

# Some Historical Perspectives on the Instructional Technology Field

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I have been asked to give a brief historical overview of developments in the field of educational technology. I assume I was chosen for this task in part because of my long involvement in the field. My work in education and media technology spans nearly 50 years. During those 50 years I have been involved with projects in a wide variety of public school, university, and military settings. I suppose this qualifies me to provide a personal perspective on the history of the field. Some have even referred to me as "history personified."

## Nature of the Problem

In education, as in most other human endeavors, lengthy experience does not necessarily bring about greater functional knowledge or improved performance. If you are not changing and adapting to new conditions and needs as time goes on, you're merely perfecting your old bad habits—and congealing the ideas that go with them.

To no small extent this is the problem today with education generally and with higher education in particular. It is also a significant part of our problem in educational technology. I think Bob Heinich's (1984) insightful and penetrating article on the "Proper Study of Instructional Technology" analyzes the "guts" of the problem. Unlike many scholarly critics, he suggests some useful directions in which to move: (a) shifting the intellectual base of instructional technology from education to technology, (b) moving from experimental to field based, naturalistic studies, and (c) studying educational institutions as complex organizations whose policies are amenable to inquiry and eventual change.

## The Michigan State Experience

The following experience illustrates Heinich's first suggestion. In the early 50's I was invited to join the faculty of Michigan State University. The university administration was already well aware of the need to bring about fundamental changes. I came in as an Associate Professor of Education with the understanding that I would develop an academic program in audiovisual materials and methods. Central administration, aware of the need for change, provided us the freedom and financial backing needed to develop both service and academic programs with an eye to the future. As our service programs increased, new department heads were brought in with the central administration providing the budget for most of these positions.

We had a great "crew" and must have done some things right, for we had excellent relations with most departments and faculty across campus, as well as with central administration. It was nonetheless electrifying to hear President John Hannah, in his State of the University address to the faculty in March 1961, state as part of a seven-point program, that:

It is proposed to put to use discoveries already made concerning the learning process itself, and to stimulate further research, through the establishment of an Instructional Development Service to include and encourage the use of closed circuit television, film, teaching machines, programmed studies, and other aids.

And further,

That the Board of Trustees and officers allocate the financial resources of the University so as to support and encourage those colleges and departments actively engaging in the process of re-designing their programs in keeping with the overall development

framework. (Davis, Abedor, Allan, & Witt, 1976, pp. 7-8).

This, bluntly interpreted, was to say (as he did), "We've got \$200,000 for next year that I'm recommending to the Board be allocated only to those departments and colleges who demonstrate their willingness to 'move' on this program!"

There was much more to this development program than media alone and, in the beginning, as you can guess, there was plenty of resistance from faculty. Parenthetically, I would like to emphasize that I am not interested in simply touting Michigan State University, even though it was unquestionably one of the "garden spots" of that time with respect to bringing about significant change in higher education. I am only using it as an illustration of two important axioms of administrative leadership:

1. To bring about significant change, *top administrative leadership* is, without question, the most powerful single influence that can be brought to bear; and
2. *Money talks!* It is the one ingredient in the change formula that all professors, department heads, and deans can understand, regardless of their views on the proposed changes themselves.

We could elaborate more on this development program by describing (a) how we won faculty support, (b) the 400 plus projects funded over the 10-year period from 1964-74, (c) the impact of the development projects on the university as a whole, (d) what happened to the development program after its initial surge and after key personnel left the university, and (e) where the program stands today. For those who want more details about the Michigan State experiences, see Dietrich and Johnson (1967) or Gustafson and Schuller (1984).

## The University Consortium for Instructional Development and Technology

There is another fundamental element to discuss in this historical overview, and that is the University Consortium for Instructional Development and Technology (UCIDT) which generated this conference. The Consortium came about initially some 21 years ago through the efforts of Jim Finn, Don Ely, and myself. We met at conventions and other meetings to discuss ways we might benefit each other's programs. Ideas which were considered included exchanging faculty and graduate students and joining forces to secure funded projects of mutual interest.

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It was the latter idea that suddenly jelled. One afternoon in Washington D.C., Jim Finn was in Don Bigelow's office in the U.S. Office of Education, proposing special media institutes for college and university professors in academic areas such as history, geography, mathematics, and English. Because prospective teachers, as well as practicing teachers, take academic courses in their substantive degree areas, the hypothesis was that if college professors could be taught to use the new media, instruction in university classes would be improved *and* effective teaching techniques would be transferred to the public school teachers. The project was quickly approved under Title 13 of the National Defense Education Act and put into effect by the Consortium. Jim Finn and his staff at the University of Southern California headed the project, which was called the National Special Media Institutes (NSMI).

The Teaching Research Division of the Oregon State System of Higher Education was invited to join the Consortium. This enabled NSMI to cover more subject areas. Over the next few years the project flourished. Some 600

college and university faculty from institutions across the United States received five days of intensive training in the effective use of new instructional media available in their subject areas. If faculty enthusiasm was any indicator, the special media institutes were highly successful.

Additionally, the U.S. Office of Education commissioned a group of prominent university academicians to evaluate the overall impact of the NSMI project on instruction in the various subject areas addressed in the Institutes. Results showed that, while the program was effective in promoting the use of media in university courses, it was disappointing in terms of the overall im-

pact on public school instruction in those subject areas.

Unfortunately (and this is an important historic factor to remember) funds were not provided for thorough and systematic evaluation or follow-up on this project. Substantial final reports were written, but there was little evidence of either short or long term benefits derived from the heavy federal expenditures. The final reports gathered dust on the Office of Education shelves and were seldom referred to again.

Now, if I may digress for a moment, there was nothing new about that situation. I had been involved in getting media equipment included in the provisions of the old National Defense Education Act. In 1960, as President of AECT's Division of Audio-Visual Instruction, I made a plea in my "Farewell Address" to the convention for the conscientious development of evidence that federal monies had accomplished something for schools (besides having greatly improved business for materials and equipment producers and distributors). Not only was useful research evidence lacking, as it still is, but also missing was qualitative evidence such as opinion polls and testimonials from teachers, ad-

ministrators, students, and parents on the benefits of having media materials and equipment.

The materials bonanza continued for some years because the National Audio-Visual Association people, representing the production and equipment industries, were good lobbyists, as were the library people. But the lack of adequate comparable efforts by AECT as well as most other educational organizations led to the undercutting and eventual demise of many once flourishing federal support programs for education.

This loss of federal support points to two thoughts for our purposes: (a) a need for instructional technology people to be able to effectively demonstrate the importance of what they are doing, and (b) the need for administrators of instructional technology to be trained in the techniques and uses of *evaluation* and *persuasion*. The use of this evidence and those techniques could be effectively applied on the local level to obtain adequate budgets and new positions. (Note that this merely enables one to perform better within the confines and restraints of traditional institutional relationships.)

## The UCIDT Instructional Development Institutes Program

Jim Finn's untimely death in 1969 was a great loss not only to his host of students, friends, and colleagues but to the Consortium as well. Nonetheless, a solid foundation had been built and enough energy and momentum generated to keep the "show on the road," as he would have expected us to do.

Work had already begun in the early 60's on the development of instructional systems based on Charlie Hoban's presentation at Lake Okoboji on the application of engineering systems principles to audiovisual communications. In 1962, Michigan State secured a U.S. Office of Education contract to explore, with three other universities, possible patterns of application of the systems approach to instruction. I brought in Dr. John Barson from Wayne University to head up the project. Syracuse University, the University of Colorado and San Francisco State College also cooperated with us in the study. Together we explored and tested certain assumptions about a model developed at Michigan State for systematic development of college level courses. While the model itself

proved deficient in certain respects, the project team learned how to use the model to get desirable results. Their findings, in part, were a set of 18 heuristics. These, in effect, were practical suggestions from "action research" to guide future action in developing effective instructional systems.

### The Behavioral Science Seminars

Another historic benchmark in which the Consortium played a role was the Behavioral Science Seminars. These were also sponsored by the U.S. Office of Education and were coordinated by the National Special Media Institutes through the Teaching Research Division of the Oregon State System of Higher Education during the late 1960's. These seminars were prompted initially by Jim Finn's conviction of the need for new ideas in the growing field of instructional technology. The behavioral sciences were selected as the substantive areas most likely to assist instructional technology people in the transition from an audio-visual product orientation to the process emphasis required in systems analysis and applications to instruction.

Leading behavioral scientists (primarily psychologists) from around the nation who had a strong interest in instruction, were commissioned to prepare papers which they presented at seminars of selected instructional technologists. The first seminar was devoted to the cognitive area, the second to the affective area, and the third to the psychomotor area of learning. From the subsequent discussion, questions, suggestions, and criticisms received, the specialists went home and revised their papers for publication in a series of three books entitled *Contributions of Behavioral Science to Instructional Technology*: 1) *The Cognitive Domain*, 2) *The Affective Domain*, and 3) *The Psychomotor Domain*.

These are all out of print now, but probably can still be found in many of your libraries or through the ERIC center at Syracuse University. When studying them for purposes of preparing this paper, I was impressed with the fact that much of their content is as valid and useful today as when it was written.

### The Instructional Development Institute Program

The real nation-wide push came when the Consortium received a substantial U.S. Office of Education grant through

Michigan State University in 1969 to create Instructional Development Institutes (IDI's) for public school personnel. MSU's Education Development Program, begun in 1964, had greatly enhanced instructional development efforts through the addition of staff and the infusion of dollars for experimental programs. This was a persuasive factor in getting the grant. Many participants in this conference were involved as staff members, graduate students, or participants. Jack Edling, who directed the project for the Consortium, and his staff from the Teaching Research Division of the Oregon State System of Higher Education first did a thorough review of the literature on system approaches and design, and then proposed several possi-

first-hand experience on "the firing line" of the Institutes. In addition, much of the Institute material was used in graduate courses in the Consortium and other institutions. The combined effect of the experience, and the use of the materials helped bring about constructive changes in instructional technology programs across the country.

Subsequently, the Institutes were modified and introduced to the Philippines and other southeast Asian countries, the Middle East, and Europe. Modifications ranged from an initial emphasis on educational institutions to personnel training programs in religion, government, business, industry, and community development. I might add that the unique program developed in

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ble approaches. From this came a model and a plan of action. All four Consortium institutions assumed part of the massive job of developing print and media materials for the Institutes along with manuals and evaluation instruments. It was during this period that the Consortium changed its name to the University Consortium for Instructional Development and Technology.<sup>1</sup>

The IDI's were designed to train teams of administrators, teachers, curriculum and other specialists in the principles and operation of instructional development programs for the public schools. After tryouts and revisions in the Detroit, Phoenix, Atlanta, and St. Paul school systems, and after the selection and training of teams in some 20 states, 350 to 400 IDI's were conducted in school systems across the United States from 1971-1974. The impact both on trainees and trainers was indeed substantial.

It was again unfortunate that cutbacks in funding eliminated much of the follow-up, refresher and additional training, and summative evaluation that had been planned. Residual benefits, however, were extensive. Large numbers of staff members and graduate students across the nation received invaluable

the Southeast Asia Interdisciplinary Development Institute in Manila by Dr. Jacqueline Blondin, one of our graduate students at MSU, proved to be an excellent example of what can be accomplished in an environment unhampered by traditional institutional constraints.

### Summary

OK! So what does this brief analysis of a slice of historical events in our field suggest? Quite clearly, a great deal has been accomplished. There's been no shortage of effort, energy, or intelligence applied. And the results, by and large, have been good—many of them, in fact, outstanding. So why don't more people love and support us? Why have we lost our influence in education and in agencies that support education projects?

What needs to be done is the classic first step in instructional or organizational development, namely, analysis of the problem. Because if you don't ask the right questions, the answers you get aren't likely to solve the problem. Even with a sound and thorough analysis of the problem, you've just made a good start on what has to be a tough, rigorous process to find solutions that will work in your individual situations.

No one has all the answers. If they did, they would have packaged and handed them to you before now. There are, though, some sound general principles to which I've referred, such as (a) the constant need for evaluation and follow-up, (b) the need for communication and interpersonal communication skills, and (c) the need for continuing attention to building and maintaining administrative support. Because no two institutions are identical, the task is at best complex and difficult. In technology we're in the "change" business, and as Machiavelli said a long time ago in a simpler context than ours,

It must be considered that there is nothing more difficult to carry out

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nor more doubtful of success nor more dangerous to handle than to initiate a new order of things, for the reformer has enemies in all of those who profit from the old and only lukewarm defenders in all of those who would profit by the new.

Somehow, I suspect the fact that we are here in Indiana at our own expense and over a spring weekend suggests that we are dedicated to the business we're in, well aware of its challenges, and willing, if not eager, to face up to them. This bodes well for the future of our profession and for the learners whose cause it is designed to serve. †

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†Indiana University joined the Consortium in 1971 and participated actively from that point forward. Florida State University became a member in 1978, Arizona State University in 1982, and the University of Georgia in 1984.