

Supervising Computerized Instruction¹

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ADMITTEDLY, computer-aided instruction is in its infancy. To date, most supervisors have encountered the computer as a force in the curriculum only through the printed word, typified by a special section on computer-assisted instruction in *Phi Delta Kappan*, in April 1968, or the issue on instructional technology of *Educational Leadership*, in May 1968. Few supervisors have yet had the experience of carrying out their roles as supervisors in systems in which computer-aided instruction makes a major contribution to the curriculum.

Yet infants have a way of growing up. It is not too early to speculate on alternatives concerning their craft which will confront supervisors as computer-aided instruction develops. It is better to begin reflecting now on alternative models for supervising computer-aided instruction rather than realize belatedly that it is later than we thought as technology moves swiftly on.

A natural caution rightly impels us to ask whether we are dealing with a likely eventuality when we raise the question of alternative models for computer-aided instruction. So far as we can judge, what is the probable impact of the computer upon American society and American education in the years ahead? Though the gods give no guarantees, there are thoughtful scholars who are willing to speculate on the future. There is agreement among them that the impact of

the computer will be powerful upon the American scene and American living patterns.

Scholars who speculate on the future foresee substantial use of computer-aided instruction in the school and in the home. For instance, Kahn and Wiener say:

Computers will also presumably be used as teaching aids, with one computer giving simultaneous individual instruction to hundreds of students, each at his own console and topic, at any level from kindergarten to graduate school; eventually the system will probably be designed to maximize the individuality of the learning process. . . . Individual computers (or at least consoles or other remote input devices) will become essential equipment for school, home, business, and profession, and the ability to use a computer skillfully and flexibly may become more widespread than the ability to play bridge or drive a car (and presumably much easier).²

The computer is likely to become a pow-

¹This article is based upon a presentation by William Van Til to the session on supervising computer-aided instruction, Association for Supervision and Curriculum Development Conference, Atlantic City, New Jersey, March 1968.

²Herman Kahn and Anthony J. Wiener. *The Year 2000: A Framework for Speculation on the Next Thirty-Three Years*. New York: The Macmillan Company, 1967. pp. 90-91.

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erful force in American society. Computer-aided instruction will apparently become an important factor in the multiple media used in education through schools and homes.

Present Models in Supervision

How about supervision of computer-aided instruction? On this matter, it is too early for expertise. As we have said, supervision of computerized instruction is only in its infancy. The best we can do at this stage is to speculate on possible models, partially derived from the work of ASCD's Commission on Supervision Theory,³ and on their possible relationship to computerized instruction.

The first model, as reported by ASCD's Commission, is derived from the pattern of supervision which prevailed in industry and education from 1910 to 1935 and which still persists to a degree today. This is the scientific management model, so named for the classic book by Frederick W. Taylor. Key concepts are efficiency, hard-nosed scientific standards, depersonalization, chain of command, clear communication up and down, specialization in jobs, and impersonal measurement. Resultant supervision stresses close direction by supervisors, teacher implementation of tasks determined by their superiors, specific performance standards required of teachers and of students, rating by supervisors, guiding ideas derived from administrators and not from teachers or students.

The scientific management model as applied to computerized instruction would involve determination of a pattern of laws of learning by psychologists (probably those of the school of thought of Skinner and his fellow behaviorists), determination by curriculum experts of exactly what is to be taught, and translation of content and psychology by computer experts into computer technology. The general or specialized supervisor, operating on the next rung down in the managerial hierarchy, would see to it that the

teacher prescribed the correct computer technology for children and carried through classroom instruction efficiently, impersonally, and accurately.

The supervisor would direct closely, communicate clearly, and carry out without deviation the mandates of the experts above in the hierarchy. The supervisor would hold the teacher to defined teaching tasks, demand high performance standards, evaluate results closely, and rate the teacher on performance. In turn, the teacher would hold the students to their defined learning tasks, require high performance standards, examine extensively and grade the students. We might quote Miranda, with a despairing inflection, "O brave new world that has such people in't."

The second model is derived from the pattern of supervision which influenced industry and education in the period from about 1935 on and which is still heavily influential in education today. This is the human relations model which cites the classical experimentation at the Hawthorne plant of Western Electric and which reflects the work of such theorists as Elton Mayo and Fritz J. Roethlisberger. Lippitt, Benne, Bradford, Cartwright, and Zander are among the names associated with the educational aspect of the human relations emphasis. Bethel, Maine, may be regarded as the spiritual capital of this approach.

Key concepts of the human relations approach are the importance of the individual and his satisfactions, drives, needs; the importance of informal groups rather than exclusive primacy of the formal structure; participation by all in decision making; concern for high morale. Resultant supervision stresses warmth, personalization, individualization, equality relationships, reduction of status roles, recognition of individual and informal group purposes, participation by teachers in curriculum making, partnership assumption, and avoidance of rating by supervisors.

The human relations processes model as applied to computerized instruction would probably involve advice and consultation to school systems, individual schools, and indi-

³ William H. Lucio, editor. *Supervision: Perspectives and Propositions*. Washington, D. C.: Association for Supervision and Curriculum Development, 1967.

vidual classes by psychologists (possibly of the perceptual viewpoint typified by Arthur Combs, Earl Kelley, Abraham Maslow, Carl Rogers), by curriculum leaders, and by computer technologists. The work of the supervisor would be to harmonize the know-how of the psychological, curricular, and computer consultants with the computer programming for individual students requested by the classroom teacher. The teacher would be regarded as a highly educated and well-trained professional who utilizes a variety of old and new media, including computer-aided instruction, and who is a decision maker and a creative force.

The teacher would be conceived of as the person best equipped to foster learning experiences for the individuals whom he knows best. The teacher would describe the needs of his students. The supervisor would act as a partner, facilitator, and middleman in attempting to implement through technology what the teacher perceives as needed. The teacher would be the single most important participant in the determination of the particular content of the computer technology used in the classroom. We might quote Miranda again, but with a somewhat incredulous inflection, "O brave new world that has such people in't."

These are the two classic and polar models of supervision which have influenced educational practice. In addition, some, including William H. Lucio, have described a revisionist model intended "to consider both individual and organizational goals in their proper perspective," and "to eliminate the unrealistic aspects of the human relationist approach without sacrificing the advantages of its departures from the viewpoint of scientific management."⁴

Without necessarily subscribing to the revisionist view (which aspires to but may not be able to achieve a reconciliation of those ancient antagonists—individual needs and organizational demands), I would like to suggest that supervision of computerized instruction may result in and follow a model somewhat different from both classic models.

⁴ *Ibid.*, p. 8.

Is a New Model Needed?

The different model may conceive psychologists, curriculum specialists, and computer technologists not as all-knowing authorities, yet as more than consultants. It may conceive teachers not as completely autonomous, yet as far more than robots. It may conceive supervisors not as taskmasters, yet as more than just facilitators.

We must guard against the possibilities of psychologists, curriculum specialists, and technologists becoming the arrogant masters implied in the scientific management computerized model. Yet let us recognize also that the psychologists, curriculum specialists, and technologists may have to achieve a more independent role than simply consultation if computer-aided instruction is to be widely used. Perhaps they will become the creators of a great and a highly varied library or bank of materials from which educators may selectively choose.

We must work so that the teacher does not become the mere mechanic and puppet envisioned in the scientific management computer model. But let us recognize also that the teacher in a highly specialized world cannot build computer technology with bare hands or through round-table discussion and must instead utilize selectively the product of specialists.

Let us devoutly hope, and indeed let us make sure, that the supervisor does not become a Prussian drillmaster serving narrowly the prescription of a master race of experts and presiding over a subordinate race of humble teachers, as envisioned in the scientific management computer model. But let us recognize also that a supervisor is more than a facilitator or a yea-sayer. The supervisor should have a leadership role in solving problems, in injecting ideas, and in humanizing and enriching the process of education both in relationship to teachers and in relationship to the developers of the new technology.

This may involve a different model for supervising computerized instruction. If so, let us move toward its construction. □

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