

We Must Harness Technology

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THE terms "educational technology," "systems approach," "computer-assisted instruction," and "teaching machines" invoke in the minds of many educators a cold and mechanistic approach to education, leaving little room for human values. At first glance, these are curious terms which seem woefully misplaced in an educational process where the emphasis should be on the growth of human beings and not on the proliferation of machines.

"Educational technology," however, has a much broader meaning than the term connotes. It refers not only to hardware and software but also to the overall process whereby the most efficient use of all resources for learning—both human and material—is made in a deliberate effort to match scarce resources to basic educational needs. When resources are combined into a system, the process becomes instead a commonsense approach to achieving a much-needed balance among the various elements of the teaching-learning process.

Increasingly, teaching is becoming a shared responsibility—a team effort involving generalists, specialists, auxiliary personnel, and resource materials and media. Sometimes these can be made available to classrooms in person; other times they can be brought to classrooms through electronic means.

As a diagnostician of the learning situation, the teacher more and more emerges as a general practitioner who knows when to send the learner to a particular resource for help, or when to send him to a specialist in a particular learning area. The teacher's role today is emerging to be not wholly unlike that of the internist who diagnoses a patient's medical situation and prescribes the help of a specialist where needed. The contribution of this specialist, in the case of the classroom, can be on tape stored in a central data resource bank, or it can be on TV at a given time, or it might even be found between the covers of a book.

Whatever the situation, one thing seems clear: the teacher no longer needs to be the mediator of *all* learning in the classroom! Children can, and do, learn through other resources directly. The teacher should have the right, however, to

say what parts of the curriculum should be mediated and what parts should not be mediated. Without this power, his role as diagnostician will be severely handicapped and even vitiated.

Admittedly, there exists in some quarters an uneasiness—and not without justification—that decision making with respect to the design and role of learning systems or packages will be gradually vested in a master educational engineer who is seemingly all-wise and omnipotent and who decides, in his great wisdom, what part (if any) the teacher will play in the system at any given time. Under this arrangement, the teacher becomes a monitor, or a cog in the system's wheel, with his own freedom of choice and initiative divested. When this happens the teacher becomes "programmed" every bit as much as the computer! Fortunately, this need *not* be the shape of things to come!

A systems approach, properly conceived, can—and *must*—provide ample opportunities for decision making on the part of both the teacher and learner to ensure that each develops to his full potential.

Role of ASCD

What role should ASCD play in the rapidly mushrooming fields of educational technology and telecommunications? Should it merely "sit in judgment," remain neutral, or become centrally involved in the national forums which are likely to set the course and direction of education in the future? In my opinion, ASCD needs to take a much more active and dynamic leadership role in these discussions than it has taken in the past. Over the years ASCD has unintentionally but consistently developed a seeming image in the media field which might be characterized as pro-book, anti-media, reluctant dragon, and advocate of the status quo. While this may not be a fair description of ASCD's true nature, the feeling does exist among far too many educators that by and large ASCD members have not taken electronic media—as they have taken the print media—as serious partners in their instructional endeavors. They all too often have tended to "tolerate" these developments or look at them with raised eyebrows. ASCD's position on media, nowhere stated that I can find, has tended to leave the impression of reaction rather than action. In my judgment, the organization needs to become more of a participant, rather than a spectator, in the nationwide dialogue which is under way seeking to find ways in which technology might be harnessed to help solve some of the gigantic problems facing education in 1968 and in the years ahead. At the recent Williamsburg conference on the International Crisis in Education, this dialogue was extended worldwide and was sparked by the President himself.

On the plus side of the ledger, there are some hopeful signs on the horizon at long last that indicate that ASCD is beginning "to move" and to exert leadership in this area. The past year has uncovered some important steps toward counteracting the image which had become ingrained through the years. The Educational Media Commission of ASCD has recently been formed and is holding a national conference on Simulation in San Diego in April 1968. The national ASCD con-

vention program in Atlantic City in March featured a state-of-the-art general session on communications technology. A special issue of *Educational Leadership* has been devoted to media and materials. The Executive Secretary attended a national seminar on televised instruction and one on satellite communication. An increasing number of curriculum leaders are also engaged in innovative Title III projects using media intensively. These are welcome building blocks for the future course of the Association and are to be heartily commended. Much more, however, needs to be done.

Specifically, I would recommend that the Association take the following steps which should propel it into effective action:

1. ASCD should immediately formulate a clear-cut, forceful policy statement in regard to the use of educational technology, which hopefully will be positive and supportive but which would spell out the conditions for its successful use and implementation in school programs.

2. ASCD should join and bring to existing national and international task forces its insights in the discussion and resolution of such problems as—

- . . . education's requirements for satellite space
- . . . the effects of proposed copyright law revision legislation on the use of materials in classrooms and in libraries, and also by individual learners in independent learning situations
- . . . the use of mass media for literacy training and adult education in underdeveloped areas of our nation and of the world
- . . . the use of media to build professional competencies of teachers and supervisors and to train paraprofessionals
- . . . the exchange and sharing of resources and data between institutions of higher education, public school systems, and community service agencies (libraries, hospitals, fire, and police)
- . . . the shape and future direction of telecommunications in American education.

These are problems which require the best thinking of all persons in instructional leadership.

Although ASCD is a member of the Educational Media Council, it has not participated actively, as have 35 other professional organizations, in the important work of the Ad Hoc Committee (of Educational Organizations) on Copyright Law Revision. This committee has served as an ecumenical council for the educational community before the Congress and has been working toward enactment of copyright legislation which will strike a fair balance between the rights of authors and of users of copyrighted materials.

3. ASCD should testify before Congressional committees and other federal bodies on legislation involving new media so that ASCD's hopes and concerns might be known from the outset. Only by doing this can ASCD help to bring about legislation reflecting the kinds of concerns for children which are essential. In recent months and years ASCD has been strangely silent on such crucial

educational legislation as the following (along with a host of other pieces of historic legislation):

- . . . Copyright Law Revision
- . . . Public Broadcasting Act of 1967 (particularly Title III which will likely determine the future of instructional broadcasting)
- . . . The National Commission on New Technological Uses of Copyrighted Works
- . . . The Networks for Knowledge Act of 1968
- . . . Various proposals submitted to the Federal Communications Commission on satellite communications by the Ford Foundation, the Communications Satellite Corporation, Columbia Broadcasting System, American Telephone and Telegraph Company.

4. ASCD members should become maximally involved in the development of program materials for each of the new technologies, ranging from 8mm film materials to computers and eventually satellite communication. With hardware mushrooming on every hand, it is imperative that ASCD, as the nation's professional curriculum and instruction organization, exert its influence in shaping the kinds of materials—the software—which are produced for use on the new hardware. At present, software is all too frequently developed in a vacuum rather than being tied to specific teaching and learning strategies, with the result that materials are developed which have only tangential or peripheral use because they have little relevance to basic instructional needs. All of us recognize that too much of the software now available is inadequate, ineffectual, and irrelevant but one of the reasons for this is that it is designed by people who do not understand curriculum needs. In short, some of the blame can be laid at the feet of instructional leaders who maintain a "hands off" policy and refuse to have little or anything to do with software development.

One cannot—and should not—expect engineers to design good curriculum materials any more than one should expect curriculum leaders to design the engineering components of the hardware! A partnership is needed between instructional leaders and engineering personnel. In fact, curriculum leaders should feel the same responsibility to write for media as they now do for textbooks. ASCD should urge that curriculum proposals be linked from the start with media so that media will implement the curriculum and not go in the opposite direction.

5. ASCD should undertake intensive in-service, workshop opportunities in the new technology for instructional leaders and curriculum workers so that they might themselves become thoroughly familiar with the techniques of working with computer-assisted instruction, programmed learning, instructional television, and other new developments. (*Hearing* about these new techniques or *seeing* them demonstrated at educational meetings is not adequate for instructional leaders and curriculum workers, in turn, to train teachers to employ these tools meaningfully for the tasks ahead.)

6. ASCD should include films, video tapes, and transparencies as part of its publications program. Consideration should be given to expanding the Association's present strong program to include "publications" of an audio and video nature, as well as printed materials.

In summary, this writer is urging the Association to recognize that media can become ways of communicating curriculum design and objectives. They are not stimulants or miracle drugs for an ailing instructional program but essential ingredients for a program of quality education. They should be part of the instructional cake's batter and not the frosting decorating the cake once it is out of the oven!

Because until now the great new opportunities which these media offer have been used only to a very limited extent in systematic educational efforts for tackling some of the urgent problems of education, it is my feeling that a coherent general strategy is urgently needed for the use of modern tele-instructional media in the work of the school. We must harness technology to accomplish more speedily and effectively the tasks and goals we have set for ourselves and for education in our time.

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Criteria for Theories of Instruction

edited by Ira J. Gordon

Offers some guidelines for assessing instructional theory which will aid the curriculum worker in evaluating new instructional programs.

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