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Open Space vs. Self-Contained

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IN THE PAST several years, large numbers of new elementary schools have been built according to open space plans. While the schools vary enormously, these buildings feature open areas with few, if any, interior walls. Learning areas used by one age group tend to fade gradually into learning areas used by another age group. Absolute visual barriers between teaching stations are at a minimum.

Because of the recency of the move toward open space buildings, research efforts directed at assessing the impacts of these spatial differences on pupils have been few. Attempts to make order out of what little research has been done are hampered by a tendency of some researchers to confuse the terms "open space" and "open education."

The term "open space" refers to a particular physical environment. The term "open education" refers to a method of organizing educational experiences for youngsters within a physical environment. Because of its emphasis on children moving freely from area to area, open education seems to be more easily managed in an open space school than in a school with self-contained classrooms. While this ease of management has resulted in open schools housing many open education programs, many highly-structured and traditional programs also are found in open space schools. There is no inevitable connection between open space and open education.

Independent of programmatic considera-

tions, what have been the relative impacts on pupils of the physical environments of the open space school and of the traditional school with self-contained classrooms? Several investigators have attempted to assess the effects of the two settings on various aspects of pupil personality.

McDaniel (1970) compared the personal-social adjustments of 132 first and second graders in team-taught open plan schools with 166 first and second graders in self-contained classrooms. Criterion measures included the Metropolitan Reading Test, the California Test of Mental Maturity—Long Form, the Behavior Description Test, and the "Guess Who" Test.

The investigator found no significant differences between the two groups of first grade children in personal adjustment, leadership behavior, and withdrawn behavior. The first grade children in the team-taught situations in open plan schools were significantly superior to their counterparts in self-contained schools for both social adjustment and total adjustment ($p < .01$).

Second grade pupils in the team-taught open plan schools were significantly better in social adjustment ($p < .05$) and leadership behavior ($p < .01$) than second grade pupils in self-contained schools. Second grade pupils in self-contained schools were significantly more withdrawn ($p < .01$) than second grade pupils in team-taught open plan schools.

Heimgartner (1972) investigated the effects on self-concept of open space and self-contained classrooms. Using a subject population of 216 pupils, divided between an open space laboratory school operated by the University of Northern Colorado and a traditional public school with self-contained classrooms, the investigator administered two criterion instruments. They were: (a) the Self-Social Symbols Tasks and (b) the Children's Self-Social Constructs Test.

Children in the open space school were found to have more identification with children in their school group than children in

the self-contained classrooms. Over the length of a year, children in the open space school increased in self-esteem; children in the traditional school decreased in self-esteem. Children in the open space school were found not to identify with any one of their teachers more than another.

LaForge (1972) investigated the impact of the open space design of an elementary school on selected pupil personality characteristics. A subject population consisting of present and former pupils of a selected open space school and a selected traditional school with self-contained classrooms was selected.

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Criterion instruments included the Children's Personality Questionnaire (used with 6th grade subjects) and the High School Personality Questionnaire (used with 7th and 8th grade subjects).

The investigator found no significant effect on total personality that could be attributed to youngsters' experiences in either open space schools or schools with self-contained classrooms. There were significant effects on certain sub-components of total personality. Youngsters with experience in open space schools were found to be significantly higher in the quality of tendermindedness and in terms of sympathy for the needs of others than those from schools with self-contained classrooms.

Anifant (1972) studied risk-taking behavior in children in open space schools and children in schools with self-contained classrooms. His criterion instruments were individually administered to the total subject population of 120 elementary pupils (60 from open plan schools, 60 from schools with self-contained classrooms). Each youngster was scored on his or her performance on the following: (a) a ring toss game (a chance-skill device); (b) a bead game (a chance-chance device); and (c) a choice dilemmas procedure (a cognitive judgmental procedure).

The data revealed that pupils from open space environments were significantly more risk-taking ($p < .001$) on the ring toss game than pupils from self-contained classrooms. No significant differences between the groups were found in scores in the bead game. Pupils from open space schools were significantly better performers ($p < .039$) on the choice dilemmas procedure than those from self-contained environments. The investigator concluded that learning experience in an open space school is more conducive to risk-taking behavior than learning experience in a school with self-contained classrooms.

Ruedi (1973) examined the influences of open plan schools and schools with self-contained classrooms on pupils' self-concepts. He applied a self-concept scale, which included measures of interpersonal adequacy,

autonomy, academic adequacy, and teacher-school relationships, to a population of 4th, 5th, and 6th graders. No significant differences were found in the self-concept scores of pupils from open plan schools and those from schools with self-contained classrooms.

Effects Upon Teachers

A few investigations have focused on the impact of open space schools and schools with self-contained classrooms on the personal feelings of teachers. Meyer (1971) surveyed 110 teachers from nine open space schools and 120 teachers from eight schools with self-contained classrooms. Each teacher was asked to respond to a questionnaire prepared so as to provide information in four areas: (a) ambition and orientation; (b) formal evaluation; (c) school authority structure; and (d) job satisfaction.

Meyer found that teachers in open space schools were more satisfied with their jobs than teachers in schools with self-contained classrooms. Teachers in open space schools felt themselves to be more autonomous and to have more influence in making all kinds of school decisions than their counterparts in traditional buildings.

In open space schools women teachers interested in vertical promotion were less satisfied with their jobs than were women teachers without any such interests. On the other hand, open space women teachers with professional teaching ambitions rather than administrative ambitions had high job satisfaction. The investigator postulated that experience in open plan schools tends to give teachers professional teaching ambitions that tend to translate into high job satisfaction.

A Florida report (Broward County School Board, 1972a) compared teacher attitudes toward open plan school environments and traditional self-contained school environments. Attitudes of 126 individuals in their fifth year of teaching were sampled. A lower morale was reported among fifth-year teachers assigned to open plan schools than to schools with self-contained classrooms. According to the report, this finding could

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well have resulted from overcrowding in the newer open space buildings rather than from a reaction to the physical environments in those facilities.

Another report by the same agency (Broward County School Board, 1972b) reported that three-fourths of fifth-year teachers in open space schools felt that discipline was "too easy" in their buildings. Less than one-half of teachers in schools with self-contained classrooms suggested that discipline in their buildings was "too easy." Teachers in open plan schools felt noise to be a much greater problem than teachers in traditional schools with self-contained classrooms. Teachers in open plan buildings overwhelmingly rejected a return to schools with self-contained classrooms.

The impacts of open space school environments and traditional self-contained classroom environments on both teachers and pupils have only begun to come to light as a result of research undertaken to the present time. Particularly with respect to the issue of teacher attitudes, little has been done by way of tight experimental research that can yield statements of causal relationship. Some studies of this variety have focused upon physical environmental influences on pupils, but even here the potential of the subject has barely been tapped. Research to date has been heavily weighted in the direction of issues related to pupils' attitudes and personalities. Certainly the impacts of these physical environments on other dimensions of pupil behavior, academic

achievement in various subject areas, for example, are ripe for investigation.

Before a large body of meaningful research can be built up in this area, investigators must come to grips with the issue of specificity. Comparisons between open space school environments and self-contained classroom environments, unless careful descriptions of those settings are provided, involve

1. Do experiences in open space school environments have impacts on pupil personality different from experiences in self-contained classrooms?
2. Do pupils from an open space school environment achieve differentially in the various subject areas compared to pupils from a self-contained classroom environment?
3. Do pupils from an open plan elementary school find more personal adjustment problems in traditional junior high schools with self-contained classrooms than pupils from elementary schools with self-contained classrooms?
4. What happens to the academic achievement of a pupil from a self-contained classroom who moves to a school built according to an open plan?
5. What happens to the academic achievement of a pupil from an open space school who moves to a school with self-contained classrooms?
6. Do pupils in open space schools manifest different leadership patterns than pupils in schools with self-contained classrooms?
7. In terms of tolerance for ambiguity, what differences are there among teachers who prefer open space buildings and those who prefer buildings with self-contained classrooms?
8. What impacts do physical environments have on teachers' preference for given instructional styles?
9. Is there a relationship between a teacher's preference for working in an open plan building (or a self-contained classroom) and the academic achievement of his or her pupils?
10. Does working in an open space building tend to give a teacher a different set of professional ambitions than working in a building with self-contained classrooms?

Figure 1. Research Is Needed on These Issues in Open Plan vs. Self-Contained Education

measurements of very gross entities. There is a need to restrict the focus, a need to ask, "What aspect of physical environment X is hypothesized as promoting pupil behavior Y?"

There is a need, too, to develop some validated criterion measures that lend themselves to broad investigative use. Even in the limited number of studies reported here the diverse nature of criterion instruments used makes comparisons across studies a hazardous undertaking.

Given an ability to narrow the focus of investigations and an appropriate set of criterion measures, researchers could profitably turn their attention to some of the general issues in Figure 1.

Several of the questions in Figure 1 have been addressed by some of the research efforts reported here. In no case, however, does the extant body of research come close to providing enough empirical evidence to support solidly-grounded responses. Several of these questions have yet to receive any systematic attention from educational researchers. These questions, and the issues to which they speak, represent only a sampling of the concerns being voiced by those involved with elementary education in open plan schools and in schools with self-contained classrooms. These concerns suggest that large scale research efforts directed at providing some answers will be widely applauded.

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