A series of single day visits to selected elementary and secondary schools in Illinois, Nevada, California, Florida, and Massachusetts was made by a visitation team of teachers, administrators and architects from the Monroe (Michigan) School District. This document reports the visitation team's impressions of developing educational systems, educational technology, materials resource centers, vocational education, and organizational patterns and staff utilization in the experimental programs. Also included are discussions of the faults of the traditional school, the change process in experimental schools, and new directions for change. The impressions were generally favorable and the visitors agreed that the educators they met were characterized by enthusiasm, vitality, and dedication. Pride in schools, staffs, and student bodies was evident among them. At times, the practices observed appeared to be somewhat at variance with theoretical formulations presented orally by school leaders or in written school publications. (MM)

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INTERIM REPORT

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Coordination of Organic Curriculum
Development in the Public Schools
of Monroe, Michigan. Interim Report

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July 1968

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IMPRESSIONS

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Bureau of School Services
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PREFACE

A series of single day visits to selected elementary and secondary schools in Illinois, Nevada, California, Florida, and Massachusetts produced a number of impressions upon members of a visitation team composed of teachers, administrators, and architects which are shared in this publication.

The impressions reported are generally favorable, derived as they were from observations in the schools and from discussions with local school officials. Visitors agreed that enthusiasm, vitality, and dedication characterized the professional educators they were privileged to meet. These educators shared the conviction that their particular schools were functioning on the growing edge of education. Pride in schools, staffs, and student bodies was evident among them, an opinion generally shared by the observers. At times, however, visitors were impressed that practices observed appeared to be somewhat at variance with theoretical formulations presented orally by school leaders or in written school publications.

Two publications summarized the impressions of the visitors of which this is one. The emphasis here is upon identifying impressions of innovative curricula, staffing, and administrative practices found in the schools visited. The second publication concentrated upon school buildings and instructional equipment and became an integral part of the educational specifications for a new senior high school for the Monroe (Michigan) School District.

Members of the visitation team who contributed to both documents direct them to staff members of the Monroe School System and possibly to other educators interested in current efforts to reform and revitalize American education.

Officials in the school systems visited provided easy access to school personnel, facilities, and publications; responded to questions with candor and objectivity; and were most generous with time and hospitality.

Introduction

Future histories of American elementary and secondary school education will record that the decade following the launching of Sputnik was characterized by sharp criticism of the status quo as well as by many reform proposals and experiments. Some of the most significant and promising of the latter were observed in the schools visited by those contributing to this document.

This report, consisting of impressions received from observing in a number of significant innovative educational institutions, is divided into four sections. Part I describes some of the concerns which prompted the innovators to initiate programs of reform; Part II describes impressions received from observing in the schools; Part III discusses change processes in experimental schools; Part IV discusses a disturbing and relatively neglected problem in American secondary schools which challenges all school leaders.

PART I - THE CRITICS SPEAK

Virtually every aspect of American education has been sharply debated during the past ten or fifteen years by such critics and reformers as Bestor, Rickover, Conant, Trump, Brown, Bush, etc. No attempt will be made in Part I to identify all significant problem areas discussed and debated during the past decade. Rather, only those problems have been singled out which led to significant action programs observed in one or more of the schools visited. No claim is made that the list of problems or experiments discussed below is exhaustive, but almost certainly a definitive list of current educational problems and proposed solutions would undoubtedly include those reported upon.

Criticism #1:   TRADITIONAL SCHOOLS ARE NOT EFFICIENT

It is not generally recognized that existing patterns of school operation were formalized during the period from 1890 to 1920. Comparatively little has been done until the 1960's to challenge these norms. The gauntlet has been thrown, however, by Trump, Brown, Bush etc. New patterns suggested by them are increasingly finding their way into schools in many parts of the United States.

The critics assert that the traditional school year, extending for about 180 days from September to June, is inappropriate. Schools should remain open during the summer to serve youth and adults in a variety of ways. The multi-billion dollar investment in school buildings must be put to better use, and the restless energies of young people channeled into constructive paths, say the critics.

Scheduling practices also come in for their share of challenging. Questions are raised as to why the school day has been established arbitrarily at 6 clock hours; as to why all classes meet for 200 minutes weekly at a minimum; as to why classes generally meet five days weekly; as to why recommended class size ranges from 25 to 30 pupils regardless of the field of study, or the maturity of the student; etc. Critics of the schools state categorically that these questions have not been answered satisfactorily and they ask, "why not?"

Criticism #2:   TRADITIONAL SCHOOLS DO NOT MEET INDIVIDUAL DIFFERENCES
                  IN STUDENTS EFFECTIVELY

At the turn of the 20th century, about 10% of the youth between the ages of 14 and 17 were believed to have been enrolled in high schools. Today, the corresponding figure approximates 85% for most of the states in the union. Enrollments in elementary schools of the United States approach 95% of the eligible children today, excluding only those with severe learning problems. Six or seven decades ago it is doubtful whether more than 50% of the populace

remained in the elementary school through the 6th grade. These data suggest that American schools are challenged not only to prepare youth for an increasingly complex society, but also to formulate programs appropriate for a much wider range of human variability found within current school populations.

The charge of the critics is that school systems generally have not only failed to meet individual differences in schools, but also have scarcely begun to attack the problem in a meaningful fashion except possibly to better serve those who might be classified as "gifted" at the secondary school level.

Critics allege that elementary and secondary schools more often than not fail to make administrative provisions for variability within the schools. Children proceed through the grades in lock-step fashion with all children in a subject studying the same programs at the same pace. Mastery of fundamentals is not achieved, leading to disaster for many when they reach the secondary school.

The critics acknowledge that secondary level students are generally classified and categorized. They express concern, however, that seldom do high schools organize programs for the several levels identified. Grouping practices allegedly lack precision; teaching strategies vary little from group to group; remedial programs drive students out of the schools rather than rehabilitating them; vocational training follows traditional models appropriate for another era. In short, reformers assert that the needs of all students are neglected, to some degree, and they insist that traditional molds of school operation must be smashed before the schools can be truly responsive to the needs of all children.

Criticism #3: STUDENTS ARE NOT CONSTRUCTIVELY MOTIVATED IN TRADITIONAL SCHOOLS

Educators agree that intrinsic motivation is greatly superior to extrinsic motivation in helping students to develop the best that is in them. Modern critics believe that changes in school operation must be made in order for intrinsic motivation to function at all. In most schools, they allege, students work to satisfy teacher demands. Hence, only a fraction of their potential for learning is brought into the educational process.

As noted above, student motivation is said to be inhibited by prevailing school operational practices. For some students, materials of instruction are baffling; for others, the same materials may appear insufferably simple and insipid. The pace of instruction may be too rapid or too slow. Teaching methodology stressing lectures and rote question-answering routines may alienate all students to some extent. Seldom are even the most able students believed to be challenged to define personal goals or to map out work programs of their own devising. Every moment of every school day is generally scheduled by someone else. When interest lags or assignments are not completed, many students blame the system and the teacher. Needless to say, few teachers would wholly accept this point of view. Yet, state the critics, the more conscientious are concerned at their inability to adequately motivate the 100 or more students assigned to them daily.

Student motivation will continue at the present low level, assert the reformers, until students arc more fully involved in the learning process; until instructional materials are appropriate to maturity levels; until the pace of learning activities is appropriate to the learner; and until students are consciously involved in decisions relating to their intellectual and social development.

Criticism #4: VOCATIONAL EDUCATION DOES NOT FUNCTION EFFECTIVELY IN TRADITIONAL SCHOOLS

High school programs designed to prepare youth for the world of work seldom fulfill their promise, assert certain critics of the comprehensive high school. Students are prepared for vocations that no longer exist; they function in laboratory settings which are totally unlike those found in the work world. The recruitment of qualified staff members suffers because vocational teachers' salaries often fail to meet levels of skilled tradesmen in the same field of endeavor.

Vocational programs which are operative very often fail to enroll the students who need the training the most, namely, the lower one-third of the high school population in achievement. Employers participating in reimbursed cooperative and work experience programs ask to be assigned more able students and screen out the remainder.

Secondary schools enrolling only a few hundred boys and girls, schools located in rural areas, and schools in some suburban communities may not have enough students to schedule a variety of vocational offerings. Hence, those students who do not fit anywhere else are fitted into the so-called "general curriculum" which demands little of the student and which leads exactly no-where, say the critics.

Criticism #5: STAFF UTILIZATION IS INEFFICIENT AND INEFFECTIVE IN TRADITIONAL SCHOOLS

Critics of traditional schools level some of their most barbed remarks at what they believe to be inefficient and ineffective use of the latent talent which exists among the schools' teaching staffs. Teachers seldom collaborate or cooperate because of the lack of machinery to either encourage or permit their so doing. Teachers all too frequently lecture "off the top of their heads" without preparation. Teachers continue to waste time doing the most routine of tasks which could be done by adults who are available. So say the reformers.

Although the technological revolution has created wonderful tools for teaching and learning, all too few schools and educators are said to incorporate them into their daily operations. Some cynics assert that students may be learning more that will be useful to them outside of school than inside it. Whether or not one shares this point of view, say the critics, none can deny that many students are being educated in the same buildings, with the same educational strategies, and with the same educational tools as their parents were exposed to during the nineteen thirties and forties.

Those who believe that teachers would do better if school systems would
provide the machinery, time, and leadership for appropriate in-service programs
are quick to point out that all too seldom is this done. Teachers are free
during the summer, the schools are available, and leadership might be secured
if society recognized the loss suffered to the entire educational process by
continuing to "function as usual." Some school systems are trying to do some-
thing to capitalize on teacher talent, but more need to follow suit, say those
most critical of current practices.

Criticism #6: TRADITIONAL SCHOOL BUILDINGS HAMPER CONSTRUCTIVE INNOVATIVE
               PRACTICES

Reformers are quick to point out that traditional school buildings make it
difficult to carry out the reforms they deem important to the improvement of
education. If virtually all rooms are of the same size and shape and are
equipped identically, how can team teaching with large group, small group,
and individualized study function properly? If team planning is to take place,
where can it occur without planning rooms? Innovative approaches such as
programmed instruction through learning packages presumes adequate storage and
retrieval systems. Traditional schools have not been planned to implement
such innovative practices.

Critics also point out how wastefully many school facilities function.
The library may remain empty because all students are scheduled without free
time; the cafeteria may remain idle except for 2 hours or so at the noon hour;
the auditorium may be used no more than a few hours weekly; the library usually
remains closed in the evening, although many students lack a satisfactory study
place at home. And so on.

Some critics of traditional school buildings note that they often provide
an unpleasant and uncomfortable setting for teaching and learning. Because of
difficulties of measuring these imponderables, efforts to correct them are all
too seldom undertaken. Few will deny that our school buildings often appear
cold and uninviting; that they are noisy both in the classroom and outside of
it; that for much of the year students and teachers suffer from excessive heat
from which there is no escape.

Students generally move from classroom to classroom eight to ten times
during the day; yet, many school buildings appear to neglect the proper "flow"
of students with consequent mental and physical anguish to generations of
occupants. Little wonder that those most concerned with the educational process
believe that more beautiful and functional buildings can and must be constructed
in the future.

Criticism #7:   TRADITIONAL SCHOOLS ARE TOO SLOW IN VITALIZING
                INSTRUCTION THROUGH USE OF MODERN TECHNOLOGY

We have already noted that critics of current programs and practices in
American schools place great store in the potential contributions of new
"hardware" and "software" that is beginning to appear on the market. One
observes them in use in many of the so-called experimental schools, but they

are said to appear only infrequently in their traditional counterparts. The results are that the best schools are said to be getting better and those poorer in quality to begin with are falling farther and farther behind.

Whether or not one agrees with the assumption that schools making more extensive use of new educational technology are better than those which do not, visitors were impressed at how frequently they found the new audio-visual technological devices at work in the so-called pilot schools. Administrators and teachers spoke knowingly of such things as close-circuit T.V.; wet and dry carrels; retrieval systems; learning packages; hardware; software; and computerized instruction. If such items in fact are no more than esoteric terms--to the typical classroom teacher and administrator in traditional schools as some critics allege, then such institutions may have a long road ahead to traverse if the wave of the future in education includes making effective use of these new tools for learning.

PART II - EXPERIMENTAL PROGRAMS

Introduction

During the Spring of 1968 various administrators, teachers, and con-
sultants representing Monroe (Michigan) High School were privileged to visit
eleven distinguished pilot schools in various sections of the United States
in order to better fulfill the responsibilities of Monroe High School in the
ES 70 Project. A planning committee suggested that the visitation team con-
centrate its energies during the visits on several broad areas. These were:
Educational Technology; Organizational Patterns and Staff Utilization; Vo-
cational Education; Educational Systems; and Instructional Materials Centers.
Following the visits, the written notes prepared by each visitor were compiled
into a summary report intended for distribution to the staff of Monroe High
School and possibly to other schools also.

Part II of this report stresses the impressions derived by the visitors
to programs visited. It does not attempt to describe in detail the aspects
of the specialized programs observed. More comprehensive descriptions are
available to interested persons in official school publications or can be
found in many current books and articles.

A. Developing Educational Systems

1. Learning Packages

One of the most significant of the educational innovations observed was
the concept of learning packages being developed in several of the schools
visited including Valley High School in Las Vegas, Nevada; Nova High School
in Fort Lauderdale, Florida; and Quincy High School in Quincy, Massachusetts.
These schools assume that team teaching and modular scheduling are tools
designed, in part, to provide more time for the individualization of instruction
With a substantial amount of unscheduled time at his disposal, the student
theoretically can proceed at his own pace in a given subject area if a program
is worked out in advance.

Kapfer, of Valley High School, suggests that learning packages include
eight ingredients for individualizing instruction: Concepts, Instructional
Objectives, Multi-dimensional learning materials of varying difficulty,
Diversified learning activities, Pre-evaluation at the initiation of a unit,
Self-evaluation after exposure to learning materials and activities, Post-
evaluation, and Quest which consists of pupil-initiated and self-directed
learning.

Efforts made to adapt this general approach to elementary and secondary
school instruction appeared to be in the gestation stage. Participants in
the process of developing learning packages reported that theorists have under-

estimated the investment in time, personnel, and money required to bring about
a successful finished product. Some projects have been delayed as one or
another of the elements in the team producing the learning package (theorist,
experimenter, and writer) leave for other assignments.

Nova High School appeared to make the most extensive use of learning
packages at the present time, and particularly in the field of science. The
LAPS (Learning Activity Packages) allow a student to work at his own pace
and at his own level. Science Laps are organized into a logical pattern of
subject matter so that at graduation time when the student has completed all
the required Laps he will have had the equivalent of physics, chemistry,
biology, and physical science. The Laps are structured at three levels of
depth. A system functions which coordinates testing, laboratory work, group
instruction, work in the materials center, and quest activities.

Thus far, learning packages have been developed for internal use with
the school and are not yet available for purchase and use by other school
systems.

2. Phasing:

Phasing was described by one visitor as "no more than homogeneous grouping
except that it's done by the student, mainly at the beginning of the year."
The Melbourne Plan provides for offering all (or most) courses at three levels
of sophistication. The program for each level is organized and taught follow-
ing time schedules and procedures not unlike those found in conventional
schools. Some modification in these practices are observed in Melbourne for
the least able students and for those who are more able and more highly moti-
vated. What is most unique about Melbourne is the freedom given to students
to select any subject, at any grade level, and at any phase level above the
lowest, which is essentially one designed for slow learners. Another very
unique feature of phasing is the freedom of students to move up or down from
one phase to another at virtually any time during the year (1500 program
changes were made during the course of the 1967-68 school year). Another
major departure from conventional practice in Melbourne is the opportunity
for students to withdraw temporarily from all class attendance to pursue
independent study under the guidance of a preceptor and coordinator.

Although the above resumé fails to do justice to many other unique aspects
of Melbourne High School, the visitors were of the opinion that this particular
system could be more readily incorporated into a conventional high quality
school with the usual facilities, staff, and leadership potentials. Visitors
were impressed by the structured environment as contrasted with several other
campuses which provided students with up to 50% unscheduled time. It is per-
haps inevitable that the value systems of educator-visitors inevitably incline
them favorably to structured student and faculty schedules.

B.   Educational Technology.

Pilot schools impress visitors from conventional school systems by the quantity and sophistication of the educational technology (Hardware) which seemingly is in evidence everywhere throughout the school plant. Somewhat less impressive to the same visitors are the quantity and quality of the instructional materials (Software) and the actual use made of these by the faculty during the visits. Having made these points, it is only fair to note that the impact of the use of educational technology has been substantial in these schools. Visitors gained the impression that such schools have reached the first and lowest plateau of usage which will shortly constitute a takeoff point for a very high volume of use in two years or less. When commercially produced learning packages of high quality become available, these schools will make use of them long before their conventional counterparts.

Reported below is a frequency distribution of the use of the varia media in the 8 high schools, 1 middle school, and 2 elementary schools visited.

Technical Tools	8 High Schools in Sample	1 Intermediate School in Sample	2 Elementary Schools in Sample
T.V.	4	1	0
Teaching Machines	7	1	2
Access to Computer	3	0	1
Language Laboratory	6	1	0
Dial Access Retrieval-Audio	4	0	0
Dial Access Audio and Visual	1	0	0
School Developed Software	5	0	0
Wet Carrels	4	1	0
Dry Carrels	7	1	0
Programmed Instruction	7	0	2

Television

Although four high schools were using educational T.V. in one way or another, Evanston Township High School impressed visitors as having one of the most extensive T.V. installations anywhere. But more importantly, extensive use is made of the installation by the staff. The pace in the T.V. studio will pick up even more in 1968-69 when a greatly expanded program of team teaching comes into existence. This high school has spent from $150,000 to

$200,000 yearly from outside sources on ETV for more than a decade
plus funds deriving from the local board of education. Many teachers will
be involved this summer (1968) in making and filming programs, mostly in
science and English. Most video tapes will be 15 minutes in length. All
programs are produced in the T.V. studio.

In the Estancia High School (Costa Mesa, California) all rooms are set
up so that programs can be televised from any room. They video tape programs
from classrooms or from other sources. The present system permits the studio
to transmit two video programs and other channels are available. The studio
presently uses its transmission facilities for relaying F.M. and A.M. radio
programs. N.D.E.A. funds paid for roughly half of their equipment and software.

In the Nova High School (Florida) every teaching station is equipped with
a T.V. set and a direct line to the T.V. Control Center. Each teacher can
request that a video tape be put on a specific circuit at a moment's notice.
The video-tape used in conjunction with close circuit T.V. makes possible
the use of T.V. material at the time the instructor finds it most appropriate.

Teaching Machines

This term is used somewhat loosely to cover a variety of audio-visual
devices. These appeared to be used liberally in the schools visited. Some
of the more common "machines" were: movie projectors; overhead projectors;
video-tape recorders; filmstrip receivers, microfilm machines, language
reader machines, audio-language machines, tape recorders, and record players.

Computers

Only two high schools offered courses in computer operation and program-
ming, although most of the others were held back only because of financial and
personnel considerations. Most of the high schools with modular schedules
have the individual and class schedules made up by Stanford University.
Melbourne High School makes use of a IBM computer in Atlanta, Georgia. A
direct connection is maintained with the computer for an unlimited time each
day. Students under supervision can use programs in storage or can make
their own programs and store them in Atlanta. Several departments used this
service for both high level and low level learners.

Several of the elementary and secondary schools visited participate in
a federally funded project which aims to store pupil data in a memory bank to
be used later as a basis for pupil diagnosis as regards the pacing of learning
materials and educational experiences. The impression gained was that actual
implementation in concrete school situations and use with individual pupils
is some time away. One educator indicated that the use of computers in schools
as tools for learning, may not be far away. Because of the rapid obsolescence
of hardware, computers may become available to schools as donations or through
low rental rates.

Language Laboratories

Language laboratory installations in the pilot schools were no more extensive or elaborate than those commonly found in their conventional counterparts. There is no reason to assume, based on impressions gained, that use of these installations was more extensive in pilot schools. For example, there were no instances observed of students working individually on language lessons in the wet carrels.

Dial Access Retrieval

Only one high school (Nova) had dial access with both audio and visual programs available in the studio, but visual programs relating to courses of study were very limited in number.

In the four high schools with dial access audio setups fairly extensive classroom student usage was observed during the visits in typing, shorthand, French, Spanish, German, U.S. History, World History, Speech, and English. Almost certainly dial access retrieval increasingly will play a major role in individualizing instruction, and particularly when commercially produced learning packages become available and are used widely.

Carrels, Wet and Dry

The availability of carrels in the pilot schools visited was extensive. Student use varied from an extensive level in a few schools to very low levels in several others.

The largest number of carrels observed were the 250 located in the Melbourne High School Instructional Materials Center. Of these, only a few were electrified. Extensive carrel installations were observed in the Nova and Costa Mesa High Schools. These were distributed in various parts of the school for use by students with unscheduled time. Observers were impressed by the privacy and audio comfort afforded by the carrels located as they were in carpeted areas. Schools on the drawing boards would be well advised to electrify all carrels if possible, or at least to provide wiring should there be delays in carrel installation.

Most high schools provided a central room which housed recorders and audio and visual tapes. The language laboratory was also connected to this center in several high schools. Full-time technicians were generally employed with additional student assistance. Storage areas were provided but as time goes on, storage spaces may be too small as tapes proliferate and usage increases.

C. Materials Resource Centers

Examples of centralized and decentralized Materials Resource Centers were observed in the pilot schools, but the preference of the visitors was unanimously for centralized centers. As one observer put it, "The Curriculum Center in Wellesly (elementary school) convinced me that a centralized resource

center, amply staffed and equipped, is the best method of handling the books
and technical equipment that is required. This center can be organized to
help teachers procure, produce, and reproduce teaching aids most effectively,
and serve as a central storage area for these materials."

The library, of course, is still a most essential part of such a facility.
Some leaders recommend seating for up to one-third of the student enrollment.
And librarians are speaking about the need to shelve 20 books per pupil.
Little wonder, then, that libraries as large as spectator gyms are already
in existence, and the end is not yet in sight! (And they were all carpeted!)

Although most of the schools visited had made impressive provision for
materials centers, the Evanston Township High School deserves special mention.
The central library which serves all four houses, contains some 55,000 volumes
for 4900 students. Each of the four houses also has an extensive resource
center which will contain 15,000 volumes by 1970. The central library is
a research library while the resource centers are working libraries with the
most current and up-to-date materials. Selections in each resource center
are allocated for the various departments, and teacher offices are located
in the midst of the resource center so that teachers, too, are a major re-
source available to students during independent study time. The visitors
gained the impression that the decision to locate teacher offices in the
heart of the resource centers was not sound.

D. Vocational Education

Vocational-technical education was provided in three quite different
settings in the several high schools visited. There were facilities similar
to those found in conventional comprehensive high schools; two schools were
area vocational high schools; and one high school sent pupils to many community,
business, and industrial facilities on cooperative programs in business, food
services, and health services.

One observer reported his impressions of visits to several schools as
follows:

"The two facilities that we saw with extensive vocational education
facilities tended to reinforce my belief that the place for occupational train-
ing is as a part of a comprehensive high school. The content of in-school
occupational programs must be broadened to the clusters concept and detailed
sophisticated technical training can best be done in cooperation with industry,
higher education, or continuing education programs. As we broaden the occu-
pational training spectrum, we allow for much more horizontal as well as
vertical mobility of the individual within and across occupational lines.
I think an important implication for our new planned facility is space. If
we are to allow for the flexibility that should be part of any cluster
approach, adequate space is a must."

The clusters approach to vocational education was well exemplified in the Quincy High School vocational building. This magnificent new facility is located next to an academic high school. Eleven vocational areas provide a broad base. Then each narrows down to a total 255 specific areas from which students may select.

Quincy also is a pilot school in an ambitious project (Project ABEL) to integrate vocational and academic education. This project aims to produce learning packages which will permit a maximum degree of individualized progression, constituting a kind of mini ES 70 plan, according to one observer.

Compton High School impressed the visitors with its stated philosophy that every student should be prepared to fill a functional role within society after leaving the high school environment. Leaders insist that instruction should be both practical and theoretical. Compton has ambitious plans to involve business, government, and industry on a massive scale in order to "farm out" large numbers of young men and women. A substantial start has been made in this direction, and is said to have contributed to a high school dropout reduction of 20%.

Observers were particularly impressed with programs in paramedical, restaurant, and office practice. Student interest was high and approaches used would appear to have relevance to many other communities. One observer said, "The enthusiasm of the students, the apparent pride in their contribution to society, and the projected feelings of self-worth of each student with whom I talked left me with a high regard for the programs observed."

E. Organizational Patterns and Staff Utilization

Virtually all schools visited had made departures from conventional scheduling practices. Five of eight senior high schools were scheduling classes on a modular basis. The lengths of the "mods" varied from 15 to 30 minutes. Generally, schools using modular schedules also employed team teaching extensively. School leaders experienced satisfaction with the functioning of both modular scheduling and team teaching. Modular scheduling was said "to provide varieties of time blocks for various subject matters according to intended stress and to allow desirable time blocks for activities." Team teaching was justified on grounds of better use being made of the instructional staff to meet the needs of students as individuals, and to provide refined grouping to meet instructional purposes.

One of the presumed virtues of modular scheduling combined with team teaching is that students are provided with unscheduled time which can be used in study, project work, teacher or student conferences, small group work, or socializing. Observations in the schools employing team teaching suggested that socializing was the most popular use of unscheduled time for students. When as much as 50% unscheduled time was provided, observers questioned that substantial educational values were being achieved with the majority of students.

Schools contemplating team teaching should recognize that space requirements for this plan will be more demanding than for conventional schedules that they may be following. Evanston Township provides five alternatives for students who are not scheduled in a class. The student may choose one of the following: (1) Study hall - supervised; (2) Open laboratories; (3) Cafeteria; (4) Student lounge, (5) Resource Centers where teachers are available for conferences. Few secondary schools could provide so many constructive choices for the students. Yet, the visitors would not willingly have settled for less.

The following evaluation of team teaching in Evanston High School was prepared by the social studies department. Its restrained language might well serve as a model for others involved with innovation.

"Is team teaching successful?" The fact that we continue to use it indicates that we believe it is or can be. But the technique itself does not guarantee success. This, as always, depends primarily upon the skill and creativity of the teachers involved. The team techniques can only afford greater opportunity for the exercise of these abilities in improving instruction.

"Those of us who have engaged in team teaching are agreed that it is immeasurably more difficult than instructing a traditional class. One is no longer free to plan his work according to his own ideas--his colleague must be consulted, and they will not always agree. No teacher is unaffected by the responsibility of lecturing or otherwise giving instruction to a class from two to four times as large as others. His unease is compounded by the likelihood of having one or more of his colleagues present, and the knowledge that they will evaluate his performance. Good use of the overhead projector alone requires a great deal of thought and hard work. But most of the teachers who have been involved in team teaching agree that its advantages outweigh its disadvantages.

"Do the pupils agree? Opinion sampling indicates that most of them do. Many like the experience of having more than one teacher during the year, and generally they think that team classes are more interesting than others. At our school these classes have acquired prestige, where there was skepticism in the beginning. There are requests to be in them, and almost none to be withdrawn.

"Do pupils learn more in team classes than in others?
We have no reliable objective evidence, because thus
far we have been unable to eliminate the variables
of teacher enthusiasm and competence and of pupil
ability and interest. Nor have we been able to
find or to develop evaluation instruments which we
consider sufficient. But we are continuing our
efforts to do so. And we are continuing experi-
mentation in our team teaching, believing that thus
far we have only begun to realize the possibilities
of this promising technique."

Flexible scheduling was also combined with team teaching in several
schools. Under this plan the length of the class period is usually uniform
but the number of class periods weekly varies for each class and/or group of
students. Individual students are scheduled in large groups, small groups,
and are provided with varying amounts of unscheduled time the use of which
may be determined by the teacher, the student, or a combination of both.
Administrators and teachers new to team teaching might find this approach to
team teaching somewhat more "manageable" than that of modular scheduling.
Observers were impressed that both flexible and modular scheduling have theo-
retical and practical virtues to commend them.

The pilot schools made extensive use of teacher aids and paraprofessionals
and expressed great satisfaction with their contribution to the improvement
of instruction. The impression of the visitors was that this assessment was
probably soundly based. Aids corrected papers, administered tests, checked
out materials and books in the media centers, logged grades, prepared labo-
ratories, made transparencies, etc. In several schools, paraprofessionals
were employed to help teachers with supervision of students in large classes,
study halls, cafeterias, and hallways.

Attempts to compare operational costs in pilot schools with conventional
schools were not very fruitful. All schools visited have received, and are
receiving, subsidies from one or more sources. They have difficulty in esti-
mating what additional costs are involved to themselves for pilot programs
and consequently find it difficult to help visitors in this regard. Hopefully,
a cost analysis methodology in the future will be applied to experimental
projects from the start. Until this has been done, it is still prudent to
exercise caution in embarking on new ventures without prior assurance that
minimal requirements for personnel, space, and equipment can be met.

PART III - THE CHANGE PROCESS IN EXPERIMENTAL SCHOOLS

Stimulators of Change

Educational reformers seldom describe the process by which their unique
contribution was introduced into the main stream of American education.
Generally, their writings point with alarm at the follies of current practioners
and practices. They bewail the blinders on the eyes of their contemporaries
which prevent them from recognizing the true vision of quality education as
described in the writings of the masters. They note that tradition is all
powerful, and that educational councils resist the new because of vested
interests in the old.

In the literature of educational innovation, one finds mostly absolutes.
If a problem exists, the solution proposed inevitably follows. If a new
approach or system is suggested, however complicated, the implication is given
that only incompetents fail. Experiments, as reported in the literature of
innovation, always succeed but instruments of measurement are seldom described.
Coefficients of correlation are always positive, while the Hawthorne Effect
sheds its friendly glow upon one and all concerned with the innovation.

The Need for Objectivity Among Innovators

Stimulators of change whether they be college professors, school teachers,
school administrators, or whether employed by state and federal agencies or
by foundations may be doing a disservice to their causes when they propogan-
dize rather than explain or justify. In their zeal to promote new practices
before they are grounded in realistic and successful experience, they encourage
naive followers to embark on projects which are unsuccessful because of the
failure of the experimenters to warn against problems which could not be
resolved in certain kinds of school situations. Such local failures may serve
as deterrents to experimentation in neighboring school systems where a similar
project might have succeeded.

It is regrettable that so little is known after so many years of trial
and error about what is required to make new programs function effectively
in non-experimental settings as regards plant, personnel, equipment, and money.
Hopefully new and ambitious projects of the future will be truly experimental
in design and execution, and policy-makers will stipulate that innovators
experiment without deciding beforehand that the proposal is, by definition,
educationally sound and workable.

Organizing and Financing Change

Certain impressions, which are reported below, were gained by members of
the visitation team regarding how new programs might be organized and financed
to improve chances of success. In most instances, viewpoints of the experi-
menters, themselves are included. In others, suggestions are reported which
no innovator might support.

It is recommended:

1. That experimental plans and procedures be described clearly in language customarily employed in experimental scientific journals.

2. That respective roles of participants in the experiments be defined explicitly.

3. That those who sponsor and finance the experiment accept the possibility that failure might result.

4. That reports of the several stages during an experiment be descriptive and neutral in tone until such time as the ultimate success or failure has been determined.

5. That because virtually every experimental project visited reported inadequate subsidization of the project as regards time, personnel, equipment, and capital outlay items, contingency funding to cope with unanticipated problem situations should be budgeted.

6. That recognition be given to the unrealistic expectation that teachers in cooperating schools will have the time and competency to develop new instructional materials, programs, and software in addition to serving as experimental classroom teachers. Experimenters and evaluators may also fail to possess required writing skills. Therefore, teams made up of experimental theorists, classroom teachers, and professional writers should be decided upon before staff and financial requirements are drawn up.

7. That schedules and deadlines be more realistically planned at the start of a project. Errors made are always in the direction of underestimating time requirements. Writing and printing deadlines are often more difficult to meet than are other projected timings.

8. That devising appropriate evaluation instruments and procedures be recognized as troublesome. A frequent mistake is to assume that results from the use of objective tests are superior to informed judgments of people which is sometimes not the case.

9. That enthusiasm and belief in new experimental programs be recognized as an essential ingredient in order to insure some degree of success.

PART IV - NEW DIRECTIONS FOR CHANGE

The High School as a Social Institution

High schools are both educational and social institutions. During recent years, efforts to improve high schools have concentrated more on improving the climate for learning than upon the climate for constructive human relationships. Perhaps the present is the time to correct this imbalance. Examples of faculty and student unrest clearly are not isolated phenomena. Rather, they suggest to some observers that fundamental and unresolved problems may be surfacing which should not be ignored or glossed over. This portion of the report will focus on the need for reformers and innovators to direct their attention on the need to strengthen human relationships within secondary schools.

The Student as a Person

Students who fail to establish satisfactory personal relationships with other students, with teachers and administrators, and with other school employees (secretaries, bus drivers, food handlers, janitors) are least likely to relate successfully to the instructional programs of the school. Although few would dispute the relevance or truth of this generalization, one finds that teachers and administrators generally have done too little to institutionalize constructive interpersonal relationships. Instead, faculties are mostly concerned with management aspects of school operation. Examples are given below which suggests that students are sometimes dealt with as pawns to be manipulated and shifted about as easily and painlessly as possible. The end results of many of these management efforts is to depersonalize the school and to make it impossible for sound human relationships to be established.

In some high schools the school day is so tightly scheduled for some students that making friends with others is very difficult. Let us assume that a school bus deposits students in front of the building five minutes before classes begin. They have only time enough to go to their lockers and then on to the first class. After a short announcement period, students begin the first of a series of six to eight classes which proceed consecutively except for a break at noon. The noon hour has been deliberately shortened to 30 minutes to maximize use of the cafeteria and to reduce the noise and confusion which result when students socialize. Students are usually forbidden to leave the high school during the lunch period. At the end of the day, the bus students again have 5 to 10 minutes to hurry to their lockers before leaving for home. For these students, student activities have little attraction or appeal. Bus students seldom get to know teachers well because they can't stay after school, and because each classroom teacher usually enrolls from 100 to 150 different students daily. Counselors relate to 300 to 500 different individuals during the course of the year. Librarians

relate to the entire student body as do school administrators. Problems of this kind are magnified in large high schools and in all schools with a high degree of student mobility.

School Size and Student Involvement

Research conducted at Ohio State University and the University of Kansas suggests that constructive student involvement in social and educational student activities is significantly higher in schools enrolling 800 students or less than in larger high schools. Their research indicates that as school enrollments rise, student involvement declines. Although additional studies of this kind would be helpful, knowledgable educators are inclined to believe results would probably confirm the judgments already expressed.

Trends in our society appear to be producing larger high school enroll-ments because of the school merger movement and because many systems have become enamoured of the school-park concept in efforts to solve another kind of social problem. There is little evidence that school leaders are suffi-ciently aware of the problems which large enrollments have created in the past. These problems did not appear as pressing during past decades as they do today because a high drop-out rate obscured the failures of the school. With im-proved holding power, the large high school can hardly ignore the reality of numbers of uninvolved and alienated youth who remain in school largely be-cause the high school diploma is required as a passport into the world of employment. In some schools, the fiction that a majority of students are actually learning indispensible knowledge, attitudes, and skills as prepa-ration for effective functioning as citizens in a democratic society has long since been dissipated. What must be done in such high schools is to revive a sense of purpose and dedication to the highest ideals of society among students and faculty members. This goal, in the judgment of the writer, constitutes one of the most important agenda items of the future for all secondary schools.

Establishing Meaningful Staff Relationships with Students

Problems of structuring positive teacher-student relationships in large high schools, in schools with a high degree of student mobility, and in schools transporting large numbers of students will be with us for decades to come. These, and other problems will not disappear. What is needed arc hypotheses upon which to base experimentation and educators willing to face up to problems which are traditionally glossed over.

Almost certainly, future efforts aimed at strengthening human relation-ships in the schools will take a variety of forms. One approach may be to lengthen the school day and the school year with the additional time gained being used to schedule interesting student activities for all students. Others include stressing the values inherent in teacher teams, in small group pro-jects, and in seminar-type instruction. Some old-timers recommend the re-vival of the homeroom, not primarily for guidance purposes, but as a mechanism for a limited number of students of the same age to share certain experiences during their years in high school.

One may hope for a revival of interest in proposals such as the Random Falls Plan which suggested unique approaches to citizenship education. Thoughtful educators will also welcome proposals recommending the establishing of "schools within schools," in those situations where large numbers of students are to be housed on one campus. It is important that outcomes of such experiments be carefully evaluated so that lessons learned can find their way into the main stream of practical school administration.

Planning Buildings to Develop Constructive Human Relationships in the School

School buildings planned by faculty members have seldom given a high priority to the personal and social interests and needs of students. Teachers have justly criticized school buildings planned and designed by architects which show a minimum of concern for the values of the professional educator. Yet, new structures rising today often show little improvement as regards to how students relate to the building. The faculty sometimes pays lip-service to the concept of the school-within-a-school but departmental loyalties have taken precedence over student involvement in order that classrooms can be grouped together by departments. Teacher lounges have become a reality; student lounges are few and far between. Teacher offices are listed among the "demands" of teacher associations; student carrels are still the exception and not the rule.

Those who believe that better planned school buildings might contribute substantially to stronger inter-personal bonds within the school have little in the way of concrete example to prove these points by illustrating theory in successful real-life situations. What is lacking are schools that have carried theories to logical conclusions as regards decentralization of school functions. Hopefully, coming decades will provide both the theories and the laboratory settings in which the experiments can take place to determine whether educationally efficient and effective schools can also exemplify warm and friendly human relationships.

Experimentation May Contribute to Better Human Relationships

Experimental schools often convey to visitors an impressive sense of vitality and purpose among faculty and students. It is possible that important projects accumulate so much of the enthusiasm of the innovators that they help to stimulate creativity in all persons associated with them. If the above is true, then might not a case be made for involving all schools in one or more experiments which have been conceived with care and adapted appropriately to local circumstances? Isn't it possible that most experimental groups match or exceed the performance of control groups not only because of the experimental input but also because of the feeling of belonging to a group with shared goals?