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ABSTRACT
              The main objective of this research was to look at
open classroom practices in an analytical way. Network analysis was
used to collect and organize data about individual classrooms. The
open classrooms observed were located in public schools in the New
York area and ranged from grades K to 6. The open classrooms observed
by the investigator were ones in which 1) the research had student
teachers and was there as a supervisor; 2) the researcher had
undergraduate students from an elective course, "Analyzing Teaching
Behavior"; and 3) the researcher had graduate students from a
research course who were the regular, full-time classroom teachers.
Six major findings are presented. Enough open classrooms do not exist
in this country to allow for adequate sampling procedures; thus, the
findings are considered tentative. A 24-item bibliography is
included. (MJM)

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AN INQUIRY INTO CURRICULUM THEORIES

AND OPEN CLASSROOM PRACTICES*

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Abstract

Conventional curriculum theories, refined and made more
complex over the years, are for the most part based on class-
rooms where teachers stand at the front of the room and con-
front all the youngsters with the same curricular unit at the
same time. These theoretical constructs are inadequate when
the framework of instruction becomes an open classroom. This
paper is based on observations of open classrooms at the
elementary level in the New York City area, using a modified
form of network analysis to record data about curricular
components focused upon in various activities and events.

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Introduction

The open classroom, for youngsters, alters both the sub-
stance and structure of learning. And in many ways the medium
is the most important message being communicated.

The open classroom, for teachers, alters both the cate-
gories and cycles of teaching behavior.

No longer can one assess the curriculum materials with
which a classroom is stocked and know with assurance what it is
that, over time, is engaging the students' attention.

No longer can one enter a classroom, do a Flanders' Inter-
action Analysis, "read the face of the matrix" with the data
thus collected, and know the nature of the interaction between
students and teacher

No longer can one scan teachers' lesson plans, even if
they are stated in behavioral terms, and know the kind of en-
gagement the youngsters in the classroom are experiencing.

Objectives of the Inquiry

This research has had as its main objective to begin looking at open classroom practices in an analytical way.

Questions to be Explored

1. What does a close examination of what happens in an open classroom tell us about curriculum theory, curriculum planning and design, curriculum research and development, curriculum evaluation?

2. What does an investigation of interaction in an open classroom tell us about teaching behavior?

Only the first question is being reported on in this paper. The second question is under continuing investigation.

Review of Literature on Curriculum Theory and Development

Conventional curriculum theories, refined and made more complex over the years, have centered on three key notions:

> formulating objectives
>
> selecting learning experiences
>
> establishing sequence (Taba; Tyler, 1950)

This is not surprising since many early definitions of the term "curriculum" embodied these three components. For example:

> a sequence of potential experiences set up
> in school for the purpose of . . .
> (Smith, Stanley, and Shores, p. 3).

The Bruner book, which set the stage for much of the curriculum development of the Sixties, however, established the overall design component of <u>structure</u> as the essence of the development process (Bruner, 1960).

Some curriculum theorists did not see this as antithetical to the earlier notions at all. Witness Gagné's definition of curriculum:

> a curriculum is a <u>sequence</u> of content units <u>arranged</u> in such a way that the learning of each unit may be accomplished as a single act, provided the capabilities described by specified prior units (in the <u>sequence</u>) have already been mastered by the learner (Gagné, 1967, p. 23).

Implied in Gagné's task analysis (Gagné, 1967, pp. 24-25) is the notion that a curriculum is a series of behavioral objectives arranged sequentially.

Utilizing Gagné's and Mager's work on behavioral objectives (Gagné, 1967; Mager, 1962), Banathy and others have taken on the task of designing total instructional systems (Banathy, 1968). What seems to be forgotten in much of this work, however, is that open systems are dominated by what is called the principle of equifinality--i.e. the use of different patterns or routes to produce the same final result. In contrast to equilibrium states in closed systems which are determined by initial conditions, the state of an open system is determined only by system parameters (von Bertalanffy, 1962, p. 7). This is to say that the same final state can be

reached with different starting conditions and proceeding
on different courses of action.

The big question is to what extent do these notions
explain what happens in an open classroom.

Review of Literature on Open Classrooms

Joseph Featherstone called American attention to the
British Primary School Movement in 1967 (Featherstone, 1967).
More recently, Charles Silberman's Crisis in the Classroom
has become the required reading on open classrooms (Silber-
man, 1970).

It is the 1200 page Plowden Report (primarily survey
research data with interpretations and recommendations) and
Lillian Weber's The English Infant School and Informal Ed-
ucation, however, that constitute the bulk of the heavy writing
on the open classroom. Weber's recent book traces the social
and historical background of the Movement, thus complementing
the Plowden Report's "state of the schools" emphasis. (Plowden,
1967; Weber, 1971).

Open classroom education grows out of the philosophy that
for each child learning takes an uneven, episodic path (Kohl,
1969, p. 54) and that children can take responsibility for
their own learning if allowed to do so (Muir, 1970).

The role of the teacher is to provide an environment in
which this process can take place (Stevens, 1970, p. 64).
Such an environment is described in the following passage:

Walking up a half dozen steps, we come upon a
first floor corridor that is the connecting pas-
sage between four primary classrooms that open
off it. At 10 A.M. in the corridor, four kin-
dergarten girls, seated cross-legged on some
cushions with a pile of magazines, a paste pot
and a very large sheet of brown paper, are cut-
ting and pasting. Nearby, a third grader is read-
ing a story to a younger child; both are giggling
at the antics of "Curious George." Two girls
sitting side by side on the corridor floor are
each absorbed in a book, as is a boy leaning
against the opposite wall. Several youngsters
are writing in notebooks or on loose sheets of
paper. A large, bright yellow wooden tub on
wheels, with two children and an oversized
stuffed dog crowded into it, is being pushed along
the corridor by a highly energetic boy.

The children who are working do not look
up as the cart rolls by. No adult is present in
the corridor aside from the visitors. From time
to time a child gets up and goes into one of the
classrooms to ask some available adult a question
(Schneir and Schneir, 1971, p. 31).

The problem of relating structured curricula to open

classrooms is one that must be considered, however.

Definitions

Open classroom.--For the purposes of this study, the

minimum criteria for an open classroom were established as

consisting of the following:

1. There is no "up front" (Stevens, 1970, p. 64).

2. The teacher seldom talks to the class as a whole,

although she talks with individual children often (Stevens,

1970, p. 64).

3. Each child works with a wide variety of materials

and books (Stevens, 1970, p. 64).

4. Children are free to speak and move around as they
wish (Kohl, 1969, p. 30).

5. An individual child can decide for himself what he
wants to work on (Ford, 1971, p. 10).

6. A child can work on a task as long as he wishes to
do so (Ford, 1971, p. 11).

Procedures

This research makes use of network analysis as a way of
handling information about open classrooms. The investigator
had previously used network analysis to handle ongoing events
and activities in large change situations (Dill, 1969; Dill,
1970). This was the first time, to the researcher's know-
ledge, that the procedure has been used as a way of collecting
and organizing data about individual classrooms for analysis.

Network analysis.--Network analysis is a technique used
in systems design, planning, and control to show the sequential
relationship among activities and events (Johnson, Kast, and
Rosenzweig, 1967, p. 316). The analysis is presented in the
form of a network which is a visual representation of the
system (Evarts, 1964, p. 17).

Network.--a flow chart made up of events that are joined
by activity lines to depict their interdependencies and inter-
relationships (Baker and Eris, 1964, p. 2).

Events.--Events are instantaneous occurrences; they do
not consume time or resources (PERT Coordinating Group, 1963,
p. 18). An event is usually shown on the network as a circle.
Events are used at the beginning and end of all activities,
and they are usually identified by a number as well as ex-
planatory nomenclature.

Activities.--There are two types of activities--real and
dummy. Real activities are time-consuming tasks, shown on the
network as a solid line with an arrow to indicate the direction
of sequential activities (Evarts, 1964, p. 94). Dummy activi-
ties do not consume time or other resources; however, they are
constraints which represnet the dependency of one event upon
another (Baker and Eris, 1964, p. 5). A dummy activity is shown
on the network as a dashed arrow.

Event and activity numbering.--Events are numbered sequen-
tially in a network, usually from left to right and top to
bottom. A skip-numbering system is usually utilized in order
to permit the addition of events without getting numbers out of
sequence.

Critical path.--The critical path is the sequence or
chain of events and activities, extending from the beginning of
a network to the end of a network, requiring the longest time
to complete (PERT Coordinating Group, 1963, p. D.1). In this
study the critical path is utilized to follow the movements
of one youngster over a period of time.

Other network procedures.--1. One event often serves as

both the ending event for one group of activities and the
beginning event for another series. 2. Event bubbles are
sometimes drawn in different shapes to make possible rapid
identification of activity and event responsibilities. 3.
Network condensation is a procedure which allows a large net-
work to be reduced to a skeleton network. 4. Network expan-
sion is the reverse process in which more detailed networks
are prepared.

Figures 1 - 3 illustrate the above discussion.

Observations

The open classrooms observed by the investigator were
ones in which (a) the researcher had student teachers and was
there as a supervisor, (b) the researcher had undergraduate
students from an elective course on "Analyzing Teaching Be-
havior" (who were also student teaching but the researcher was
not the supervisor), and (c) the researcher had graduate
students from a research course who were the regular, full-
time classroom teachers.

The open classrooms observed were located in public schools
both in Queens and on Long Island and ranged from K to 6 in
grade level. Included among the classrooms observed was a
5 - 6 and a 4 - 5 - 6 combination open classroom operation.

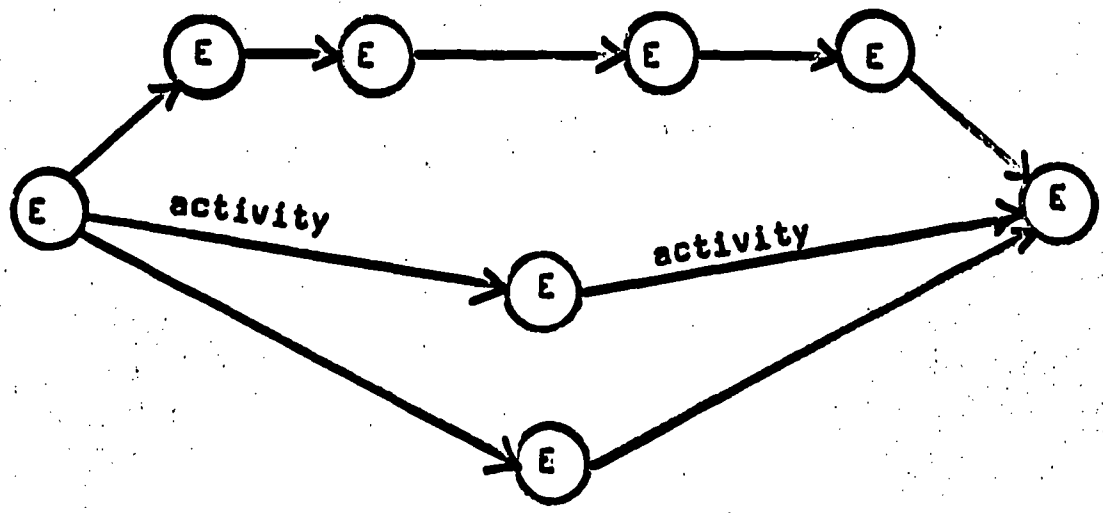Some observations were video-taped for later analysis.
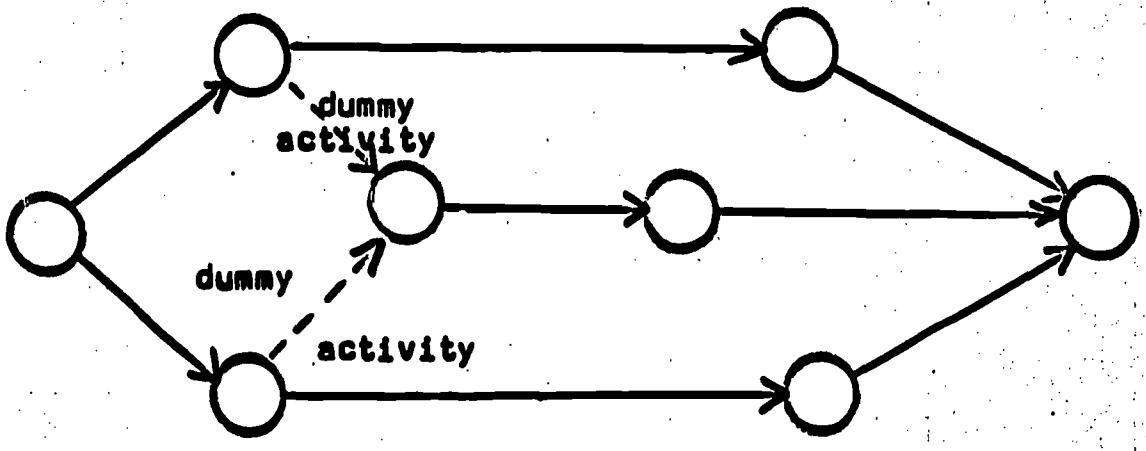
Figure 1. Network Showing Activities and Events

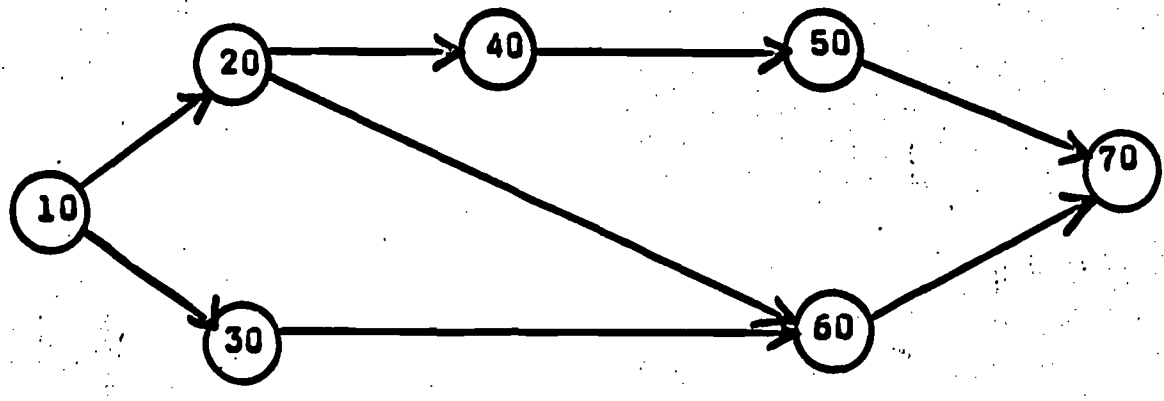**Figure 2.** Network Showing Activities, Events, and Dummy Activities

Figure 3. Network Showing Event Numbering System

The Networks

In some cases a skeleton network was constructed during
the observation. This network was expanded following the ob-
servation, using as much detail as the observation had
produced. When the observation was videotaped, all network
construction was delayed until later viewing of the tape.

The following coding schedules were utilized:

Events:

22   youngster # 22

5   youngster # 5

9   youngster # 9

T   Classroom teacher

T_1 Classroom teacher - used when more than one

T_2 "   "   "   "   "   "   "

T_3 "   "   "   "   "   "   "

ST   Student teacher

ST_1 Student teacher - used when more than one

ST_2 "   "   "   "   "   "   "

ST_3 "   "   "   "   "   "   "

P   Parent

S   Supervisor

A   Administrator

c   child from another classroom

t_1 time at beginning event

t_2 time at ending event

$t_{act} = t_1 - t_2$ length of activity

Activities

SS   Social Studies

MA   Math

SC   Science

LA   Language Arts

R   Reading

MU   Music

ART   Art

PE   Physical Education

Activities were subsequently color-coded

If a particular curricular program was identifiable as an entity it was given a number which was used along with the general area designation listed above.

Critical Paths

The movement of individual youngsters over time was followed by color coding the events and activities in which they had been involved.

Findings

1. Youngsters, newly acclimated to the changed "rules of the game" frequently exercise their options and avoid certain projects, tasks, curricular areas. They are very often even successful in resisting the prodding of a teacher. If a student rejects an activity either on the basis of its content area or on the basis of the instructional method, he has in effect rejected the goal or objective which that program was designed to relate to. These observations suggest that the setting of goals can no longer be considered as the SUPER STARTING POINT for curriculum development.

2. Behavioral change in an open classroom becomes a function of both time and intensity of engagement.

$$bc = f(t)(i)$$

An art activity, for example, which can frequently fill up

30 minutes in a traditional classroom was frequently executed by youngsters on their own in an open classroom in less than 3 minutes. These observations suggest that intensity of engagement may be a much more crucial factor than the SUPER STRUCTURE of blocks of knowledge.

3. Sequence is a highly individualistic thing. Some youngsters choose to repeat items, getting pleasure out of the familiarity of the task. Other children prefer to plunge ahead, testing their capacities, retreating to another level if confronted by frustration or the reality of low-score criterion tests. These observations suggest that there is no SUPER SEQUENCE applicable to all.

4. Activities which look on the surface like non-tasks-- e.g. doing the weather report, cleaning the art brushes--often have a deeper structure. They frequently provide the framewok within which youngsters have extended talk among themselves, uninterrupted by a teacher's questions.

5. The flow of events is very similar across grade levels. Networks of a third grade look much like kindergarten networks, on the one hand, and bear a great likeness to upper grade networks as well. This appears to indicate a process is in operation that cuts across various ages and grades.

6. The activities of an open classroom frequently spill out of the main classroom space into adjoining halls, with a

nearby set of stains often providing a mini-stage for impromptu dramatizations. It is not "no walls" in itself that generates a good open classroom but connected bits of space, much like an airport terminal with a central area feeding into numerous corridors and gates, some in use all the time, others in use only at certain times. Many open space buildings contain classrooms which do not meet the minimum criteria established in this study as constituting an open classroom. These observations suggest that there are no SUPER SCHOOL BUILDINGS which will in and of themselves assure educational success.

Summary

Many formulations in the curriculum field must be questioned as a result of looking at curriculum not at an assumed level of a school or a classroom but at the only level at which it bursts into reality--that of the individual student. Gagné's contention that "a curriculum is a sequence of content units arranged in such a way that the learning of each unit may be accomplished as a single act,(provided the capabilities described by specified prior units (in the sequence) have already been mastered by the learner" (Gagné, 1967, p. 23) must be questioned when youngsters are observed taking on curriculum content in varying sequences.

The order of the steps in the process of curriculum development must be questioned when youngsters in open classrooms,

now possessing the powers of self-selection, opt out of
activities and experiences, remarking "you're not going to
get me involved in that." Perhaps the planning of learning
experiences should be the first consideration in a new con-
ceptual framework for curriculum development.

This paper argues for a grounded approach to curriculum
theory--one in which the focus is on those points at which
students are caught up in learning encounters. Noticing
how these encounters cluster together, it might be subsequently
possible to derive those objectives which are being met by the
school as a last step in the analytical process.

Although the open classroom approach to education has been
widely acclaimed in the last two years, there has been little
research to date on open classroom practices. Obviously the
findings presented in this paper are quite tentative. Enough
open classrooms do not yet exist in this country to allow for
adequate sampling procedures. It is hoped that this effort is
at least in the right direction.

Thinking about curriculum theory, curriculum development
and research, curriculum planning and design, and curriculum
evaluation seems to be in a state in which the same things are
said over and over again. Unlike Schwab's suggestion that cur-
riculum energies be diverted from theoretical pursuits (Schwab,
1970, p. 2), this investigator would contend that the dis-
covery of new and practical theory in the curriculum field is
still a real possibility.

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