DOCUMENT RESUME

ED 097 962 PS 007 455

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TITLE Open Education: Review of the Literature and Selected Annotated Bibliography. Reports in Education, No. 4.
INSTITUTION McGill Univ., Montreal (Quebec). Faculty of Education.
PUB DATE 73
NOTE 110p.
AVAILABLE FROM Faculty of Education, McGill University, Room 531, Education Building, 3700 McTavish Street, Montreal, Quebec, Canada H3C 3GI ($3.00, paper)

EDRS PRICE MF-$0.75 HC-$5.40 PLUS POSTAGE
DESCRIPTORS *Annotated Bibliographies; *Literature Reviews; Nongraded System; *Open Education; *Open Plan Schools; Principals; School Space; Students; Teachers; *Team Teaching

ABSTRACT

This monograph contains a review of the literature, a bibliography, and a selected annotated bibliography on three main areas of open education: the "open area" school, the "team teaching" school, and the "open" school. The emphasis is on the third area, "open schools." Bibliographic citations have been chosen from a variety of sources including books, magazines, unpublished conference papers, project reports, and Ph.D. and Ed.D. theses. (CS)

REPORTS IN EDUCATION

Number 4

OPEN EDUCATION

Review of the Literature

and

Selected Annotated Bibliography

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REPORTS IN EDUCATION is a monograph series jointly sponsored by the Department of Educational Administration and the Department of Educational Psychology and Sociology, Faculty of Education, McGill University, 3700 McTavish Street, Montreal, Quebec, Canada, H3A 1Y2.

The preparation of this report was made possible by an agreement with the Protestant School Board of Greater Montreal. A total of four literature surveys were completed during the summer and fall of 1973 on Accreditation, Class Size, Learning Disabilities, and Open Education.

We are grateful for the interest and cooperation of Mr. Malcolm H. Stanley, Superintendent of Curriculum, and Dr. E. George Cochrane, Curriculum Coordinator-Course of Study, Protestant School Board of Greater Montreal, in preparing these documents.

REPORTS IN EDUCATION

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Preface

Three main areas (with differing degrees of emphasis) are covered in this review: the "open-area" school as such, the "team-teaching" school, and the "open" school. The main emphasis is on the last topic. Some of the papers read dealt with the "open area" and its effects, but did not specify how learning and instruction were taking place. For this reason, the "open area" is included as a separate category here and in the bibliography.

The list of possible sources of information is too long to be dealt with exhaustively within a short time. Compromises have been necessary, especially where some sources have not been directly available.

One general point about the literature which may have some importance and indicate a trend: the entries in Dissertation Abstracts International (a compilation of summaries of most PhD and EdD theses which come out each year in the United States and Canada)under the topic of "team-teaching" have grown progressively fewer,

while those under "open-teaching" have grown progressively more numerous since 1970.

The Open Space

> Winston Churchill once remarked, "We shape our buildings; thereafter they shape us." Architect John Lyon Reid has applied this thought to schools: "Education is a fluid activity. A fluid might be said to take the shape of its container. If that is true, I think we might say that the container should change its shape when required."
>
> (Bair & Woodward, 1964, p.36)

In large educa[illegible] systems teachers and children do not usually have much influence over the shape of the "containers" in which they find themselves. What then of teachers who find themselves in open spaces with other teachers and groups of children? What of the children? This part of the review intends to examine some of the ways in which teachers and children functio[illegible] and can function in architecturally "open" schools.

Of course, the architecture of schools will shape and to some extent determine what goes on inside. But it is not the building alone which will dictate and govern the quality of education which occurs. The philosophy of education, assumptions about learning and the teachers' attitudes toward children, have to be important factors.

"Architecturally open" means the type of building

that has been designed so that more than one group of children and their teachers would share space in some way. This might involve a large open space which the groups used for all their basic activities. It might mean separate rooms with an adjacent common space (a large room, corridor and so on).

This general approach to the topic has opened up a rather vast literature, much of which turns out to be descriptive narrative rather than any kind of empirical testing of assumptions and results. However, this type of literature is to be expected, as the area under investigation is relatively new in education. As with any investigation, the general questions must come before the more specific so the descriptive literature helps to identify the "nature of the beast" and to define the general problem.

In the introduction to her annotated bibliography of the Open School, Cockburn (1973) quotes Brunetti's definition of the open plan: " . . . the open space school is composed of instructional areas without interior walls, ranging in size from two to over thirty equivalent classrooms." She notes that "there are problems in

assessing the validity of the conclusions of many of the studies mainly because it is hard to isolate space as the only variable."

There is very little written and researched about the "open area" that can be taken as verified and generalizable, because what happens and the results to teacher, child and school of an open area must be contingent to a large extent upon the individual teacher, child, and the organization of the space and the people within it. This is a truism in educational research in any kind of school, but it is especially important to keep in mind when reading about "the open area" in case one is tempted to think of the "open area" as being in itself descriptive of what is happening within the school. It is, most emphatically, not!

The "open area" school may be classed as one of a group of schools which have appeared on the North American scene during this century, in contrast to the traditional school. A traditional school, in general, is one in which the children would be grouped usually by horizontal age in classes of hetero- or homogeneous ability, with one teacher, would usually sit in desks in rows facing a

common point, would follow a prescribed curriculum at a prescribed rate. Non-traditional schools would include open, non-graded, progressive and experimental schools of various kinds (to name a few), where in fact the description of the traditional school would not apply.

The open-area school could fall within either category depending on its use. If, when the internal walls between classes were taken down, there were no changes in organization, assumptions about learning and the roles of the teacher and child, then the school would remain in the traditional category. If, however, there were changes, then the open area could be classified in the non-traditional category with different assumptions and rationale.

The non-graded school is one example of a non-traditional school. Goodlad and Anderson (1963) are the main writers in this field. They have attempted to pull together ideas on non-graded education, to state its objectives and to outline some methods of implementation. They view a graded structure as a convenience and an "efficient device." The main rationale of a non-graded structure is that each child is at a different level of

accomplishment and all should not be expected to reach the same standards at the same time. (This implies that there is a curriculum which all the children will follow, although at different rates). They say that empirical evidence is little and inadequate to decide one way or another whether non-graded structure produces "better" results than graded (p.56-57), but there appears to be no deficiency of achievement of children in non-graded over traditional schools.

Non-gradedness would appear to be an organizational change only: the learning process is viewed in much the same way as in the traditional school, there is a set curriculum (although the individual child moves through it at his own rate), academic achievement is an important goal, the teacher's role is not much changed. The individualization of instruction which was one of the main rationales for the non-graded structure is also mentioned as an important factor in the open-area school.

Research on the Open-Area:

Research into the open-area is found mainly in theses.

Description and implementation. Deibel (1971) explored the question of how well open space schools

meet the demand placed upon them. He found that the open space schools which he was investigating in Ohio were promoting the innovations mentioned in the literature and that there was a cause and effect relationship between the planning and executing of programs in innovative schools. Individualized instruction was the main emphasis of the schools, but non-grading was being narrowly interpreted as multi-level progress.

Etheredge's (1972) thesis was a description of what an open plan school might be in terms of instructional program, instructional organization and instructional space, taken from the literature and also from what he considered to be "best practices" from observations and interviews in open plan schools. It was on a non-empirical level.

Holmquist (1972) investigated the organizational climate as perceived by principals and teachers in architecturally open and closed classrooms in twelve New Mexico schools. He found no significant differences between the two groups of teachers, however principals viewed the organizational climate of their schools as more open than did their staffs. This is a matter for further

investigation.

Read (1973) made an initial evaluation of the development and effectiveness of open space schools in the Chula Vista City school district. She found no statistically significant differences between open space and self-contained schools in pupil achievement, attitude of pupils and staff, or practices within environments. She recommended evaluative research on specific facets of open space schools. This research seems to indicate that changing the architecture may involve a structural change only, and have no real differentiating effect on what happens within the structure.

Demase (1972) looked at the supervisor's role in the development of procedures to involve teachers in preparing themselves for an open space school. While she found no set formula for involving the teachers, she did identify certain important elements which seemed necessary: (a) involvement at the outset of all persons directly involved by the outcome of a change; (b) making sure that whenever people were brought together the reason for the meeting was seen by them as being relevant; (c) emphasizing the worth of each individual; (d) insuring that, through

involvement in various non-threatening tasks, group members became relaxed and aware of each other; (e) continuous encouragement and presentation of situations where group members could use their creativity, set goals and plan for themselves; and (f) involvement of the learner and acceptance and support of him in his growth in knowledge and understanding. These would seem to be essential points for anyone organizing an open space school.

There seems to be no general formula of the open area and its implementation. The studies all involved overall samples in specific locations. Demase's (1972) and Etheredge's (1972) would be of some general use in preliminary planning for an open area, but since there is no common theme established within the research apart from the architectural openness it is impossible to make an organized assessment.

Concerning children. Several studies have undertaken to examine the child in the open area, often compared to children in self-contained classrooms. Beals' (1972) study of emotive perception of fifth and sixth grade students in open space and conventional learning environments significantly favoured more positive attitudes in

children in the open space schools. Beckley's (1972) comparative study of grades one through six children's attitudes toward school and self in open concept and self-contained environments also tended to favour the open concept school. However, there is conflicting evidence. Sackett (1971) compared self-concept and achievement of sixth grade students in an open space school, self-contained school and departmentalized school, and found that the self-concept mean score in the open-space school was significantly lower than for either of the other two schools. He also found a significantly lower achievement score. In contrast, Killough (1971) analyzed the effects on cognitive achievement of a non-graded elementary programme in an open space school and found that after pupils remained in the program for at least two years their mean achievement gains would be significantly better during the third year and for the total three year period than would that of their counterparts in another type of program and facility. They would achieve significantly better as they moved into a graded Junior high school program than would their counterparts. Warner (1970) studying children in grades two, three and four,

found no statistically significant differences in achievement scores between open area and self-contained classrooms. Townsend (1971) found that achievement test scores showed better achievement growth in more subject areas by children in a self-contained and departmentalized school than in an open concept school.

Wren (1972) in examining affective factors also found results which favoured the open area over the self-contained classroom in a sample of third, fourth, and fifth grade students. She found that there were measurable differences in the attitudes and personality factors of the students and also concluded that the fear that anxiety would be caused by the open area learning situation was clearly ruled out by the evidence of the study. In contrast, Laforge (1972), in a study to compare differences in personality characteristics between students in a traditionally designed building and students in an open-space building found that the open-space design of a school building did not significantly affect students when the total personality of the individual is considered. However, the "open-space" students were more tender-minded and sensitive in terms of sympathy for the need

of others than the traditional students.

Myers (1970-71) compared the perceptions of elementary school children (as measured by the Ideal Teacher Checklist) in open area and self-contained classrooms in British Columbia. He formulated and tested three hypotheses: (1) Pupils in open areas would be less concerned about discipline or control than pupils in self-contained classrooms, (2) pupils in open areas would be more autonomous than pupils in self-contained classrooms, and (3) pupils in open areas would be less concerned about fair treatment than pupils in self-contained classrooms. The second two hypotheses received a good deal of support from the answers to the Checklist, but he felt that the evidence for the first hypothesis was conflicting. This study is part of a more long term investigation in B.C. schools.

There is a certain danger in making general conclusions from these studies for a number of reasons, one of which is that they involved different ages within samples and another is that they are often investigating different things. However, there does seem to be a tendency for the results to be more positive for the children in the open areas investigated. Again, it is necessary, while

saying this, to remember that the "open area" of itself, does not seem to represent a common instructional and learning design.

Concerning teachers and principals. The teacher and principal in open area settings have also been investigated. Brunetti (1970) concluded that a high degree of colleague interaction and cooperative task performance was brought about by reducing the physical and organizational isolation of teachers in the open space schools. Conflicting evidence of a sort is offered by Jaworowicz (1972) who found that the open space school design did not, by itself, alter patterns of social interaction between teachers and the principal so as to produce perceptions of organizational climate differing from those found in traditional design schools. A more directly related conflicting conclusion was found by Trout (1971) in a study of team-teaching: where team-teaching, itself, did not assure that cooperative planning occurred either with other teachers or students. (This is included here as team-teaching often occurs within open areas.)

Kaelin (1970) investigated the advantages and disadvantages perceived by teachers and principals in open-space

schools. His findings were generally positive and he draws some important implications for teachers and schools which are considering an open design. Four of them seem worth quoting: (1) Areas of disagreement among personnel actually working in open space schools seem likely to persist until a definitive philosophy is formulated and accepted by all, (2) teacher reactions indicate that individualization of instruction lays stress upon academic learnings allowing this phase of the curricula to preempt opportunities for other valuable kinds of learnings, (3) administrators should be taking active leadership roles in helping teachers to resolve organizational problems within teaching teams, (4) open areas sometimes make possible abuses such as overcrowding which would be more difficult to achieve in conventional school settings.

In examining teacher performance, Mills (1972) found results generally favouring the teacher in the open area as opposed to the teacher in the self-contained classroom. Warner (1970) while he thought that open area had advantages, did not find significant differences between the two groups of teachers (open area, self-contained).

Nielsen and Prodovich (1970) attempted to identify factors associated with successful teaching in an open space. They found one set of statistically significant differences between teachers rated average/poor and those rated outstanding by their principals, as well as trends in other areas of their data. Teachers rated outstanding were more certain of their standing with their principals than the others; they were generally more at ease with him, felt they got sufficient recognition and had a strong desire to do better. On the Lasswell Values Scale, they rated lower than the others on affection and rectitude values, higher on wealth value and higher on well-being and enlightenment. They found no significant differences between the groups in acceptance of self and others, in self-concept or in the value categories of respect, power and skill. This study is interesting not from the point of view of what it actually found, but from the possibilities it opens up into the types of investigations that would be worthwhile. This is another general area which warrants more research.

From all of this, it is obvious to conclude that all areas still need more investigation. The child,

in the affective and cognitive domains, the teacher, the administrator, the building design, the organization of time, learning environment, materials, grouping of children and teachers, the long-term effects of the open space on the cognitive and affective domains of the learner, attitudes toward self, others, school; and the problems to be faced in implementing an open design. Long term evaluation is lacking in all areas. Definitive answers are not found in the literature. The research has been tackled piecemeal and researchers have tended to investigate specific questions without attempting to take a broader look at the whole question of the open area.

Team-Teaching

Team-teaching is one way of using the open area. It has been "in vogue" in the United States and to some extent Canada and England, since the late 1950's or early 1960's. Shaplin and Olds (quoted in Bassett, 1970, p. 109) give the following definition: "Team-teaching is a type of instructional organization, involving teaching personnel and the students assigned to them, in which two or more teachers are given responsibility, working

together, for all or a significant part of the instruction of the same group of students."

Bassett (1970, pp.110-112) lists four main points in support of team-teaching: (1) the advantage to the children taught by more than one teacher and exposed to the different strengths of the teachers, (2) the advantage to teachers by bringing them together to see different types of teaching; a special point is made about the young, inexperienced teacher being helped by the older, more experienced teacher instead of being isolated in a classroom, (3) there is a more flexible grouping of students than possible in the ordinary single teacher class; different size groups of children are possible, and large group instruction is not an absolute necessity of team-teaching, (4) teachers are encouraged to act professionally; they need thought and imagination because of the demands of the situation; "the processes of deliberation heighten involvement, and involvement intensifies the search for worthwhile solutions to problems (p.112)."

Bair and Woodward (1964) list twelve general characteristics of team-teaching (p.28-33):

(1) A teaching team consists of from three to seven or more teachers jointly responsible for the instruction of 75 to 225 or more pupils in one or more grades or age levels.

(2) Teams may have teachers assigned to different levels of responsibility, depending on their ability and experience, with higher salaries and higher status given to the senior teachers and the team leader.

(3) Most team-teaching programs permit supervision of the junior members of a team by the senior of leadership personnel. The schedule also permits less experienced personnel to observe the outstanding teacher adjusting his program as the teaching-learning situation develops.

(4) Team-teaching programs emphasize the team, rather than the individual teacher, in the planning, teaching, and evaluating cycle.

(5) In the classroom situation, however, teaching teams protect the professional autonomy of each teacher and stress the use of his unique abilities in the instruction of children.

(6) In many team-teaching programs, each member of the team specializes in a different curriculum area and helps

all members of the team plan, teach, and evaluate in the area of his specialty.

(7) All team-teaching programs emphasize the effective utilization of the strengths of each member of the staff.

(8) As team-teaching promotes non-gradedness within the school, so does non-gradedness promote team-teaching. The theory of continuous pupil progress is basic to most team-teaching programs.

(9) Team-teaching programs emphasize varying class sizes and class lengths based upon instructional objectives, context, techniques and pupil needs.

(10) Class size and length of periods are closely related to the Flexible Scheduling practices for pupils and teachers which are characteristic of many team-teaching programs.

(11) Many team-teaching programs use aides for non-professional tasks.

(12) Most team-teachers make more effective use of mechanical and electronic equipment.

The emphasis here seems to lie heavily on the teacher and the general organizational pattern of the school. Essentially, the assumptions about learning do not seem to vary much from the conventional classroom (although

there is a greater emphasis on the individualization of instruction).

Team-teaching has been carried out both in elementary and high schools. There is research into some aspects at both the elementary and secondary levels. All of the research reviewed here was carried out in the U.S. The assumption here has to be that it is still relevant to the Montreal area, in actual fact. Studies have tended to emphasize the teacher and the team, although there has been some attention paid to pupil attitudes and academic performance. This research seems to be more important for the directions it points, rather than for any definite answers which it gives.

Research on Team-Teaching:

Again, the main research into team-teaching is found in thesis dissertations. Bair and Woodward (1964) looked at the research to that date and made a summary assessment of team-teaching. The research into academic achievement (up to 1964) indicated no significant differences between team-taught children and others, in fact, the children in the team-teaching situations never performed below their grade level. They said: "It is critical that, at

an early stage, a team-teaching program be able to demonstrate clearly and honestly that pupils do at least as well as they would in a conventional program (p.197)." Pupil adjustment was satisfactory and parent opinion favourable. The impact of team-teaching on teachers was positive. They mentioned one point which has not been emphasized elsewhere but which would be significant from the point of view of a teacher in the situation: "Team-teachers willingly work longer hours. This seems to be a universal truth about team-teachers (p.213)."

Description and implementation. Olson (1971) investigated the role of team-leader in elementary school team-teaching with regard to the personal qualifications and professional skills required for it, the responsibilities and tasks which characterize the role, its influence on local school administration and the role of the teacher who serves as a member of the teaching team, provision for the role in state school law and school system policy and salary schedules (this was a local study carried out in Utah) and the positions of professional teacher associations regarding the establishment of such roles. He found that the concept of "master teacher" was applicable to

the team-leader role in differentiated staffing and that where differentiated staffing was proceeding most rapidly. professional teacher associations were generally involved in the development process.

Millard (1970) investigated organizational factors which contribute to the development of successful team-teaching programs. He makes five major recommendations: (1) flexible student grouping. (2) the use of various instructional modes especially the use of small group instruction, (3) flexible schedules for junior high and elementary teams (this does not seem as important for senior high teams), (4) consider the grade level to be team-taught and the method of teacher assignment when developing the organizational team design, and (5) provide adequate planning time prior to starting a team program. This fifth point has been emphasized elsewhere (Deibel, 1971) and would seem an important consideration in establishing innovative programs of any kind.

Trout (1971) made a detailed study of team-taught United States history programs in six Indiana schools. His results were largely negative: (1) team-teaching did not assure that cooperative planning would occur either

with other teachers or students, (2) team-teachers did not use any of the technical aids fifty percent of the time, but both teachers and students mentioned the use of technical aids during interviews, (3) team-teaching did not assure that instruction would be changed from one that is textbook-centred in content, (4) student group size did vary in each school, however, the change in the number of students in the groups did not alter the teacher-centred instruction, (5) Although it is often stated that teacher capability will be better utilized in team-teaching, there was no evidence that any school was attempting to determine the most capable person for tasks. In addition, teams which had time for extensive planning prior to the beginning of the school year seemed to function most smoothly. Finally, the ability of teachers to work together with other teachers was "highly significant" to the success of the team-taught program. Trout's study calls into question some of the assumptions about what actually happens in team-teaching situations. More investigations of this kind are needed in team-teaching schools to test whether these results are more generalized than would be apparent from the rest

of the literature.

Concerning teachers in teams. Several studies involve teachers in some way.

Ables (1972) examined morale within teacher-teams as affected by congruence of belief systems. He found that there was a significant positive relation between individuals relatively congruent with the belief systems of their team and the total factors of morale; that there was a significant positive relation between teaching teams with relatively congruent belief systems and the total factors of morale; and that there was a significant positive relation between teaching teams relatively congruent with the belief systems of their leaders and the total factors of morale. This would indicate that the greater the agreement between belief systems on a team, the higher the morale. Research is needed on the whole question of selection of teachers for teams.

Foley (1971) studied the relation between team leaders' leadership behaviour and the morale and effectiveness of their team members. He found that there was a positive relation between the leadership behaviour of team leaders and the morale of team members. He could not

draw any definitive conclusions about the teams' teaching effectiveness in relation to the leaders' behaviour. His final conclusion was that there were many factors other than leadership behaviour to be taken into account when trying to predict a team's teaching effectiveness. Again, more research is indicated to isolate these factors.

Dunn (1971) made a comparative study of block-time and team-teaching schedules in relation to a teacher's knowledge of pupils (in junior high school) and found that teachers in block time classes had significantly greater knowledge of their students than did the team-teaching teachers. This greater knowledge in turn led to an improvement in pupil attitude toward themselves. Dunn concluded that he had evidence that team teaching through its operational mode discourages teachers from securing information about pupils and is detrimental to fulfilling the guidance function of the junior high school. This is in direct conflict with the aim of greater individualized instruction basic to most team-teaching. It may be a finding specific to the age group investigated, but it allows one to speculate about some of the assumptions of team-teaching.

McCallum (1971) found no relation between the type of school (open space-team teaching or traditional schools) in which teachers teach and the kinds of problems they identify in children.

Miller (1970) and Kulaga (1971) both ran studies involving teachers and teacher aides. Kulaga found no evidence to support his hypothesis that a cohesive teacher- teacher-aide team had any significant influence on children's reading and arithmetic achievement. However, it did seem that a cohesive team had a positive effect on children's motivation and also on the way the children see the teacher as giving individual attention to their educational needs. Miller found no evidence of a positive relation between aide activity and the time that the grade-one teachers in his study spent in non-instructional or instructionally related activities. He did not find support for the assumption that an aide in the classroom allows more time for instructional activity resulting in improved performance by the children. There did not seem to be a positive relation between the way teachers spent their time and pupil achievement. The role of the teacher-aide is not clear and the results of these two studies

are inconclusive. This topic definitely needs more investigation.

Concerning children in team-teaching schools. Several studies directly refer to children in team-teaching situations in some way.

Burchyett (1972), found no significant differences in the academic achievement of children in grades three, four, and five in a non-graded, multi-age, team-teaching school compared to that of similar children in a self-contained classroom. Children in the experimental school excelled in creative thinking and generally in motivation.

McCallum (1971) found no differences in the types of problems children experienced, the duration and depth of the problem, nor who helped with the problem, between children in open space team-teaching and traditional elementary schools.

Lueders-Salmon (1972) developed an instrument to measure classroom activity in self-contained classrooms and open-space team-teaching schools. She found that open-space classrooms were generally more "active". She also found that teams teaching more than one grade level had less "active" classrooms than those teaching

one and speculated that this may have been due to inadequate planning by the particular teams sampled.

The child in the team-teaching situation seems to have been relatively neglected in the literature.

Specific research in this area is not very extensive, nor are the results of what has been done definitive. Again, the research suffers from a lack of investigation of general issues. One question of a general nature that could be investigated is: in a team-teaching situation, if it is highly organized and scheduled, does the child have a chance to be more than an essentially passive recipient of pre-packaged material?

In addition, the advantages and characteristics listed by Bair and Woodward (1964) and Bassett (1970) have yet to be empirically tested in any kind of exhaustive way.

A General Critique of the Literature on Open Areas and Team-Teaching:

The first difficulty with this literature is that the open-area is very loosely defined in the literature. There is no formula for its use, and no real consistency of approach in the research. Even where the narrower definition of team-teaching is applied, more than one

interpretation is possible. This definitional problem, in itself, makes interpretation of the research difficult. In addition, the research has not been carried out in a concerted fashion. One is confronted by a series of small individual forays, usually using inadequate samples (often in solving only one or two schools, or even single classrooms). The basic descriptive groundwork, a necessary forerunner of the systematic empirical testing of assumptions, has not been undertaken, and the empirical testing is anything but systematic. Cockburn (1973) has pointed to the difficulty of isolating the open space as the only affective variable. Unfortunately, there is a lack of attention to this point in the literature.

Several dissertation studies were undertaken in particular school districts with an apparent view to recommending or rejecting the building of open area schools by the school authorities. This type of research is suspect on several counts: the samples are small; often the results show no significant differences between open area and conventional classrooms; and where significant differences are found, the openness of the architectural structure cannot be isolated as the contributing variable.

Criteria for the "open area" are not established beyond the basic lack of interior walls. Studies are lacking of "inputs" other than the shape of the rooms and the cost of construction, and of "outputs" other than short-term academic and attitudinal variables.

The questions being investigated tend to ask about the difference of effect between open space and conventional classrooms. There has been no research into specific effects of the open areas and team-teaching. Long-term effects have not been looked into.

There has been no research into possible detrimental effects of an open area. For instance, what happens to children who have learning disabilities? Do they find the increased movement generated by architectural openness disturbing? Are teacher anxieties increased? What about criteria for selecting teachers to work together?

Many questions have been raised in the research reviewed, none have been investigated beyond the initial stage.

Open Education

I hear . . . and I forgot

I see . . . and I remember

I do . . . and I understand

- Ancient Chinese Proverb.

Where the emphasis, in the main, in team-teaching has been on instruction, teaching and organizational factors, the open school is biased toward the process of learning and the learner. Cockburn (1973) quotes Musella of the Ontario Institute for Studies in Education: "Open education is education that maximizes student choice in all dimensions of schooling. It can be considered a multi-dimensional set of concepts which describe a school or classroom along a continuum of openness."

Open education is a state of mind rather than a particular building design. That is to say, to take down walls is not to create open education any more than it is to ensure cooperative teaching (as shown earlier). However, open education can occur in the open space design school.

Blackie (1969) has said: "The one essential point in the whole educational system is the point of contact between teacher and child. It is to make this contact as fruitful as possible that everything else - authority,

administration, inspection, curriculum exist. If the system fails to work at this point of contact, it fails everywhere (p.4)." This really gets right to the heart of the matter and helps to expand the definition.

Open education involves a view of the learner as an active and responsible participant in his own learning. Weber (1971) says:

"Informal, as I understand it, refers to the setting, the arrangements, the teacher-child and child-child relationships that maintain, restimulate if necessary, and extend what is considered to be the most intense form of learning, the already existing child's way of learning through play and through experiences he seeks out for himself.

The active form of such learning is considered to be curiosity, interest, and the needs of a child's own search for definition and relevance. The school setting or environment must be rich enough to foster and maintain this curiosity; it must be free enough to allow and even to help each individual follow the path indicated by his curiosity. Entwined with the experience gained through a child's own use of the school environment is the learning

of skills, because skills are needed in the process. How a child would learn in the school setting was also individual - he would learn in his own way, at his own pace, exploring his own interests, for his own purposes (p.11)."

Weber's book is about the English infant school and informal education. It was in the primary and now also in the junior schools in England that a system of education evolved (and is still evolving) which seems to make a physical reality of Musella's definition. However, there has been implementation and systematization of the idea in both the United States and Canada. Much of the writing on the subject comes from North America , and is relevant to education systems in this country.

Open education has roots in philosophy and psychology: Rousseau, Dewey, Isaacs, Montessori , Piaget and Bruner, to name a few. Weber (1971) devotes a chapter to this background, which gives the rationale for informal education in England very clearly.

Piaget. Jean Piaget is the main theoretical influence in open education. Pryke (in Rogers, 1970) puts it simply:

"Teachers are becoming more and more influenced by

the work of Jean Piaget . . . . Three facts about children's learning are now well established: (1) Young children learn by actively participating in their learning (2) They learn by talking and discussing. (3) They learn through play (p.270)."

Piaget's theory of the development of the intellectual capacity is complicated. The best source which collects the theory in one coherent whole is Flavell (1963), Baldwin (1967) also gives a good simple explanation. Piaget's is a theory of developmental stages. It fits within a biological framework which includes the idea of the adaptation of function to the environment and the "complexly patterned interrelationships within nature." (Baldwin, 1967, p.172) Behaviour in human beings seems parallel to the biological picture of a complex, mutually regulatory system in equilibrium. There are two features of biological evolution which are fitted to human development: (1) the continuous fitting of old structures into new functions, and the development of new structures to fill old functions under changed circumstances; and (2) . . . these adaptations do not develop in isolation. "All of them form a coherent pattern so

that the totality of biological life is adapted to its environment (Baldwin, 1967, p.173)." Piaget postulates sensorimotor and cognitive schemata (a schema being the element of structure that adapts) which are involved in the adaptation processes of assimilation and accomodation. He defines four stages of reasoning process, from a sensorimotor stage to a stage of formal operation of thinking, and correlates them with age. He expresses his theory in mathematical language, using set theory and the concept of group with its property of reversibility of operation, which is important if the system is to maintain equilibrium. One of the more influential points of his theory for the classroom is the idea that the child develops through cognitive stages which are invariate in sequence and which are not reached by all children at the same time.

That is a brief, generalized explanation of his theory. Eleanor Duckworth (in the ESS Reader, 1970), quotes him directly on education:

"The question comes up whether to teach the structure, or to present the child with situations where he is active and creates the structures himself . . . . The goal in

education is not to increase the amount of knowledge, but to create the possiblities for a child to invent and discover. When we teach too fast, we keep the child from inventing and discovering himself . . . . Teaching means creating situations where structure can be discovered; it does not mean transmitting structures which may be assimilated at nothing other than a verbal level (p.137)."

". . . I do . . . and I understand . . ." is a proverb often directly quoted by open education writers, and its general philoscphy pervades the literature. There is a sense that knowledge can be transmitted horizontally as well as vertically, in fact, that knowledge and learning, unlike water, are not necessarily best encouraged by going from higher to lower and that learning is a process, not so much a finite product.

The child, then, is an active participant in his own learning. Open education, in addition to having a sound theoretical background in developmental psychological theory (for a complete treatment of this see Silberman, Allender and Yanoff, 1972), also finds support for others of its ideas in other educational research. For instance,

children are usually grouped heterogeneously in informal classrooms. Ridgeway and Lawton (1965) wrote quite exhaustively on this area of informal schooling. Esposito (1973) reviewed the literature in general on homogeneous and heterogeneous ability grouping and found largely negative results for homogeneous grouping, and support for heterogeneous grouping. A short description of an open classroom might be as follows:

The open classroom is flexibly arranged into learning centres where children and teachers move around quite freely and do not have single assigned places for work. Many activities will be taking place at once. A great deal of individual work is done, but groups will form and disband as interests arise and are exhausted. The day is not usually broken up by a rigid timetable, but there is provision for children to work as long as possible or necessary on whatever they are doing. Subjects are usually combined or treated in a more integrated way. The teacher is not the main focus of the classroom. The children have a good many choices of activities, which have been provided in a rich environment.

There are many descriptions of the open education

classroom and its processes in the general descriptive literature. Weber (1971), Rogers (1970), Plowden et al (1966), Ridgeway and Lawton (1965), Barth (1969, 1970a, 1972), Rathbone (1970), Berson (1971), Hassett and Weisberg (1972), Kohl (1967), Marsh (1970), Yeomans (1969a, 1970), Brown and Precione (1973), Charbonneau (1971) and Blackie (1963, 1967), to name a few, all contain adequate descriptions of what happens in an informal classroom.

While a great many of these "practical" descriptions are of British primary schools, this does not, in itself, make them irrelevant to the North American scene. Silberman (1970) gives support for this:

"There seem not to be any disruptive youngsters or even restless youngsters in informal classrooms - indeed, few of the behavior problems with which American teachers are almost always coping. The reason has relatively little to do with the fact that British culture cultivates greater respect for authority, for teachers in formal English classrooms have the same problems of maintaining control that American teachers do. . . . The formal classroom . . . seems to produce its own discipline problems. It produces them by the unnatural insistence

that children sit silently and motionless, by the unreasonable expectation that they will all be interested in the same thing at the same moment and for the same length of time, by the lack of trust the plethora of rules implies . . . (p.228-229)."

One can only go so far in the descriptive literature in examining open education. However, there is a growing body of research literature available, which is developing in a more coherent fashion than the research into the open area and team teaching.

Research on Open Education:

Some British research. Both Silberman (1970) and Evans (1971) refer to D.E.M. Gardner's long-term research in British informal classrooms. Her "overall findings were favorable for the British integrated day classrooms compared to British traditional classrooms, although the traditional classrooms were not as carefully selected as the experimental, integrated day classrooms (Evans, 1971, p.4)."

Silberman (1970, p.260-261) refers to a study between 1951 and 1963 in which Gardner compared children in formal and informal infant and junior schools on five tests of

achievement and nine tests of attitude. Children in informal schools had better results (Silberman mentions that Gardner does not give enough information about her methods to make clear the adequacy of the controls), and there were some other interesting differences noted: "in general, children from informal schools were more relaxed, showed less anxiety and more initiative; independence, and self-confidence, and had an easier relationship with their peers and with the testers."

Moran (1971) investigated the integrated day with a questionnaire completed by 181 teachers. He noted the lack of previous writing - 1 MEd thesis and a descriptive book. He found five major types of the integrated day as interpreted by the respondents. In type A the choice of the activity is not made by the child, but children will be working at different activities in the same class, or at different tasks within the same subject activity. In type B assignments are given to the child, but he has the choice of when and in what order to do them. In Type C there is directed work by the teacher in the morning, followed by same freedom of choice for the child in the afternoon. In type D (used by teachers

of infant classes) the teacher organizes various activities or "structured" situations and the child is allowed to choose freely. There is a collective time. The teacher can withdraw children for guidance and help with the three R's. In type E, the children choose their activities only occasionally - perhaps two days a week or an afternoon. For many teachers in the survey, work in mathematics, reading and English are most important and some would exempt these subjects from the integrated day.

Far from giving a single picture of the integrated day in British primary and junior schools, this investigation serves to illustrate the diversity of the British scene.

In keeping with this Barth (1970a, p.195) says "What has been called a 'revolution' in British primary schools is limited to perhaps a quarter of the infant and junior schools and characterizes the former more than the latter."

Bealing (1972) made a survey of organization of classrooms by 189 junior school teachers regardless of whether or not they thought they used the "integrated

day" approach. He notes the lack of systematic evidence of how innovations such as "the integrated day" affects what children learn. There are almost no attempts to define the integrated day in terms of its underlying values or assumptions or classroom practice.

In general, then, the British research into informal education seems inadequate, at least in amount. Apart from Gardner's studies (with the noted possible lack of adequate controls), the other work is at the survey level of research. The major British writings on open education are of the descriptive, positive kind.

American and Canadian research. American and Canadian research is more extensive than its British counterpart. Cockburn (1973) makes a valid point about some of the difficulties inherent in the literature:

"Much of the current literature on open education is concerned with evolving a theory to support or validate existing practices and with developing criteria to measure the openness of programs and to provide a framework for research. Even though research on open education does exist, it is difficult to evaluate since in most cases the specifications of the programs studied are

not clear (p.v)."

This development of a framework for research is necessarily slow work; although worthwhile, because it should enable research to establish definite and validated conclusions. Evans (1971) points to other difficulties encountered by the researcher into open education.

"One difficulty in analyzing open education is that it is conceived of as an evolutionary process; that is, change is always occuring. Static models, or even educational models per se, prescriptions, given sets of definitions, or the use of behavioural objectives are deliberately avoided by open education advocates. Instead, emphasis is given to the unique child, specific events, the intuitive reactions of teachers and students engaged in the process of learning. The key word is process. Eisner's succinct analysis of expressive and instructional objectives is pertinent:

> Expressive objectives differ considerably from instructional objectives. An expressive objective does not specify the behavior the student is to acquire after having engaged in one or more learning activities. An expressive objective

describes an educational encounter: it identifies a situation in which children are to work, a problem with which they are to cope, a task they are to engage in--but it does not specify what from that encounter, situation, problem, or task they are to learn. An expressive objective provides both the teacher and the student with an invitation to explore, defer or focus on issues that are of peculiar interest or import to the inquirer. An expressive objective is evocative rather than prescriptive.

Eisner's distinction is useful in highlighting open educators' concern with expressive objectives as opposed to researchers' use of instructional objectives. Researchers often use only performance measures such as intelligence and achievement scores to evaluate their work. In assessing open education, an important initial stage is determining whether open classrooms are operating as their proponents suggest. . . . As open classroom processes become better identified, it seems reasonable to expect that a variety of outcome measures, similar to ones used by Gardner (1950, pp. 65-66), will be

employed to satisfy questions raised by parents, educators, and teachers about the long-term effects of open education (p.3-4)."

There has been a concerted effort in the literature to identify assumptions, desired outcomes and characteristics of open education. Barth (1969) lists 28 assumptions of open education:

The Assumptions of Open Education

1. Children are innately curious and display exploratory behaviour quite independent of adult intervention.
2. Exploratory behaviour is self-perpetuating.
3. The child will display natural exploratory behaviour if he is not threatened.
4. Confidence in self is highly related to capacity for learning, and for making important choices affecting one's learning.
5. Active exploration in a rich environment offering a wide array of manipulative materials will facilitate children's learning.
6. Play is not distinguished from work as the predominant mode of learning in early childhood.
7. Children have both the competence and the right

to make significant decisions concerning their own learning.

8. Children will be likely to learn if they are given considerable choice in the selection of the materials they wish to work with and in the selection of questions they wish to pursue with respect to those materials.
9. Given the opportunity, children will choose to engage in activities which will be of high interest to them.
10. When more than one child is interested in exploring the same problem, or the same materials they will often choose to collaborate in some way.
11. When a child learns something which is important to him he will wish to share it with others.
12. Concept formation proceeds very slowly.
13. Children learn and develop intellectually not only at their own rate but in their own style.
14. Children pass through similar stages of intellectual development each in his way and at his own rate and in his own time.
15. Intellectual growth and development takes place

through a sequence of concrete experiences followed by abstractions.

16. Verbal abstraction should follow direct experience with objects and ideas not precede them or substitute for them.

17. The preferred source of verification for a child's solution to a problem comes through the materials he is working with.

18. Errors are necessarily a part of the learning process; they are to be expected and even desired for they contain information essential for further learning.

19. Those qualities of a person's learning which can be carefully measured are not necessarily the most important.

20. Objective measures of performance may have a negative effect upon learning.

21. If an individual is involved in and having fun with an activity, learning is taking place. Evidence of this learning is best assessed intuitively, by direct observation.

22. The best way of evaluating the effect of the school

experience on the child is to observe him over a long period of time.

23. The best measure of a child's work is his work.

24. The quality of being is more important than the quality of knowing; knowledge is a means of education, not its end. The final test of education is what a man is, not what he knows.

25. Knowledge is a function of one's personal integration of experience and therefore does not fall into neatly separate categories or disciplines.

26. The structure of knowledge is personal and idiosyncratic, and a function of a synthesis of each individual's experience with the world.

27. It is questionable whether there is a minimum body of knowledge which is essential for everyone to know.

28. It is possible even likely, that an individual may learn and possess knowledge of a phenomenon and yet be unable to display it publicly. Knowledge resides with the knower not in its public expression.

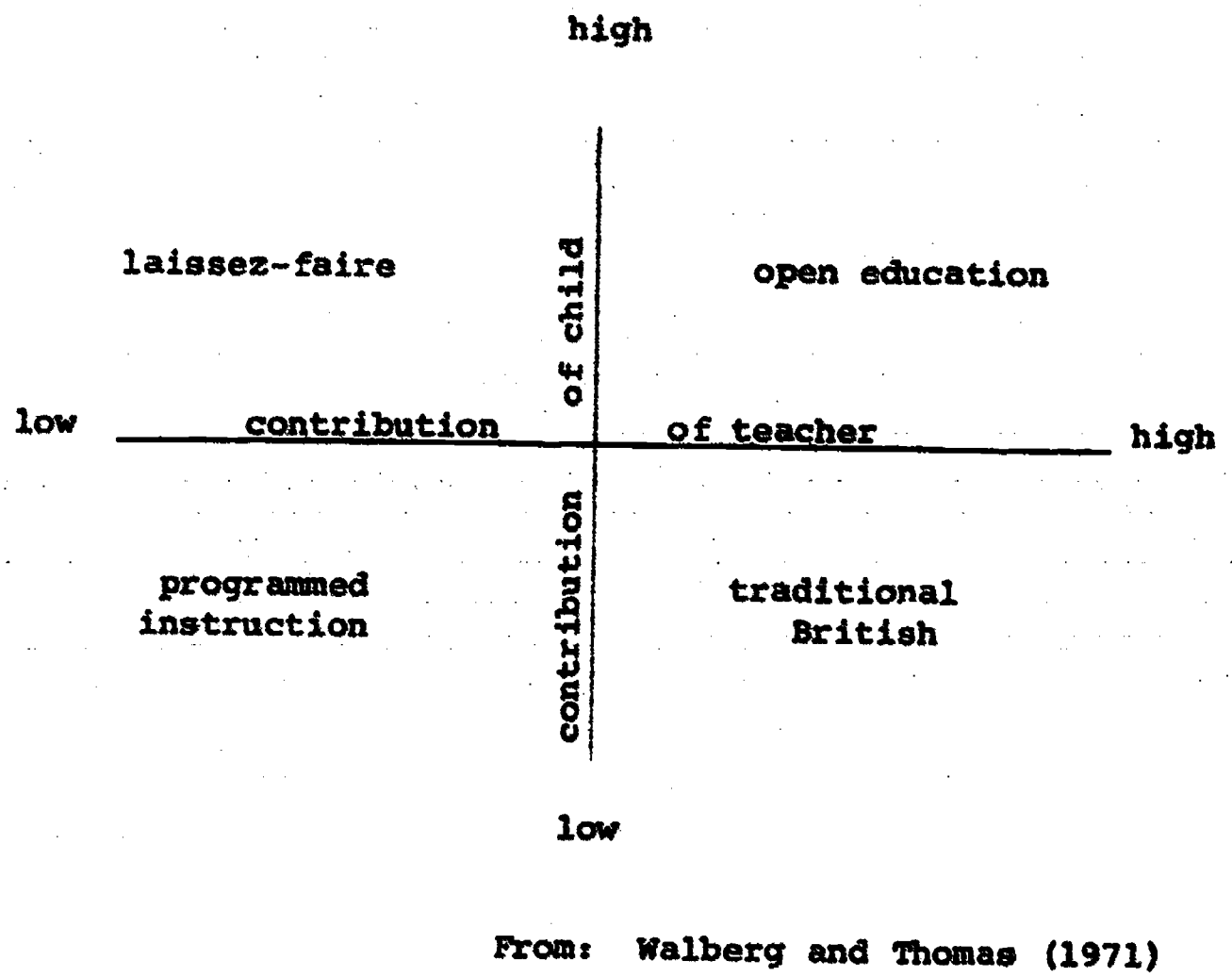
Rathbone (1972) sets down the "desired outcomes" as:

"- The child will take responsibility for his own decisions and actions.

- The child will be autonomous, acting and making decisions independently.
- The child will have the ability and desire to set his own goals.
- The child will possess self-discipline and will not need externally applied discipline.
- The child will learn self-direction as a basis for organizing his life; he will be self-actualizing.
- The child will have a capacity for long-term involvement at learning tasks of his own choosing.
- The child will possess a willingness to experiment; he will demonstrate an ability to seek new solutions and new problems.
- The child will have self-confidence.
- The child will exhibit trust in himself and others
- The child will feel free; he will be socially and intellectually adaptable.
- The child will feel comfortable with and confident of his own learning processes.
- The child will be in touch with his own inner impulses; he will not fear fantasy or feeling.
- The child will value the ethic of open education (p. 537-538)."

Figure 1

Double Classification Scheme Based on Extent to which (1) the Individual Teacher and (2) the Individual Child is an Active Contributor to Decisions Regarding the Content and Process of Learning (from Bussis and Chittenden, 1970)



From: Walberg and Thomas (1971)

Bussis and Chittenden (1970) identified ten major themes in open education, which were later modified to eight by Walberg and Thomas (1971):

"THEMES IN OPEN EDUCATION

- Provisioning for Learning. The teacher provides a rich and responsive physical and emotional environment.
- Diagnosis of Learning Events. The teacher views the work children do in school as opportunities for her to assess what the children are learning, as much as opportunities for children to learn.
- Instruction-Guidance and Extension of Learning. The teacher acts primarily as a resource person who, in a variety of ways, encourages and influences the direction and growth of learning.
- Humaneness - Respect and Openness and Warmth. The teacher promotes an atmosphere of warmth, openness, and respect for one another.
- Reflective Evaluation of Diagnostic Information. The teacher subjects her diagnostic observations to reflective evaluation in order to structure the learning environment adequately.

- Seeking Opportunity to Promote Growth. The teacher seeks activities outside the classroom to promote personal and professional growth.
- Assumptions - Ideas about Children and the Process of Learning. The teacher's assumptions about children, the process of learning, and the goals of education are generally humanistic and wholistic. Teachers are aware of and respect the child's individuality and his capacity to direct his own learning.
- Self-Perception. The teacher is a secure person and a continuing learner."

They made a thorough review of the literature up to 1971 using the eight themes as identifying characteristics of open education. They constructed a list of pedagogical characteristics of open education teachers at the primary level, and from this, developed and tested a classroom observation rating scale and a teacher questionnaire for use in assessing how closely classroom practices coincide with open education claims. This work is one of the initial, major pieces of research in the field.

Traub, Weiss, Fisher and Musella (1972) have also

developed an instrument for rating the openness of school programs. Their teacher questionnaire (Dimensions of Schooling - DISC) can be used, the authors assume, at any educational level, (this is in contrast to the Walberg-Thomas instrument which was developed with a view to primary schools. Another difference between the two instruments is that the DISC makes no attempt to involve a comparison of observation of actual classroom practices with claimed practices as reported on the teacher questionnaire).

Some descriptive and definitional research. Rathbone (1970) examined open education and its implications for teacher education. He found that the open education classroom is flexible, children are usually vertically grouped, there is a great deal of individual work, with no precise and universal standardization of objectives. The teacher is a facilitator and resource rather than a prescriber and director of learning. Teacher education for this type of teaching has to be revised to fit an open education pattern, and later, the open education teacher requires the in-service support of the advisor for individual teachers and an advisory for schools and

districts. This was one of two pioneer theses in the field (the other was Barth, 1970).

Pursely (1971) designed a theoretical model for open education which incorporated a supporting role, "instructional consultant." This parallels Rathbone's (1970) "advisor." She emphasized, as do other writers (e.g., Blackie, 1967) that the key elements in open education are relationships.

Taylor (1972) also studied open classroom environments and looked at the implications for teacher education. She too defined the role of the teacher as a facilitator of learning. From classroom observation of beginning and experienced open-classroom teachers, she found that the beginning teachers were less learner-centred than the experienced teachers. She concluded that there was a need for pre-service and inservice training to be a unified program for teacher education. She suggested that teacher education programs for informal education need themselves to be carefully planned and structured. that both beginning and experienced teachers need themselves to use an inquiry method of learning, that theory and practice must be integrated in the programs, and that

the teachers must be prepared for continuous self-evaluation. Both the school systems and the universities need to have a long range commitment to open education for an effective teacher education program to be developed.

Yeomans (1969a, 1970b) has also discussed at some length the preparation of teachers for open education.

Troutt (1972) was concerned with establishing an operative definition of open education. He developed a Classroom Observation Scale for Open Education from a thirty-five item check list of features of open education, as well as establishing a set of characteristics to be used in implementation. This appears to be a less extensive treatment than the Walberg-Thomas Study.

Higgs (1973) designed an instrument called "Teacher-Perceived Patterns of Control." It deals with pupil physical movement, access to supplies and services, and opportunities for self-direction and produces a school score on an open-custodial continuum. The instrument was used with a good size sample of elementary, middle and high school teachers. The elementary schools tended to be restrictive about movement in and around the building but open about within class routine and being in place

at a certain time. High schools were the opposite, and middle schools did not form a separate group by themselves, but tended in both directions.

Morse (1972) surveyed five New York State elementary open classrooms in depth and 30 school districts in general which reported at least one open classroom. He used Rathbone's (1970) model of open education. One interesting result was that he found that competition was more pronounced in classrooms that emphasized group instruction. This would seem to mean that in classrooms where there was a great deal of individual work, children did not find it necessary to compete with each other, but were developing different standards for judging their progress and worth.

Implementation. Whitehall (1972) studied the adaptation and use of existing buildings for open education in Indiana schools. His recommendations have some importance for implementation: (1) Adaptation of buildings helpful, but not vital, since open education is essentially a mental concept. (2) Deliberate planning and staff selection appear to be major factors in success of open programs. (3) Those involved in implementing an open

program should be involved also in the planning. (4) Parents need to be prepared for and educated about open education.

Pavolvich (1972) studied the transition from a formal to an open school environment in one elementary school. Interrelated conditions which were important to the success of the open school were, the selection of a staff open to change, the reeducation of staff in their new role, the support of the superintendent of schools and the School Board, sufficient time for the new techniques to be fully incorporated into the program, the opportunity for pupils, teachers and parents to voice their opinion on the new open school, the staff determination of the degree of openness. In addition, the teachers shared in the selection of new school personnel the development of policies for the operation of the new school and the selection of materials and equipment.

Elofson (1973) used Walberg and Thomas's (1971) Observation Rating Scale, a teacher questionnaire and an interview to study six elementary school teachers who were moving towards open education in their classrooms.

Coletta (1973) used the Barth Scale, which measures

the extent to which an individual agrees or disagrees about open education, with 191 primary teachers from open and traditional classrooms. He found no significant differences between the open and traditional teachers in selected personality characteristics. He found that the Barth Scale assumptions differentiated between open versus traditional teachers, high rated open teachers versus high rated traditional teachers, and high rated open versus low rated open teachers. He concluded that the scale might be of value in assisting school systems in the selection of teachers for open classrooms.

Amarel, Bu[illegible]s and Chittenden (1973) made a preliminary investigation of teacher attitude to change to an open approach. They made three psychological assumptions:

"- consistent and enduring behaviour patterns are mediated to a large degree by the structure and content of belief systems;

" - behaviour changes in teachers that do not involve corresponding changes in beliefs and attitudes (but are induced by salesmanship, urging, or imposition) are hypothesized to be non-enduring and/or emphemeral in nature;

- basic changes in attitudes and beliefs will be reflected in behavior (some in highly predictable areas of behavior, some in unforseen areas) but with unknown latencies (p. 3)."

They had not, in this paper, completed the analysis of their data, but could indicate trends and areas of interest. Their sample consisted of 64 Kindergarten through third grade level teachers, 30 of whom were assisted by advisory groups on open education (special in-service teacher education programs).

They identified different teachers' "frames of reference" and compared them to the teachers' perception of support of the advisory and made tentative conclusions:

"Those teachers who seem to be operating from a more independent, active, 'evolving standards of quality' framework are clearly drawing from the whole range of support available to them. . . . In contrast, those teachers operating from more of a 'model' or 'method' framework--those who regard open education more as an 'it' which they are trying to do--they are pulling almost exclusively on page one support. (Page one categories, in their scheme, reflect a receptive, 'taking in' attitude towards advisors) (p. 10)."

This is another tentative, "exploring the countryside" type of study.

All the research reviewed so far tends to be of a descriptive nature but has much to say about necessary conditions to be established in setting up an open education program.

Empirical testing of some variables. Innes (1971) used a specimen record (a narrative describing the precise behaviour of a subject) technique to assess the behaviour of children in inner city classrooms which spent part of each day in open and part in closed settings. Environmental force units, which are used to categorize the types of behavioural influences in the social environment of a setting, were used to compare the same subjects in open and closed settings. General patterns of behaviour in the two settings were similar, but there was a significantly greater amount of social interaction in the open setting. In the open setting, more social interactions occured in which students encouraged each other in activities, while in the closed settings more social interactions were categorized as casual exchange. "Asks for help" interactions in the closed settings were usually

requests for answers to questions, whereas, in the open settings, they tended to be asking for help in solving problems. In the open setting, more social interactions centered a curriculum than in closed settings. The results were generally in favour of the open setting.

Anifant (1972) investigated risk-taking behaviour in children in open space and traditional school environments. He hypothesized that children who had been in open space schools for three years would be more inclined to risk-taking behaviour than children who had been in traditional schools for three or more years. He also investigated sex and grade differences in risk-taking behaviour. His major conclusion was that the learning experience in an open school increased the chances of risk-taking behaviour more than a traditional school. This, perhaps, begins to lend some support to the ideas of independent learning which are so integral to open education.

Corlis (1972) and Corlis and Weiss (1973) investigated the dimension of curiosity in relation to open education. Barth (1969) had claimed that the development and enhancement of curiosity in children was the key to

further learning. Barth suggested, in effect, that all children will learn if given the freedom to manifest their innate curiosity. The study involved 237 eleven year olds in six schools in Ontario. The DISC questionnaire, mentioned earlier, was used to determine program openness and a task-oriented instrument, the Non Verbal Curiosity Test, to measure curiosity. Three different architectural types of schools were used: open space, mixed space and closed space. The interrelations between sex, program and architecture were studied. The major contrast between program openness (high and low) and curiosity was not significant. The results seemed to indicate that, for this study, higher levels of curiosity behaviour were associated with moderate amounts of program openness. The general conclusion is that a moderate amount of program openness may be the optimum environment for fostering curiosity behaviour and further learning.

This is one of the first studies to try to test empirically some of the basic assumptions of open education. It could be questioned in a number of ways. The number of its schools and subjects are small, the instrument

developed for it to measure curiosity is not necessarily valid, and its conclusions, in any case, are not definite. Despite these criticisms, it is important, if only as an indicator that research into open education can move on from the descriptive level, once this is established.

Reel (1973) studied effects of self-directed learning in an open elementary classroom. The subjects were 66 fifth and sixth grade children in a laboratory school on a college campus, who were given the responsibility of self-directed learning in an open classroom and two control groups in a traditional setting. The major finding was that there was no significant difference between the battery mean scores on the Stanford Achievement Test of the experimental and control groups. The positive benefit of an open mode of instruction may be that, in addition to comparable achievement test scores, something other may be happening in human terms: a freeing from the fear of being wrong and a trust in the individual's worth. This remains to be tested explicitly.

Charbonneau (1971) gives further evidence that children taught in an open situation do not suffer when tested on standardized achievement tests. In yearly testing (Stanford

Achievement Tests) she has found her children , taught maths by a maths lab approach, to be ahead of grade level in all areas of mathematics.

Greener (1972) compared primary school children in multi-age groups, open classrooms with parent participation with children in traditional classrooms. One hundred and twenty four children from kindergarten, first and second grades were involved. He found that open classroom techniques were generally superior to traditional techniques in increasing intelligence, showed no significant difference in developing creative abilities and produced higher academic achievement conclusively at the Kindergarten level only. The study is somewhat suspect because the traditional techniques seem to have been very narrowly defined as self-contained classrooms, with desks and chairs usually arranged in rows and with teachers using a cite-memorize-recite-test method of instruction. This would tend to unfairly bias the results in favour of the open technique used in the study.

Tuckman, Cochran and Travers (1973) studied open classrooms during the initial year of operation with respect to how they differed in terms of teaching process

(behaviour of teachers) and teaching product (outcomes of students) in relation to ordinary classrooms. Their results generally favour the open classroom. They found that their training procedure (which included a trip to England to study the British infant school; a summer workshop; consultant visits during the year and in-service workshops) did produce effectively open classrooms. The open classroom enhanced students' self-images and liking for school and did not seem to affect academic achievement. The study emphasizes the careful planning needed to bring about open classrooms and also the need for definite, consistent and continuous support for the effective running of open schools.

Rentfrow, Goldupp and Hurt (1973) made a preliminary report of a long term study intended to develop a situational task methodology for evaluating process outcomes in the open classroom. They decided to stage a quasi-natural event (in this case teacher absence) to measure the independence of child learning in the classroom environment (since this independence is one of the goals of open education). Their reported findings are of a pilot study which included six experimental and two

comparison classrooms. They found significantly more inappropriate behaviour by children in the comparison classrooms than the open classrooms. There was a significant difference between teacher absent and teacher present behaviour in the comparison classrooms, but none in the open classrooms. These findings generally favour the open classroom situation.

Conclusion

In general one could say that research into team-teaching and open space teaching is unsatisfactory due to inadequate definitions and identification of variables. Research into open teaching, while more satisfactorally planned, really offers no more definite answers at present because it is still at the initial stages of definition. However, there is an effort in the literature on open education to define issues and identify characteristics. Much work remains to be done in terms of long-term assessment of the open approach.

Open-area teaching is not necessarily open teaching, and open teaching does not necessarily occur in an open-area with more than one class and teacher. However, open teaching <u>can</u> take place in an open area. Certain aspects

of team-teaching, for instance, cooperative planning and exchange of ideas between teachers should happen in a school where there is open education.

Open teaching appears to be a very good way to use an open area. There are several reasons. First of all, if the open area is being used essentially as separate classrooms, with a teacher instructing a group in a fairly traditional manner, any rationale for having made the space open and for having brought the groups into visual and audial contact is nullified. Throwing teachers together does not make them more open and there has been no assessment of long-term effects on children. Both teachers and children would probably be less restricted by noise and visual distraction in a traditional classroom set-up. Team teaching in an open area has practical limitations too for both children and teachers. One of the major drawbacks would be that in most team-teaching situations, a fairly rigid timetable of events would be followed, leaving little room for individual investigation or unplanned but valuable experiences which do occur in classrooms. In contrast, an open teaching approach to an open area, with interest areas (for upper

elementary grades this might mean a writing area, a reading area, a math-science area, a "messy" area and a display area), a relatively unscheduled day, a great deal of individual work with some group work, the advantages to the children of being exposed to teachers other than their own on an individual basis and also to children in other groups, could be an interesting and valuable educational model.

However, as stated before, open teaching need not take place in open areas, and perhaps, should be developed in more traditional buildings, where practical drawbacks of the open area, such as the need for good staff relationships in teams, would not be so apparent.

Open teaching needs a very careful and slow development to be successful. Obviously, it will not work if anyone simply goes to teachers and tells them to implement it. "Any program of education <u>imposed</u> on teachers cannot be considered <u>open</u> education. (Spodek in Nyquist and Hawes, 1972, p.256) Obviously, it cannot work if children are still seen essentially as passive recipients of knowledge. Nor can it work if teachers themselves have not been involved as individuals in the process

of learning.

Future Research in Montreal

One question of concern is what research plan should be followed in setting up long-term studies of open education. The first major task is to identify where open education occurs. This may be in architecturally open schools, but, as has been pointed out, could also be in more traditionally structured buildings. The identification process could use the instruments already validated at OISE and EDC (DISC and the Walberg-Thomas instruments) to determine how closely open education in Montreal fits the dimensions defined in the literature for other areas.

Follow-up studies could then be undertaken to empirically test some of the assumptions about learning, process outcomes and other variables of an open education mode of instruction. For instance, some investigation is needed into the effects of open education on children with reading problems or learning disabilities. Perhaps there are children who need a more overtly structured environment than that provided by the open classroom. This needs to be established.

Rogers (1970) gives some lead as to where research needs to go:

" . . . How, in fact, do children in such schools perform on various objective measures when compared to children who have had quite a different sort of school experience? Obviously, academic achievement is not the basic goal of such schools, but since it is not, what effects do these schools have on children's attitudes towards school, teachers and peers? How does this experience affect their approach to learning, the problem solving strategies they adopt, their persistence, their curiosity (p. 297)?"

Traub, Weiss, Fisher and Musella (1972), Rathbone (1972) and Chittenden and Bussis (1971) in Nyquist and Hawes (1972) have all written extensively on areas of open education needing research. The Walberg-Thomas Research shows one scheme to follow. All of these sources should be consulted to plan the research strategy in detail.

Further worthwhile investigations in the literature and by research should be undertaken in the areas of peer teaching, differentiated staffing, grouping of children and contingencies in classroom design all of which are related to open teaching.

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Books

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An investigation of teachers in England. It deals with the idea of rôle conflict and the teacher's rôle. He offers strategies for reducing 'dysfunctional' conflict.

Simon, A., and Boyer, E. G. (Eds.) Mirrors for behavior: An anthology of classroom observation instruments. (Vol. 1-6). New York: Teachers College Press, 1966.
A necessary tool in the development of observation instruments for researchers.

Open-Area:

Educational Survey No. 16. 'Open-plan' primary schools. London: HMSO, 1973.
- survey carried out in 1970-71 involving 53 primary schools (on debit side - some children working at less than capacity - eg., girl doing ¼ hours work for whole morning);
- good deal of lining up waiting turn to see teacher.

Gross, R., and Murphy, J. Educational change and architectural consequences: a report on facilities for individualized instruction. New York: Educational Facilities Labs, Inc., 1968, 88pp. (Available ERIC ED 031 061)
Quoted from Cockburn (1973) (item 86): "These designs and criteria of spaces for new approaches to education in pre-primary, primary, middle, and secondary schools are meant to stimulate new perspectives on planning actual schools."

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Team-Teaching:

Bair, M., and Woodward, R. G. Team-teaching in action. Boston: Houghton Mifflin Co., 1964.
A comprehensive look at team-teaching in the States, which includes definition and characteristics as well as an assessment and the findings of early research.

Bassett, G. W. Innovation in primary education. London: Wiley-Interscience, 1970. (Good section on team-teaching)
An excellent exhaustive survey of innovation in primary education in Britain and the U.S.A., its basis, modern developments and the process of innovation. He has included lengthy bibliographies after each chapter.

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The basic "handbook" for the 'non-graded' school approach. The emphasis is on the progress of the individual child - but through a pre-set curriculum (in contrast to open schooling). Non-gradedness is an organizational change, quantitative rather than qualitative.

Open-Education:

Ashton-Warner, S. Teacher. New York: Simon & Schuster, 1963.
A basic book in any teacher's library. It gives some insight into how a master teacher views herself and her teaching. She is now a practitioner and advocate of 'open education' in the United States.

Barth, R. S., and Rathbone, C. H. A bibliography of open education. Massachusetts: Advisory for Open Education and Education Development Center, Inc., 1971.
The bibliography is divided into three sections: (1) Books and articles, (2) films, and (3) periodicals. The first section is further subdivided. The authors make special note of the lack of research material. Indexed and cross-referenced. This is an excellent source of information for teacher and researcher.

Biggs, E. Mathematics for older children. London: MacMillan Education Ltd., 1972.
A practical book on mathematics for children in elementary schools. It contains some clear ideas on teaching and learning maths by the 'discovery' method and is very much in the spirit of 'open education'. There is an excellent bibliography of maths books and films. Useful to the researcher as well as the classroom teacher, because it manages to convey some of the 'flavour' of open education.

Blackie, J. Good enough for the children? London: Faber & Faber, 1963.
This book, by the former H.M. Chief Inspector of primary schools in England, was originally a series of lectures to primary teachers and teachers of adults. In it, Blackie gives a clear picture of the general aims of English education, mainly through English and artistic expression of various kinds.

Blackie, J. Inside the primary school. London: Her Majesty's Stationery Office, 1967.

A small book, written essentially for parents, to explain something of what is happening in British primary schools. A simple explanation of the parts of Piaget's theory of cognitive development essential and relevant to the 'primary school revolution' is included.

Brown, M., and Precious, N. The integrated day in the primary school. New York: Ballantine Books, Inc., 1973 (first published 1968).

An account of the development and operation of the 'integrated day' approach to education in British primary and junior schools (children up to the age of about 11-12), with special emphasis on the primary and junior schools of which the authors are headmistress and headmaster respectively. In addition to giving practical advice on what actually happens in the 'integrated day', the authors point to necessary areas of concern in implementing it. It includes an appendix of suggested materials and equipment, as well as a basic bibliography.

Building Bulletin 47. "Evelyn Lowe School - Appraisal." London: HMSO, 1972.

A look at one school in-depth, mainly from the architectural point of view, but valuable comments on education in school. Teachers working in pairs 'naturally evolved'. (Indebted to Jean Carroll for comment)

Bussis, A. M., and Chittenden, E. A. Analysis of an approach to open-education: Interim report. Princeton, N.J.: Educational Testing Service, 1969.

"A pioneering study on the character of open education and the problems of systematically evaluating it. A selection of the report appears in chapt. 12 of this volume." Taken from Nyquist & Hawes "Open Education".

Charbonneau, M. P. Learning to think in a math lab. Boston: NAIS, 1971.

An instructive book on setting up a lab approach to learning in mathematics. It includes an exposition on

teaching and learning by the author, who is an 'open' teacher of the first water. Valuable for the teacher, but also for the researcher who needs to see the way in which an 'open' teacher might think.

Children at school: Primary education in Britain today. Published for the Centre for Curriculum Renewal and Educational Development Overseas by Heinemann. London, 1969.

A book of articles on primary education written with a view to explaining what is happening in British primary schools today to readers overseas. Contributors include John Blackie and Sybil Marshall who are well-known in the United States as expositors of 'open' education.

Cockburn, Ilze. The open school: An annotated bibliography. Toronto: The Ontario Institute for Studies in Education, 1973.

A comprehensive updating of the 1970 Open Plan bibliography. It is divided into two parts: (1) Open education, (2) open plan. Part 1 is subdivided into 3 sections: (a) general, (b) Theory, Analyses, Definitions, and (c) Research. Part 2 is divided into two sections: (a) Designs and descriptions and (b) Research.

Dean, J. Recording children's progress. London: MacMillan Education Ltd., 1972.

An important book for teachers on keeping records in informal situations. Examples are mostly from British primary schools.

The ESS Reader. Boston: The Elementary Science Study of Education Development Center, 1970.

A collection of essays which have either come from people connected with the Elementary Science Study or are in some way relevant to the type of learning promoted by ESS. Contributors include David Hawkins, Philip Morrison, William Hull, Edith Churchill. A selection from the 'Plowden Report' is offered. There is also a basic article on Piaget by E. Duckworth, which explains in a simple way, the relevancy of his theory to education. This is an important book for anyone looking at 'open education'.

Evans, J. T. Characteristics of open education: Results from a classroom observation rating scale and a teacher questionnaire. Newton, Mass: Pilot Communities Program, E.D.C., August 1971.

A detailed report on the testing of a classroom observation rating scale and a teacher questionnaire designed to be a measure of 'open' classrooms. It is part of the larger report by Walberg and Thomas.

Flavell, J. The developmental psychology of Jean Piaget. New York: Van Nostrand Reinhold Co., 1963.

The basic book on Piaget's theory. Piaget's own work is often obscure as there is no central stating of his theory. Flavell has essentially done this and has also offered an evaluation and critique.

Gardner, D. E. M. The education of young children. London: Methuen and Co., Ltd., 1956.

A description for teachers of the development and resulting educational needs of young children.

Gardner, D. E. M. Long-term results of infant school methods. London: Methuen & Co., 1950.

This gives the results of long-term studies of British informal schools which tend to favour the informal over the formal situation. This is often quoted in American literature as the only long-term empirical work on informal schooling, and as such it deserves attention by researchers in the area.

Gardner, D. E. M., and Cass, J. E. The rôle of the teacher in the infant and nursery school. Oxford: Pergamon Press, 1965.

A cumulative study by Gardner and Cass which leads to a picture of the rôle of the infant and nursery school teacher. They wanted to show "what constitutes good and successful teaching in informal education" For teachers and researchers.

Haskell, L. A. British primary education: An annotated bibliography. Washington, D.C.: National Centre for Educational Communication, Division of Information Resources, 1971. (Available from ERIC ED 052 843)

A bibliography divided into four parts: (1) Survey of English education; (2) Contemporary trends in primary education; (3) Curriculum innovations; and (4) American interpretation of British pacemakers. (1) and (2) are completely annotated; (3) partially annotated; (4) straight bibliography.

Hassett, J. D., and Weisberg, A. Open education: Alternatives within our tradition. New Jersey: Prentice-Hall Inc., 1972.

A book written for teachers, which includes rationales for open education, practical descriptions of what actually happens and some answers to problems which might arise. Short bibliographies at the end of each chapter.

Holt, J. How children fail. New York: Delta, 1964.

One of the original books to express discontent with American elementary education.

Hourihan, P. An interview with Pat Hourihan. Newton, Mass: Educational Development Center, 1971.

The record of a fourth-grade teacher in an 'open' classroom in Emerson School, Newton, Mass.. She talks of what she does, some problems and what happens.

I do, and I understand. Vol. 1 of the Nuffield Mathematics Project. London: W.R. Chambers & John Murray, 1967.

This is the introductory book to the Nuffield Maths Project. New methods of maths teaching have been instrumental in helping many teachers move towards open education. This book introduces the attitudes toward learning which are essential in the Nuffield approach. They give a short account of the process of learning, based on Piaget and also cover such varied topics as furniture, classroom organization and record keeping. An invaluable book for the teacher.

Introduction to the Elementary Science Study. E.S.I., 1966. (Probably still available thrcugh Educational Development Center, Newton, Mass.)

The introductory book to the E.S.S. units. It

consists mostly of photographs of children and teachers doing things with the units. There are appropriate phrases, the most basic of which is "I hear . . . and I forget, I see . . . and I remember, I do . . . and I understand," which sums up the philosophy of the E.S.S. approach to science teaching and also of 'open' education.

Katz, L. Research on open education: Problems and issues. Urbana, Ill.: College of Education Curriculum Laboratory, University of Illinois, 1972. (Available from ERIC ED 068 202)

Number 15 in Current Bib. number 4 from OISE. "Noting the lack of reliable evidence for the effectiveness of open education, the author proposes concentrating research efforts on pre-school and primary years and the opening up of existing classrooms instead of creating new ones. Specific topics for research are suggested." (p. 4)

Kohl, H. 36 children. New York: The New American Library, Inc., 1967.

Kohl's account of his year with 36 sixth grade East Harlem school children. In addition to description, he includes examples of the children's writing and drawing.

Marsh, L. Alongside the child. Experiences in the English primary school. New York: Praeger Publishers, Inc., 1970.

A description of the British Primary school from many aspects from children's learning in general, to reading, writing, art, the untimetabled day, play areas, the working environment, furniture, inspectors and advisors. Photographs. It gives one of the more complete pictures to be contained in a single book.

Mathematics in primary schools: Curriculum bulletin no. 1. London: Her Majesty's Stationery Office, 1965.

Edith Biggs, who has become a 'name' in American circles connected with open education, explores the teaching of mathematics in primary schools. Excellent for teachers and to give an indication to researchers of the kind of teaching going on in British primary schools.

Notes on mathematics in primary schools. By members of the Association of Teachers of Mathematics. Cambridge: at the University Press, 1967.

A very helpful book for teachers wishing to become more 'open' in their approach.

Nyquist, E. B., and Hawes, G. B. Open education: A sourcebook for parents and teachers. New York: Bantam Books, 1972.

A book of selected readings on 'open education', some of which are extracts of larger works. Included are Piaget, Dewey, Bussis and Chittenden, parts of the Plowden Report, etc. A good 'popular' book to make a start in the field.

Oates, M. The mid-coast Maine project in the affective education of teachers - An evaluation. Newton, Mass.: The Pilot-Communities Program of the Educational Development Centre, August, 1971.

A detailed description and assessment of an alternative model of teacher training aimed at developing teachers for open classrooms. Candid. It is valuable for educators and anyone interested in developing open education, as it provides a model which could be adapted successfully.

Plowden, Lady B., et al. Children and their primary schools: A report of the Central Advisory Council for Education. (Vols. 1 and 2) London: Her Majesty's Stationary Office, 1967.

"The" report on primary education in England up to 1967. An official picture of education and where it should go. Enlightened. For anyone interested in children.

Ridgeway, L., and Lawton, I. Family grouping in the primary school. New York: Ballantine Books, Inc., 1973. (First published 1965, revised and enlarged 1968)

A complete look at the grouping of children in the English informal school, from the philosophical and psychological background to the practical daily running of family grouping. Particularly valuable for the teacher and also for the researcher.

Rogers, V. R. Teaching in the British Primary School. London: MacMillan Co., 1970.

This is a collection of articles by British theoreticians and practitioners, ranging from the theoretical and philosophical aspects of informal education to the practical approach. It gives a general picture of what is done and why. Rogers himself includes an article which directly discusses the relevance of all this to the American scene, and emphasizes the need for research. It would be a good book for teachers, or researchers.

Sherburne, M. L. Teaming-organizing for change in the schools. Newton, Mass.: The Pilot Communities Program of the Educational Development Center, August, 1971.

Opening of education requires change in schools. This report is part of a scheme to organize support for change and for teachers who wish to change. See also Thomas, G. B., and Jones, J. R.

Silberman, C. E. Crisis in the classroom. New York: Vintage Books, 1971.

An analysis of what is wrong in American schools which is paralleled to a description of English informal schooling and concluded with suggestions for changing the present scene in the United States. Silberman , one of the earlier critics, has written what may be the best introduction to the subject.

Silberman, C. E. (Ed.) The open classroom reader. New York: Vintage Books, 1973.

Here Silberman, an expert commentator of open education and the American scene, has gathered together some useful and informative readings in four general categories: (1) Overview of Practice: What open classrooms look like; (2) the reason why; (3) the rôle of the teacher and (4) the curriculum. An important book, especially for anyone wanting to familiarize himself both practically and theoretically with open education.

Silberman, M. L., Allender, J. S., and Yanoff, J. M. The psychology of open teaching and learning: An inquiry approach. Boston: Little, Brown and Company, 1972.

A collection of articles from a variety of sources, organized under the main headings of "The Learning Environment," "Cognitive Functioning," and "The Teaching Process." It is a text book which includes readings activities, topics of study and lists of further resources.

Thomas, G. B., and Jones, J. R. Innovation teams, operating principles. Newton. Mass.: TDR Associates for the Pilot Communities Program of the Educational Development Center, 1971.

This report gives an historical perspective of teams organizing for change as part of an Educational Development Center program. See also Sherburne, M. L.

Walberg, H. J., and Thomas, S. C. Characteristics of open education: Toward an operational definition. Newton, Mass.: TDR Associates, Inc., for Educational Development Center, May 1971.

A review of the literature on and relating to open education, classified according to a number of themes. Included within this project is the development of a classroom observation scale and a teacher questionnaire for rating openness. One of the most important pieces of research that has been undertaken in the area of open education. It is a must for the researcher and of great interest to the teacher and administrator.

Weber, L. The English infant school and informal education. New Jersey: Prentice-Hall Inc., 1971.

Lilian Weber's account of her year of study and observation of English primary schools. She includes the theoretical background of informal schooling as well as suggestions for the U.S.A. The bibliography is good. An interesting book for the teacher as well as more specialized reader.

Whitmore, B. An interview with Bruce Whitmore. Newton, Mass.: Educational Development Center, 1969.

Bruce Whitmore, a fifth and sixth grade science teacher at the Carr Elementary School in Newton, Massachusetts, talks of his classroom experiences and his open approach to teaching science. Much of his work is based on the Elementary Science Study units. This is not a detailed account but does give a picture of some of the thoughts and feelings of an open teacher.

Yeomans, E. Education for initiative and responsibility. Boston: National Association of Independent Schools, (NAIS), 1969a.

Ed. Yeomans visited schools in Leicestershire, England and here gives an account of them, with particular emphasis on the integrated day. He gives a balanced picture (mentioning drawbacks as well as advantages) and includes a valuable list of recommended classroom equipment.

Yeomans, E. Preparing teachers for the integrated day. Boston: NAIS, 1972.

Yeomans here describes various ways of supporting and helping teachers to become more open in England and the United States. Teachers' own accounts of workshops are included. A very valuable account for teachers and people interested in helping teachers prepare themselves for open teaching.

Yeomans, E. Schools talk to parents about the integrated day. Boston: NAIS, 1971.

Schools which change to open education need to educate and include parents in their plans, as well as children, teachers and administrators. This account tells the way five different schools did this. Very important for anyone involved in the practical aspects of open teaching.

Yeomans, E. The wellsprings of teaching. Boston, NAIS, 1969b.

An account of a workshop on open education. It soon becomes obvious that this was not an ordinary education workshop, but involved real, personal growth on the part of the teachers who took part. Excellent.

Journal Articles and Papers

Eggleston, J. "Old schools and new: Importance of environment." Times Educational Supplement, June 11, 1965, 2612:1838.

Article reporting on an English survey which showed in general, that (a) children in older school buildings (reflecting the general environment of the locale) were receiving less adequate education than (b) children in newer buildings (tending to be more suburban, middle class) (a) children were disadvantaged. An interesting research point that could be pursued in North America.

Gilliland, J. W. "How environment affects learning." American School and University, 1969, 42, 48-9.

A short and not very scholarly article on the subject of environments from the point of view of such things as lighting, and its effects on learning.

Rosenshine, B. "Evaluation of classroom instruction." Review of Educational Research, 1970, 40, 270-300.

An important review of the literature on rating instruments for the observation of classroom instruction. Anyone undertaking to research in classrooms through observation should read it.

Open-Area:

Anderson, D. C. "Open-plan schools: Time for a peek at Lady Godiva." Education Canada June 1970, 10, 3-6.

An article by a Toronto school principal which calls for a cautious view of open area schools and warns of some drawbacks that can arise. For a general audience.

Anderson, R. A. "Open learning places." Educational Technology, June 1970, 10, 13-15.

The open-plan is described from the point of view of construction and cost. This is a short article about buildings which does not attempt to do more than mention general ideas.

"Furniture and furnishing for the open plan." School Management, 1971, 15, 16-19.

This article tells of some of the purposes of furniture and furnishings for the open-plan school which differ from the traditional. There is some discussion of "noise-control". Mention is made of the fact that teachers can sabotage an open plan by using furniture to erect barriers and making, in effect, closed classrooms. It might be a useful article for someone implementing an open area.

Matheson, G. P. "Should you go ahead with the open-area?" School Progress, 1970, 39, 48-49.

The report of a survey of teacher-opinion in open area schools in six British Columbia municipalities. The results seemed generally to favour the open area design from the point of view of academic achievement (although the figures arrived at here may be misleading as three quarters of the teachers answered that they did not give standardized reading tests), independence and discipline. One drawback mentioned for the teacher is the greater strain and work load of the open area over the traditional classroom. For a general audience.

Myers, R. E. "A comparison of the perceptions of elementary school children in open-area and self-contained classrooms in British Columbia." Journal of Research and Development in Education, Spring 1971, IV, 100-106.

The Ideal Teacher checklist was given to groups of children in third grade and above in open-area schools and also in self-contained classrooms. Children in the open-area classrooms seem to want and to achieve more autonomy from teachers and also to be more concerned with their teachers being fair than children in closed classrooms. This could be useful for the classroom teacher and also the researcher.

"Open area schools." Bibliographies in Education, January 1971, no. 17. Canadian Teachers' Federation, Ottawa, Ontario.

A bibliography of books, articles and theses on the open-area with directions for finding major sources.

Open plan: An annotated bibliography. Toronto: Ontario Institute for Studies in Education, Library, Reference and Information Services, 1970. (Current Bibliography no. 2)

Updated 1973. Listed in the Books section under Open-teaching - Cockburn.

Schlesinger, B., and Youngston, J. "The open-plan school: What's involved for teachers and pupils?" School Progress, October 1970, 39, 52-53.

A short article which reports general highlights of a seminar for teachers in some Toronto open-area schools. Qualities of teachers in open-areas, criterion of teacher selection, points about involving children and their progress as well as general questions raised about open-areas, are all listed.

Open-Education:

Barth, R. S. "So you want to change to an open classroom." Phi Delta Kappan, October 1971, 53, 97-99.

Barth describes some important assumptions about open-education and warns of the danger of moving towards open-education without understanding what it implies. Good for teachers.

Barth, R. S. "When children enjoy school: Some lessons from Britain." Childhood Education, January 1970a, 195-200.

Barth examines some of the conditions which seem to enable children to enjoy some British primary and junior schools and some of the problems that arise because of this are discussed. Barth thinks that enjoyment is a by-product of the whole pedagogical approach. For teachers,with some implications for research.

Berson, M. P. "Inside the open classroom." American Education, May 1971, 7, 11-15.

A description of what is happening in some Illinois open classrooms under the direction of Dr.

Bernard Spodek. The teacher training program and support program for experienced teachers at Illinois State University are mentioned briefly. There is the suggestion that open-education need not stop at the age of eight (which often seems the pattern) but may continue upward. A general article for teachers.

Knoblock, P. "Open education for emotionally disturbed children." Exceptional children, February 1973, 39(5), 358-365.

An article by a professor of special education at Syracuse University, Syracuse, New York, on the possibilities of open education for emotionally disturbed children and also for the preparation of teachers. Worthwhile reading for anyone interested in open-education.

"Open education: Can British school reforms work here?" Special report. Nations School, 1971, 87, 47-61.

A good and balanced report in three parts. The first part discusses open-education theoretically in general and it happens in Britain. A section is included on criticisms of open-education. The second part takes a look at the New York City Open Door Project under Professor Lillian Weber and the third part is an interview with Professor Weber about open-education. A general article which gives good background information for research.

Rathbone, C. H. "Assessing the alternatives." Childhood Education, 1971, 47, 234-238.

A short article about alternatives to traditional education with a special emphasis on open-education. Rathbone is one of the United States' experts on open-education. Includes a short list of essential references. Thoughtful reading for anyone contemplating non-traditional education in the United States.

Rathbone, C. H. "Examining the open-education classroom." School Review, 1972, 80, 521-549.

An important article which discussed all aspects of open-education and makes a serious attempt to come to grips with the definition of open. He details

questions which need to be answered about open-education and gives some indication of needed future research. The footnotes include many primary sources about open-education. Worthwhile for anyone interested in open-education and a must for the researcher.

Rathbone, C. H. "The open classroom: Underlying premises." The Urban Review, September 1971, 51, 4-10.

A general article about the premises underlying teaching and learning in an open classroom. Rathbone warns against open education becoming too popular and being implemented without a real understanding of the underlying rationale and philosophy. For teachers.

Staples, I. E. "The 'open-space' plan in education." Educational Leadership, February 1971, 458-463.

Staples tells of open-education as implemented in open-space schools in Philadelphia. He gives a list of useful readings. For teachers.

Traub, R. E., Weiss, J., Fisher, C. W., and Musella, D. "Closure on openness: Describing and quantifying open-education." Interchange, 1972, 111(2/3), 69-84.

A good article describing the historical development of open-education and the development and testing of the DISC questionnaire for determining the openness of a school's program. This is Canadian research. Good for researchers.

Walberg, J. H., and Thomas, S. C. "Open education: An operational definition and validation in Great Britain and the United States." American Educational Research Journal, Spring 1972, 9(2), 197-208.

This article describes the development and testing of a teacher questionnaire and a classroom observation rating scale to determine openness of classroom programs. The research was carried out in Britain and the United States. Eight themes were examined in detail and the instruments successfully detected differences between open and traditional classrooms with regard to seven of them. The eighth theme was not manifested in obvious ways in classrooms. A good piece of "hard" research, mainly for researchers.