

How can the physical environment hinder or facilitate the teaching/learning act? The facility should be flexible and complement the variety of teaching methods.

relating curriculum to facility planning

By Gerald Douglass Bailey



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Few school personnel would disagree with the importance of a comprehensive curriculum in a school system. Likewise, few people would disagree that adequate physical facilities are necessary for a school to function effectively. Paradoxically, schools across the nation often reflect a situation where physical facilities and curriculum are not complementary and are even in opposition to one another.

Historically, there are probably a variety of reasons for this state of affairs. Some of the more widely accepted reasons are:

1. Educators in the school hierarchy have either discounted, underestimated or misunderstood the importance of the relationship between curriculum and physical facilities.
2. Architectural structures have been planned and constructed with little or no reference to school philosophy or the established educational goals.
3. Those people most involved in the daily formation and translation of curriculum have not been directly involved in the various stages of school planning and construction.
4. Of late, school structures have been constructed to facilitate a distinct and/or single teaching-learning methodology rather than to provide for varied methodological approaches.

Engendering broad solutions to these problems is not an easy task. The interfacing of curriculum with physical facilities is a laborious and complicated enterprise. The following suggestions should not be viewed as solutions in themselves but rather as individual steps in a process to solve the problems associated with the curriculum/environment relationship.

Educators within the school system need to become more aware of the relationship between the learning environment and curriculum. While this step of awareness may manifest itself in a variety of ways, it may simply begin by having educators (administrators and classroom teachers) ask themselves the following questions:

1. What am I attempting to do?
2. Do I have the support facilities to carry out my objectives?
3. What are the advantages and limitations of the physical environment?
4. How are other disciplines functioning within the existing physical structure?
5. What are other schools in the school district doing to establish an effective relationship between the environment and curriculum?

6. How are other schools across the nation attempting to coordinate their physical environment with the curriculum?

An increased awareness level may also be accomplished by organizing school-related interest groups or by initiating faculty meetings which focus directly on the curriculum/environment issue.

A more harmonious relationship between the school curriculum and physical facilities will result when educators become more involved in solving their problems associated with physical facilities. The foundation of an effective school begins with attaching significance and priority to physical facilities and their relationship to curriculum. However, cognizance of the relationship between curriculum and physical environment is not enough. Both administrative and teaching personnel must encourage and facilitate formal and informal research endeavors relating to the school facilities and curriculum offering.

Formal research involves the trained educational researcher who is interested in finding out how the physical environment acts to hinder or facilitate the teaching/learning act. This type of research can help fill a void concerning the psychological effect of environmental conditions on student achievement and attitude. An equally important kind of research can be conducted by those directly responsible for classroom instruction. Action research* is a less rigid form of scientific investigation which can help teachers solve the immediate problems associated with support facilities and the curriculum offering. Too often decisions which relate to how teachers utilize physical facilities are based on visceral level feelings rather than on data gathered through a systematic problem-solving approach. Results drawn from action research can be invaluable when planning for new physical facilities or renovating existing structures.

A school curriculum with a complementary physical facility can only be achieved when architects as well as educators recognize that classroom instruction can and does involve more than one teaching method. Any attempt to build new physical facilities or modify existing structures will necessitate the acknowledgment of this principle. The myth still prevails that classroom teachers utilize only one basic method of instruction. In reality, teachers utilize a wide variety of teaching methods including lecture, discovery, inquiry, gaming/simulation, small group, tutorial study and independent study. The axes depicted in Figure 1 show the possible interaction patterns between teacher and student.



Figure 1. Classroom Instructional Interaction Axes

Physical facilities need to provide the flexibility of moving from one axis (mode of instruction) to another with ease and

*The process by which practitioners attempt to study their problems scientifically in order to guide, correct and evaluate their decisions is called action research.

minimal confusion. Equally important, the physical environment must allow these methods to occur simultaneously. (For example, a teacher may have students engaged in small group discussion while at the same time, another group of students may be watching a film). Almost without exception, current architectural structures do not provide the necessary visual and audio isolation required in multiple and varied instructional strategies.

School districts seeking to make decisions about physical facilities need to gather comprehensive information about the needs of the existing curriculum and the demands placed on current physical facilities. Establishing this type of data base should include systematic information gathering involving a broad base of people in the operation of the school.

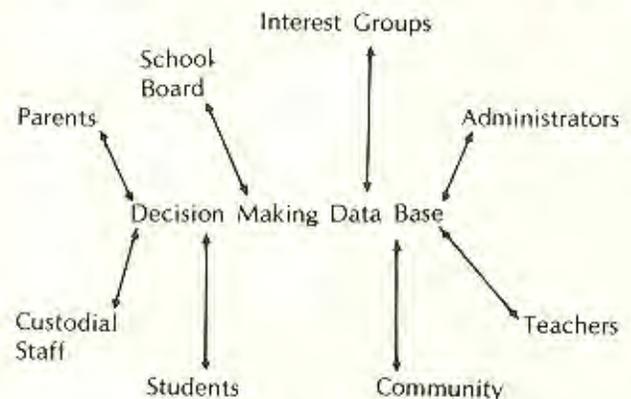


Figure 2. People Affecting School Operation

Soliciting information from these people may be accomplished through formally prepared questionnaires and personal interviews or informally through interest group meetings. While it is logistically difficult to gather information from different population segments affecting the school, it is extremely important that these people feel a part of the decision-making process.

School districts interested in producing a complementary working relationship between school facilities and curriculum should be cautious about building physical facilities which accommodate only one methodological approach. A number of schools have been built to facilitate innovative educational concepts (i.e. team teaching, open education and competency-based education). While these architectural activities may be laudable, they can be a costly error to the school district if (1) the educational innovation proves to be nothing more than a passing fad, (2) the majority of participating teachers are in opposition to the philosophic tenets of the innovation, or (3) teachers involved in the innovation have not been adequately trained to operate with the methodological approach. Any one of these program characteristics can present a serious challenge to the physical facility/curriculum relationship.

School districts need to remain cognizant of the demand for facilities which are flexible and can adjust to more than one instructional approach. Those environments which

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the state to assume future debt service on local bond issues and allowed credit for voted millage over the 10-mill school board levy that was used for capital outlay purposes during the previous five years.⁶

After a study of capital outlay financing in South Dakota in 1973, Hudson recommended equalized variable grants from the state computed on the basis of state recognized project costs for financing local school buildings. He also recommended an equalized debt service grant program that would recognize prior effort of the local districts for the fiscal support of school construction.⁷

More State Involvement

Based on several existing programs and recent studies of school facilities funding, it is apparent that the trend is toward more state involvement in the financing of school building construction. Such programs recognize the superior revenue generating capacity of the state governments. They also recognize the fact that the local property tax base in many school districts is being strained beyond its relative capacity to support additional demands made upon it.

Since education is fundamentally a state responsibility, local school districts should not have to bear the complete fiscal burden of financing school construction. This statement obviously raises the question of the potential loss of local control in the operation of the capital outlay program of the school district. However, underlying the trend toward more state support in the financing of school building construction is the larger question of equal educational opportunity for the children of the state and taxpayers equity in the financing of needed school facilities.

NOTES

1. W. Monfort Barr, K. Forbis Jordan, C. Cale Hudson, Wendell J. Peterson, and William R. Wilkerson, *Financing Public Elementary and Secondary School Facilities in the United States*, National Educational Finance Project, Special Study No. 7 (Bloomington: Indiana University, Bureau of Surveys and Administrative Studies, 1970), p. 139.
2. William K. Dickey, Jr., "Identification of Variables Associated With Local School District Debt Service Needs in Delaware," Diss. University of Florida 1975, pp. 2-3.
3. Alford R. Carey, Jr., "The Maryland Experience: Full State Funding of Capital Outlay," in *School Finance in Transition: Proceedings of the 16th National Conference on School Finance*, (Gainesville, Florida: National Educational Finance Project and the Institute for Educational Finance, 1973), p. 146.
4. G. Kent Stewart, "Methods of Financing Public School Construction in Seventeen Central States," Kansas State University, Special Study (Manhattan, Kansas: The College of Education Center for Extended Services, 1974), p. 7.
5. Salvatore Matarazzo, "Financing Capital Outlay," in *Financing the Public Schools of Kentucky*, ed. Kern Alexander and K. Forbis Jordan (Gainesville, Florida: National Educational Finance Project, 1973), pp. 194-240.
6. Marshall A. Harris, "The Florida Education Finance Program Act of 1973: An Overview and Analysis," (Tallahassee, Florida: Office of the Governor, 1974), pp. 6-8.
7. C. Cale Hudson, "Financing School Construction," in *Financing the Public Schools of South Dakota*, ed. Kern Alexander and K. Forbis Jordan (Gainesville, Florida: National Educational Finance Project, 1973), pp. 155-80.

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provide the teacher with opportunities to utilize various instructional strategies will be the classrooms for today's innovation as well as tomorrow's innovation.

Physical facilities of the future need to reflect the development and concern for the well-rounded child. While controversy still exists about the kind of competencies or skills that a student needs to possess to function in society, our future schools need to project a concern for the academic and physical, as well as the emotional development of students.

Building schools for today as well as for the future is a Herculean task. There appears to be no single way to strike a permanent working relationship between curriculum and physical facilities. However, one of the most important steps in solving this problem lies in coordinated efforts between school architects and educators. Educators can no longer

depend on these outside experts to provide them with all the information needed to construct physical structures which are compatible with the school's curriculum. An architect's responsibility is to understand, interpret and present solutions to the educator's environmental problems.

In the past, educators have not collected sufficient information to communicate their architectural needs. The suggestions proffered in the preceding paragraphs are initial steps to increase that knowledge base. Together the architect and educator must work to build schools which are a reflection of how students best learn and how teachers most effectively teach. In this manner schools will be able to achieve a greater consistency between their philosophical stance and the actual implementation of those educational beliefs.