed the topic.

Do we conclude that pedagogy at a distance is not being taught to teachers? No.

Do we conclude that pedagogy can easily be taught at a distance? No again.

What we did find was that there are efforts, scattered about the world, wherein *some* attempts at transmitting pedagogical principles are being tried.

A number of the articles contained within this report include such efforts while others opted for alternative means through which they teach their teachers, be they around the corner or across an ocean.

It might well be that the paucity of distance education and pedagogy contributions reflects not an unwillingness to address the issue but rather a more urgent priority of simply getting a system up and running – Maslow's hierarchy with technology-based overtones.

No matter the extent to which pedagogy has been cited as a distance education concern, there remains no doubt that training teachers at a distance will increasingly become a major priority.

In our report title, we append the descriptor "Smoke Signals to Satellite" to reflect a continuum along which we have traveled, if not actually, at least in principle. We must remain cognizant, however, that in some instances the use of a satellite technology base, even into the year 2000 may still remain a financial, logistical, political and philosophical impossibility . . . while the continued use of "smoke signals" may not!

It is a dichotomy, this continuing disparity between those nations that have and others less fortunate, sometimes the latter sharing common borders with the former.

While it is not the primary intent to make this report a geo-political treatise, the ongoing issue of equity of access cannot remain ignored. A number of articles provide sufficient contrast in their contents to illustrate that not all nations are ready to address pedagogy at a distance via technology.

The title of this study is no accident. Even a cursory examination of how teachers have taught through the ages reveals methodologies both diverse and inventive.

In the face of odds which often stunned lesser individuals, teachers have continually sought for the impossible.

Imagine, if you will, what teaching was like in yesteryear. We laud those inventive souls of the past who taught despite having no materials, only rudimentary communication forms, and a public which frequently chastised them for injecting into their teaching the most outrageous "frills" of the day.

We can envision, for example, the dwellers of Cave # 4, headed by a matriarch whose health was quickly failing. Thanks to the discovery of fire and how it might be used, the clan in Cave 4 sent up distress signals via smoke to their cousins in Cave #5, some five miles distant. Within half a day the Cave 5 medicine man arrived and saved the day.

Yes, smoke had been found to have uses far beyond deterring a rampaging tiger -- it could be used to cook, to cure, to rid the cave of insects, and now to communicate. Since that time, warriors have employed smoke for military reasons and, where other information had to be transmitted, smoke signals also saved the day.

It was that very same smoke-based communications system that, when learned by the young of the tribe, allowed them to understand words, numbers, directions, and events. The oldest taught the youngest and the technological revolution in distance education had begun.

In other early civilizations the sound of drumbeats served to warn, to inform, and to place entire tribes on alert. As with the encoded smoke of an earlier (and later) time, these early audio signals taught the tribe basic communication skills.

It did not take too long to add yet another piece of the technological puzzle to the mix -- light as a communication medium. Bits of glass or other shiny objects, reflected from one hill to the next, began the advent of true multi-media for now they had it all, smoke, sound, and light! There seemed no end in sight as to the possibilities for communicating

across the miles.

There is within us all, then, this heritage from the past through which our ancestors around the globe have fashioned one or another means through which to communicate from a distance. Our legacy humbles.

Within our contemporary educational environments, there are still those in remote societies who speak to one another across the miles using many of these selfsame tools, despite McLuhan's "global village" affording almost total involvement.

We label these sites as being "third world" or some other descriptor and all too often rest content within ourselves that we have things much better. There are those, however, who might question what is truly better -- it is sufficient to acknowledge that such conditions persist.

The intent of this study is to assess the state of things in the 1990s with regard to distance education as applied to teacher training. Given the rapidity of technological change, the reference to what is "now" must be provided with the caveat of recency, rather than immediacy. One has but to scan the paper, read a journal, or watch the evening news to find this or that innovation being employed in the classroom.

Beyond doubt, the present is the age of the computer but ... is it the computer we knew, the one we know now, or one that, within comparative milliseconds in time, will afford even more mysterious wonders for our students?

What will be the relationship between the computer and how students learn at a distance? What new information will teachers need in order to keep up with these rapidly changing methodologies? To what extent are these technologies being evaluated? Are we, in fact, having a two hundred mile an hour romance with a technology base, which is, even now, accelerating to mach-1? Where are those souls in the educational wilderness who would demand that "high touch" (as argued by John Naisbitt in *Megatrends* in 1982) be an equal partner in the high tech rush toward the future?

We raise the questions because there are implications that lie well beyond the obvious. Inherent in many of the case studies from around the globe are issues which had to be faced, funds which had to be acquired, attitudes which had to be dispelled or changed, and amongst it all, learners who had to be taught.

We have focused, for the most part, on the issue of teacher education and how those who teach cannot always be reached by conventional methods. Distance education seemed to be the chosen method of connecting teachers to the content they teach..

In this study, the reader will find a wide range of technologies being used, varying cultural emphases, and, most certainly, differing settings.

It is not unusual that radio should still be a major means through which distance education is transmitted in some parts of the world. Radio is, after all, both widely

available and comparatively cheap. Increasingly, and especially in the more affluent nations, computers and all that accompany them are the rage. Some tie directly into existing telephone systems, others communicate via modem and satellite while others are tied into a LAN (Local Area Network). The future, especially with the emphasis on multi-media systems, offers a tempting vision of what will doubtless become an obsession for many, both teachers as well as their students.

What is to become, however, of the teachers and their students who exist in less-chance areas of our world? Are there, contained within this study, some ideas which could apply easily and near-equally to these populations? If so, who will take the leadership in making such an initiative become reality? Will it be a reader of this report? We hope that such is the case.

Richard A. Cornell United States Member to ICEM Orlando, Florida, USA
October 24, 1993, Barcelona, Catalonia, Spain

2.1. Executive Summary: Pedagogy through Distance Education by Karen Murphy

The articles in this report represent a diverse collection of pedagogical issues involved in teacher training at a distance in countries throughout the world. Distance education offers pre-service and in-service teachers with both skills training and an opportunity to complete teacher training programs or degrees. As will be evident from the articles included in this report, the proliferation of teacher training programs via distance education is limited neither to developing countries nor to more developed countries. Nor are the programs limited to specific delivery methods to reach teachers in their homes or schools. This proliferation is the result of rapidly developing telecommunications technologies coupled with an increasing awareness of the ways to use the technologies for teacher training.

2.1.1. Objectives

Teacher training programs have resulted from political factors and social demands to reach the masses of uneducated or illiterate people or to provide education to disadvantaged groups. Continued high birth rates, coupled with a rise in human expectations for schooling for children, have created the need to train teachers by distance education in developing countries. Others suggest that societies should create teacher-training programs based on the nature of student populations. These programs should allow for upgrading and certification of teachers in their own environments.

Teachers who receive pre-service or in-service training at a distance from the instructional site generally do so for two possible purposes. They may complete course work in competence areas or pedagogical techniques through distance education, or they may use distance education technologies to communicate with and receive support from supervisors or other teachers. In response to this first purpose, Coldevin (1990) identifies three types of teacher training programs at a distance.

The first of these teacher-training programs that Coldevin describes—teacher certification programs and/or degree programs offered through distance teaching

universities—are found worldwide. Brahmawong's article describes the distance education program in Thailand offered through Sukhothai Thammathirat Open University. More than 40,000 teachers in Thailand have upgraded their professional competencies through correspondence and broadcast radio and television. Similarly, Carmo reports how teachers in Portugal have been able to obtain in-service teacher training through the Portuguese Open University (Universidade Aberta Portugal) since its inception in 1990. The article by Demiray, McIsaac, and Yangin portrays two in-service programs offered through Anadolu University's Open Education Faculty in Turkey.

The two programs are a Pre-Bachelor Certificate Program, which 130,000 primary school teachers completed, and a University Degree Completion Program offered to 54,000 secondary school teachers. Teachers in the Turkish programs take coursework from their homes through specially designed printed materials supplemented by television and radio broadcasts. (McGreal's article mentions Athabasca University, a distance teaching university in Alberta, Canada, which delivers programs to teachers primarily by correspondence across western Canada.)

The second form of teacher training described by Coldevin consists of distance education operations offered through traditional universities. In the U.S., Knapczyk describes how Indiana University uses a variety of technologies to create diversified and flexible in-service staff development programs in rural schools. Similarly, Merkley and Hoy describe Iowa State University satellite program "Teachers on Television," which enables large numbers of pre-service teachers to observe real classrooms in diverse settings. The University of the West Indies (UWIDITE), on the other hand, is representative of other island nations that share characteristics of physical isolation, small populations, and limited economies.

UWIDITE provides in-service training to teachers at seven sites in six countries primarily through audio teleconferencing; audiographic conferencing is also used on a limited scale. McGreal's article describes how a consortium of five universities in western Canada delivers a post-graduate certificate program via correspondence, audio conferencing, and computer-mediated communication.

The third form of teacher training is a "sandwich program," which Coldevin (1990) describes as an alteration between campus-based courses with distance education hands-on training while teaching in the field. Johnsen's article is an example of the sandwich program which occurs in Iceland, where pre-service teachers first gather in a boarding school during the summer and then have hands-on training in their schools. During their practice teaching experience, the student teachers communicate with each other and with their supervisor by telephone. Another example is a teacher training program for refugee primary schools in Somalia, which involves an initial "crash course" on basic teaching skills followed by on-the-job training via distance education for primary school leavers. The British Open University offers degree programs to teachers through a combination of correspondence, radio and television broadcasts, and residential programs and tutorials.

In addition to the three forms of teacher training programs at a distance, teachers

communicate with and receive support from supervisors or other teachers through distance education. The distance education technologies used for this purpose typically are interactive, enabling teachers to give and receive moral and emotional support. Johnsen found that the Icelandic student teachers found the telephone a critical link with other student teachers, resulting in the emergence of "telephone -mothers." Computer-mediated communication (CMC) is increasingly used to provide a social context and help reduce the isolation that many novice teachers feel. The Beginning Teachers Computer Network, at Harvard's Teacher Education Program, for example, supports teaching and encourages professional growth of first-year teachers across the U.S.

-
-
-

TO ACCESS ALL THE 67 PAGES OF THIS CHAPTER,
Visit: <http://www.eolss.net/Eolss-sampleAllChapter.aspx>

Bibliography

Beals, D.E. (1991). Computer-mediated communication among beginning teachers. *T.H.E. Journal*, 8(9) 74-77.

Bonham, L.A., Cifuentes, L., & Murphy, K.L. (1995). Constructing cultures in distance education. *Technology and Teacher Education Annual 1995*, Proceedings of the Annual Meeting of the Society for Information Technology and Teacher Education, pp. 614-617. Charlottesville, VA: Association for the Advancement of Computers in Education.

Branch, R. M., and Minor, B. B. with Ely, D. P. (1997). Technology is the answer! But what was the question? *Educational Media and Technology Yearbook*, Volume 22, pp.102-108. Englewood, Colorado: Libraries Unlimited, Inc.[This is part of an annual series of reports published in collaboration with the Association for Educational Communications and Technology.]

Chu, C-N, (1998). *The Asian Mind Game: A Westerner's Survival Manual*. St. Ives, NSW Australia. [This book is "must reading" for anyone wishing to conduct business in Asia.]

Coldevin, G. (1990). Teacher training through distance education: A regional update of Africa and Asia. In M. Croft, I. Mugridge, J.S. Daniel, & A. Hershfield (Eds.), *Distance education development and access [conference proceedings]* (pp. 113- 116). Caracas: International Council for Distance Education.

Cornell, R.A. (1999). Paradigms for the new millennium: How professors will certainly change! *Educational Media International*, 36(2), 89-96.

Cornell, R.A. and Ingram, K. (1997). *An International Survey of Distance Education and Learning: From Smoke Signals to Satellite III*, 135 pp. Berlin, Germany: International Council for Educational Media and Orlando, FL: University of Central Florida. [This is the third of three reports featuring distance education case studies from six different nations].

Cornell, R.A. & Murphy, K. (1996). *An International Survey of Distance Education and Teacher Training: From Smoke Signals to Satellite II*, 218 pp. Mainz, Germany: International Council for

Educational Media & Orlando, FL: University of Central Florida. [This is the second of three reports featuring distance education case studies from eleven different nations].

Dziuban, C.D. & Moskal, P. D. (1998). *What the research says...about teaching and learning on-line*. Orlando, FL: University of Central Florida, Distributed Learning Evaluation Impact. [This is part of an ongoing series of research papers issued by Dr. Dziuban and his associates.]

Edupage (1998). Gigamachines by the millennium. Excerpted from *The Financial Times*. ITFORUM@UGA.EDU, September 25.

Farkas, P., Cornell, R., Saar, C. & Armstrong, J. (Eds.) (1993). *An International Survey of Distance Education and Teacher Training: From Smoke Signals to Satellite*, 123 pp. Paris: International Council for Educational Media and Orlando, FL: University of Central Florida. [This is the first of a series of three reports featuring distance education case studies from ten different nations].

Green, K.C. (1997). The Campus Computing Project. *More Technology in the Syllabus, More Campuses Impose IT Requirements and Student Fees* Encino, CA [This is an annual report to the nation.]

Harry, K. (1982). The Open University, United Kingdom. In G. Rumble & K. Harry (Eds.), *The Distance Teaching Universities*, (pp. 167-186). London: Croom Helm.

Havelock, R.G. & Zlotolow, S. (1995). *The Change Agent's Guide*. (2nd edition) Englewood Cliffs, NJ: Educational Technology Publications, Inc.

Hibbard, J. (1998). CMP Net The Technology Network. *The Learning Revolution*. <http://techweb.cmp.com/iw/672/72iurev.htm>

Hillman, D.C.A., D.J. Willis, and C.N. Gunawardena. (1994). Learner-interface interaction in distance education: An extension of contemporary models and strategies for practitioners. *The American Journal of Distance Education* 8(2), 30-42.

Kema, J., A. Kass & C. Riesbeck. (1998). Using information technologies to train the federal workforce: The need for new educational paradigms and tools. A White Paper. Evanston, IL: *The National Economic Council and Office of Science and Technology Policy*, Northwestern University.

Long, W.A. Jr. (1985). *The practitioner and adolescent medicine. Seminars in Adolescent Medicine*. 1,85-90.

Lowry, D. (1985). *True Colors*. Laguna Beach, CA: Communications Companies International

McGrath, D., Thurston, L.P., & McLellan, H. (1990 October). Training rural teachers in computer education: An evaluation of the distance learning methods. In J. Ohler (Ed.), *The On-line Journal of Distance Education and Communication*, 4(2).

McKenzie, J. (1998). Forming an information literate school. *From Now On: The Educational Technology Journal*. [Http://fromnowon.org/sep98.html](http://fromnowon.org/sep98.html)

Mood, T. A. (1995). *Distance Education, An Annotated Bibliograph*. Englewood, Colorado: Libraries Unlimited, Inc.

Moore, M. (1989). Editorial: Three types of interaction. *American Journal of Distance Education*, 3(2), 1-6.

Naisbitt, J. (1982). *Megatrends: Ten new directions transforming our lives*. New York: Warner Brothers

Perraton, H. (Ed.). (1993). *Distance Education for Teacher Training*. London & NY: Routledge.

Pritchett, P. (1994). *New Work Habits for a Radically Changing World*. Dallas, TX: Pritchett & Associates, Inc.

Rogers, E.M. (1983). *Diffusion of Innovations*, (3rd edition) New York: The Free Press, A Division of Macmillan Publishing Co., Inc.

Said, A.H. (1990). Distance education in Somalia: An emergency program of teacher training. In M. Croft, I. Mugridge, J.S. Daniel, & A. Hershfield (Eds.), *Distance Education Development and Access* [conference proceedings] (pp. 117-120). Caracas: International Council for Distance Education.

Schwartz, P. (1993). Shock wave (Anti) warrior. *Wired* November '93.
[Http://www.wired.com/wired/1.5/features/toffler.html](http://www.wired.com/wired/1.5/features/toffler.html) Stealth Productions.

Takakuwa, Y. (1998). *On the Promotion System of the Utilization and Application of Educational Media in Regions Responding to the Changing Society*. Tokyo: Japan Audiovisual Education Association.

Viadero, D. (1998). Education Week on the Web. *A Tool for Learning*.
[Http://www.edweek.org/sreports/tc/class/cl-n.htm](http://www.edweek.org/sreports/tc/class/cl-n.htm)

Biographical Sketches

Dr. Richard Cornell is Professor of Instructional Systems at the University of Central Florida in Orlando. He is the President of the International Council for Educational Media (ICEM). A former elementary teacher in the public schools he took his first higher education position at the University of South Florida in 1963 as Coordinator of Instructional Materials and later began full time teaching within their College of Education in the area of media and library science.

In 1966 he was Associate Director of the Media Project within the American Association of Colleges for Teacher Education. He assisted in the design, production, and implementation of workshops for university teacher education professors in which the goal was to encourage the participants to adapt the emerging technologies within their instruction. During this period he was assigned to produce films, filmstrips and slides depicting the overall coverage of life in several East African nations.

In 1968 he was named Director of Instructional Media at Florida Technological University (since renamed the University of Central Florida) in Orlando. Aside from an eighteen month period as a Visiting Director of the Learning Resources Centre at the Riverina College of Advanced Education in New South Wales, Australia, he has been at his current institution ever since.

He is a former President of the International Division of the Association for Educational Communications and Technology (AECT) in the United States, and a Past President of the Australian-based Computer Pals Across the World (CPAW). In 1989, he received one of nine worldwide Lindbergh Awards given to assist in his research related to the measurement of pilot fatigue on board long-duration night flights made by commercial airlines. He is also a former NASA Summer Scholar.

Dr. Cornell has presented in more than 40 countries and travels the world recruiting students and to participate in numerous international conferences. His work in Taiwan and within the Pacific Rim is well known and he is a frequent speaker in that part of the world. He is a firm believer in the sustainability, as well as the worth, of using technology in instruction but above all it is the inclusion of a "high touch" interface that he holds most important. His e-mail address is: cornell@mail.ucf.edu

Dr. Karen L. Murphy is an Assistant Professor of educational technology and distance learning in the College of Education at Texas A&M University. Karen was a classroom teacher for 17 years in the San Francisco Bay Area, Turkey, and Cyprus. She recently served as a consultant for the Turkish National Education Development Project in the area of educational curriculum reform, with the Ministry of National Education (funded by the World Bank). She held administrative positions in distance learning at the University of Wyoming and Kansas State University. She was the recipient of a Fullbright-Hays fellowship to conduct her doctoral research on Turkey's Open Education Faculty. She has published widely on motivational and cross-cultural aspects of distance education and telecommunications. She is Co-editor of two of the three reports produced by ICEM. Her e-mail address is: kmurphy@tamu.edu

Kathy Ingram is a graduate of the Instructional Systems master's degree program at the University of Central Florida in Orlando. While there she worked in the office of the Vice President for Information Technology where she assisted faculty in web-based course revision tasks. She is a member of the Association for Educational Communications and Technology as well as its Central Florida Chapter. She is currently enrolled in the Ph.D. program in Instructional Systems at Florida State University in Tallahassee, Florida.

UNESCO – EOLSS
SAMPLE CHAPTERS