

● Innovations in Education

Technology and School Organization

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THE writer, during the past year, has served as director of the project, Instructional Innovation in New School Facilities, supported in part by the Fund for the Advancement of Education. This project was designed to help teachers and administrators plan and develop educational programs that will be congruent with new facilities. These new schools were built under the direction of the University of Tennessee School Planning Laboratory and the Educational Facilities Laboratories, Inc., New York.

Under the auspices of the SPL and EFL, a variety of types of school organizations are being developed utilizing new technology which is reflecting and changing patterns of instruction and school organization. The new facilities contain an environment which is supportive of new instructional patterns and organizational forms. The changing technology found in the schools requires a particular type of relationship between the student and teacher and between the teacher and administration.

The older forms of school organization, and with them older forms and styles of educational leadership, are becoming obsolete. New types of social organizations are emerging, and where new methods of educational manage-

ment are being instituted, in many instances, they are being developed without any established body of theory or standardized method of procedure available to guide those administering the school program.

New norms of behavior are developing because of a change in technology and structure. All of those involved in teaching and learning are constantly attempting to reconceptualize their functional relationship with the changing school organization and curriculum.

New styles of curriculum leadership and teaching strategies must be developed in each new facility which will be supportive of the new school organizations that are emerging. Indeed, a major outcome of the project is that the school staffs now realize that a conceptual period of growing length and specific planning is required if the new patterns of curriculum organization are to be understood and implemented. The changing organization requires teachers, administrators, and curriculum specialists who can conceptualize and comprehend the changing curriculum patterns as they evolve.

There is a proliferation of varieties of teaching roles. In the new educational facilities being developed in many parts of the country, teachers

have offices, team teaching consultation areas, planning rooms, and other flexible spaces to work, rather than a desk in a classroom.

In the open spaces facilities in which flexibility is stressed, learning to a large extent is student self-directed: the student works in large groups, small groups, and alone with a variety of self-pacing programmed materials and technology. In addition, there is an increased use of para-professionals, media specialists, lay graders, data processing specialists, and others.

In team teaching in the school the functions of individuals in the social organization are interrelated, and communication flows freely among various positions; the teacher no longer has a high degree of autonomy. The teacher in the traditional school has had broad, discretionary power in a highly autonomous setting. This has been referred to as structural looseness in the organization. The increasing complexity of the organizational system has been brought about as a result of changing structure in the curriculum. It appears that more coordination, planning, and a tighter, more formal, organizationally arranged system becomes necessary as the complexity of the organization increases because of the changing structure and technology of teaching.

As the teacher identifies less with an autonomous situation, he at the same time is integrating small systems into larger ones as he cooperatively shares with others responsibilities for instruction. It is hypothesized that the professional enlarges the scope of his activities and discretion as a result of moving into a more highly analytical relationship. He increases his creative thinking

by being able to test a broader range of ideas. Teachers become more useful to the organization for what they can conceptualize.

Articulation

A recurring theme emerged as we worked with teachers and administrators in innovative organizations. This was the need to develop a common purpose and to see a functional unity among the variety of new activities occurring in the new facilities. In the open spaces where team teaching prevails, the effects on the organization of drawing together formerly separate teaching units become significant.

Traditional teaching boundaries and departments begin to crumble. Once the organization has changed in this regard, teachers appear to develop a more logical approach to teaching in an organizational sense. Team teaching with the new technology facilitates the creation of common objectives. Teachers and administrators feel there is a need to synthesize and to integrate the whole school program. Articulation as a concept becomes real.

In the past teachers in their somewhat autonomous classrooms were primarily concerned with developing and synthesizing their particular teaching domain. However, the new structural changes and technological innovations appear to emphasize the need for a systems analysis of the total program.

One useful step toward the development of an adequate conceptualization of changing school organization, would be to develop a systems approach to the analysis of the school organization, curriculum structure, and procedures that are incorporating advanced technology.

Models should be developed which will show at least the functional relationship between organization and curriculum variables.

From Microscopic to Macroscopic

Comparatively little thought has been given to how technology, structure, and men interact to form a system in the field of education in spite of increasingly significant studies being made in industry and other organizations. The utility of having a model system performance is that it enables one to more readily conceptualize the variables influencing school design and program taxonomy. Without this, one cannot conceptually evaluate the school as a system. Because of the increased cooperative interaction between teaching personnel as, for example, in team teaching, it becomes more essential to view the school program and organization from a movement of microscopic examination of educational variables within the individual classroom to the macroscopic view of systems analysis.

Flexible school organizations and the associated technology appear to make their greatest contribution as a stimulant to the analysis of the schools as organizational systems. What is needed are concepts at the systems level which will reveal the interactions and mutual dependencies of the many organizational variables. What are the major types of relationships that ought to be investigated? As a result of changing organizational forms, the following are cited as illustrative of some of the variables that need to be examined:

1. Do a higher division of labor and changes in task structure result in fewer roles per teacher?

2. Does the locus of decision making change toward higher or lower levels of the organization?

3. How will the different levels of professional training existing in a given department influence the number of levels of authority?

4. What effect does the proliferation of teaching roles, vis-a-vis para-professionals, have upon the professionalization of staff members?

5. If there is a greater differentiation in task structure and technology, does this require a corresponding increase in the need for someone to coordinate sub-systems?

6. Does the supervisor need to be more of a systems analyst (generalist) rather than a specialist?

7. Does the introduction of automated procedures and changes in technology and structure result in the school organization changing from a relatively flat structure toward a taller, more bureaucratic type?

8. Is the teacher's task or job enlarged or is it reduced by a further division of labor? What is the effect upon his discretionary power?

It appears that as one works with a school system that is in process of change in technology and structure, it becomes possible to rediscover the organization as a social system. Perhaps a study of the schools as organizational systems can contribute to the birth of new conceptions as to how the real character of the school is changed.

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