A Comparative Analysis of Individually Guided Education in the Elementary Grades of the Benton Harbor Area Schools

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A COMPARATIVE ANALYSIS OF
INDIVIDUALLY GUIDED EDUCATION
IN THE ELEMENTARY GRADES
OF THE BENTON HARBOR AREA SCHOOLS

by

Leslie C. Collins

A Project Report
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
Specialist in Education Degree

Western Michigan University
Kalamazoo, Michigan
April 1974
ACKNOWLEDGEMENTS

The author expresses his sincere appreciation to his academic advisor, Dr. Harold Boles from Western Michigan University, for his guidance in developing and writing the report of this project.

Without the assistance of Mr. John Watson, principal of Calvin Britain School in Benton Harbor, this project would not have been possible. His knowledge of IGE was indispensable throughout the course of this study. Appreciation is also extended to Mr. Ernest Tarzwell and Mr. Roger Klumb for their time and advice as IGE consultants.

A special commendation is deserved by Mrs. Reed, from Benton Harbor's office of Testing and Assessment, for her help in explaining the testing programs.

Finally, to my wife Becky, and our two sons, Steve and Doug, I am grateful for the patience and understanding they have given throughout the course of this project.

Leslie C. Collins
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>DESCRIPTION OF IGE</td>
</tr>
<tr>
<td></td>
<td>Structural Design</td>
</tr>
<tr>
<td></td>
<td>Objectives and Programs</td>
</tr>
<tr>
<td>II</td>
<td>SUMMARY OF LITERATURE AND RESEARCH</td>
</tr>
<tr>
<td></td>
<td>Cost of Implementation</td>
</tr>
<tr>
<td></td>
<td>Teacher Opinion</td>
</tr>
<tr>
<td></td>
<td>Pupil Attitude</td>
</tr>
<tr>
<td></td>
<td>Parent Attitude</td>
</tr>
<tr>
<td></td>
<td>Pupil Achievement</td>
</tr>
<tr>
<td>III</td>
<td>STUDY DESIGN</td>
</tr>
<tr>
<td></td>
<td>Comparative Test Results Study Design</td>
</tr>
<tr>
<td></td>
<td>Teacher Opinion Survey Study Design</td>
</tr>
<tr>
<td></td>
<td>Pupil Opinion Survey Study Design</td>
</tr>
<tr>
<td>IV</td>
<td>COMPARATIVE TEST RESULTS</td>
</tr>
<tr>
<td></td>
<td>Comparison of Sullivan and ABC Reading</td>
</tr>
<tr>
<td></td>
<td>Comparison of IGE to Non-IGE</td>
</tr>
<tr>
<td>V</td>
<td>SUMMARY AND RECOMMENDATIONS</td>
</tr>
<tr>
<td></td>
<td>BIBLIOGRAPHY</td>
</tr>
<tr>
<td></td>
<td>APPENDICES</td>
</tr>
</tbody>
</table>
LIST OF FIGURES AND TABLES

FIGURE

1  IGE Organizational Chart ..................... 3
2  Instructional Programming Model in IGE . . . 7

TABLE

1  California Achievement Test Scores for
   Second Grade Pupils Who Received
   Sullivan Reading Instruction .......... 33
2  California Achievement Test Scores for
   Third Grade Pupils Who Received American
   Book Company Reading Instruction .. 34
3  Comparison of California Achievement Test
   Gain Scores at IGE and Non-IGE Schools . 37
4  California Achievement Test Scores for
   Fifth Grade Pupils Who Received American
   Book Company Reading Instruction . . . 38
5  Criterion Referenced Reading Test Scores
   for First Grade Pupils ............... 40

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In recent years, elementary school educators, textbook publishers, and people in teacher training institutions have given increasing attention to the individualization of instruction for boys and girls. Many different systems have been developed to achieve this goal and Individually Guided Education (IGE) is but one of those systems.

What makes IGE different from other attempts and programs to individualize instruction? The primary difference is in the organizational-administrative structure of staff members who have varying degrees of responsibility and accountability for pupil performance. A second major difference is in the manner of assessment of pupil skills, with the development of instructional programs based upon behavioral objectives which will teach skills at the appropriate level.

The remainder of this chapter will be devoted to describing the IGE system as it is currently being used. The information presented was abstracted from two recent books from the Wisconsin Research and Development Center for Cognitive Learning at the University of Wisconsin in Madison, Wisconsin. The first of the publications was Individually Guided Education And The Multiunit Elementary
School: Guidelines For Implementation. The other publication was The Wisconsin Design For Reading Skill Development: Rationale And Guidelines. It would be impractical to explain in great detail all of the components of the IGE system and the reader is referred to the above two publications for additional information.

Structural Design

As mentioned previously, the primary difference which separates IGE from other individualized systems, or the traditional system, is the organizational-administrative structural design. The structure of IGE may be likened to differentiated staffing which has been developed in recent years. The organizational hierarchy of the IGE system consists of three distinct levels of operation and responsibility (see Figure 1).

The first of these three levels is the instructional and research (I&R) unit which replaces the age-graded, self-contained classroom in traditionally-oriented schools.

---


Central Office Administrator
Representative Teachers
Representative Unit Leaders
IMC Director
Principal
Secretary
Teacher Aide
Teacher
First Year Teacher
Instructional Secretary
Intern
100-150 Students
Ages 4-6
100-150 Students
Ages 6-9
100-150 Students
Ages 8-11
100-150 Students
Ages 10-12

FIGURE 1
IGE ORGANIZATIONAL CHART

Building Instructional Improvement Committee
System-Wide Policy Committee
Instructional & Research Unit

1Klausmeier, op. cit., p. 21.
This unit consists of a unit leader, two or three staff teachers, one first-year teacher, one student teacher, an aide, and approximately 100-150 students. The number and type of professional and non-professional staff members would be dependent upon the number of students in the unit. The main functions of the I&R unit are to plan, carry out, and evaluate, as a team, the instructional programs based upon the needs of the children within their unit. The unit leader is not an administrator or supervisor, but is responsible for planning within the unit and coordinating with the other units in the same building.¹

The second level of hierarchy is the instructional improvement committee (IIC). This committee is comprised of the building principal and all of the unit leaders of the building. The IIC has four main functions:

- Stating the educational objectives and outlining the educational program for the entire school building;
- Interpreting and implementing system-wide policies that affect the educational program of the building;
- Coordinating the activities of the I&R units to achieve continuity in all curriculum areas;
- Arranging for the use of facilities, time, materials, etc., that the units do not manage independently.²

The third and highest level of organization is the

¹Klausmeier, op. cit., p. 20.
²Klausmeier, op. cit., p. 22.
system-wide policy committee (SPC). The SPC was created to facilitate the transition from traditional programs to the IGE system. The SPC consists of representation from the central office, and a few of the principals, unit leaders, and teachers. The SPC has four main decision-making and facilitative responsibilities. These responsibilities include identifying the functions to be performed in each IGE school in the district, recruiting personnel and arranging for their inservice education, providing instructional materials, and disseminating relevant information within the district and community. ¹

Each of the three levels of organizational structure described above will vary somewhat from district to district depending upon the size of the district, the community, student population and professional staff. However, these differences would not be major differences which would alter the basic design of the IGE system.

Objectives and Programs

The second difference which sets IGE apart from other individualized approaches is the organization of small groups combined with individualized instruction based upon assessment, behavioral objectives and planned

¹ibid.
programs to achieve the objectives as determined by criterion referenced tests (See Figure 2). This system was planned in conjunction with the Wisconsin Design for Reading Skill Development which is a relatively new reading program. Even though this reading program and IGE were developed simultaneously at the University of Wisconsin Research and Development Center, each can operate independently. The schools in Benton Harbor using IGE, which are hereafter indentified as "IGE schools", are described in later chapters of this project. They, along with the non-IGE schools, used both the Sullivan and American Book Company reading materials in place of the Wisconsin reading program.

The IGE system is different from most other systems of instruction because the instructional program is planned by more than one teacher. Students in IGE schools benefit from the knowledge, experience and expertise of the personnel of the IF&R unit, the IIC, and the SPC, all of which have been described above.

Otto and Askov described the IGE system as follows:

IGE is a system of elementary education that includes: a statement of behavioral objectives; an instructional program of materials, equipment, and student and teacher activities designed to achieve the objectives; procedures for the initial placement of the students and subsequent monitoring of their progress; guidelines for organizing instruction; and measurement tools and evaluation procedures.

The main objective of IGE is to provide for
State the educational objectives to be attained by the student population of the building after a year and longer time periods in terms of level of achievement and other performance related to each curriculum area and in terms of other values and action patterns.

Estimate the range of objectives that may be attainable for subgroups of the student population.

Assess the level of achievement, learning style, and motivation level of each student by use of criterion-referenced tests, observation schedules, and work samples with appropriate-sized subgroups.

Set specific instructional objectives for each child to attain over a short period of time.

Plan and implement an instructional program suitable for each student by varying (a) the amount of attention and guidance by the teacher, (b) the amount of time spent in interaction among students, (c) the use of printed materials, audiovisual materials, and direct experiencing of phenomena, (d) the use of space and equipment (media) and (e) the amount of time spent by each student in one-to-one interactions with the teacher or media, independent study, adult- or student-led small group activities, and adult-led large group activities.

Assess students for attainment of initial objectives and for setting next set of instructional objectives.

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Objectives not attained → Objectives attained

Reassess the student's characteristics

Implement next sequence of program

Feedback loop

---

FIGURE 2

INSTRUCTIONAL PROGRAMMING MODEL IN IGE

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*Klausmeier, op. cit., p. 19.

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differences in children's rates of learning and in mode and style of learning. . . . The primary means for attaining these objectives in any curriculum area is to identify appropriate instructional objectives for each child in terms of his present level of achievement and other characteristics; and then to (a) group children who have common objectives and levels of achievement for part of their instruction, (b) arrange within groups for appropriate one-to-one tutoring, and (c) provide for independent study using books and other instructional material. Continued assessment and frequent regrouping are required.¹

The IGE system described above is distinguishable from other instructional systems in two basic ways. First, it utilizes the talents of several professional staff members to plan and present instruction to pupils. Second, it emphasizes the planning of instruction based upon performance objectives and a wide variety of materials and activities to achieve these objectives.

The next chapter is a review of the research and other literature printed about IGE since it began in 1966. Chapter III is a description of the study design for the research which was conducted by this investigator. Chapter IV is an analysis of the test results which were used to compare the achievement of pupils at IGE schools to those at non-IGE schools. The pupils in these two groups will hereafter be referred to as "IGE pupils" if they were taught by this method and as

¹Otto and Askov, op. cit., p. 1.
"non-IGE pupils" if they were taught by any other instructional system.

The terms "IGE", "Multiunit School", and "MUSE/IGE" are all used interchangeably throughout this report. The reader should not become confused because all three of these terms are referring to the same system of instruction. The multiple terminology was probably a result of two different organizations working simultaneously to implement and refine the process. These two organizations were the Wisconsin Research and Development Center for Cognitive Learning at the University of Wisconsin and the Institute for Development of Educational Activities (I/D/E/A) at the Kettering Foundation.
CHAPTER II
SUMMARY OF LITERATURE AND RESEARCH

Individually Guided Education has only been in operation now since the fall of 1964 when Project MODELS began under the leadership of Herbert J. Klausmeier from the University of Wisconsin and the Wisconsin Department of Public Instruction.\(^1\) Like many other new ideas in education, IGE has been difficult to implement because of the reluctance of educators, and the general public, to accept innovations in our educational system. However, during the past four to six years IGE appears to be receiving a great deal of educational and governmental support and is rapidly spreading throughout the United States.

In 1966 there were only three school districts in which IGE had been implemented, but by the end of the 1970-71 school year this number had increased to 164. The U.S. Department of Health, Education and Welfare selected IGE for nationwide installation for the 1971-72 school year bringing the total to over 500 IGE schools in eighteen states.\(^2\) Approximately 350 new schools began

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\(^1\)ibid., "What Makes It So Popular?", Education Digest, XXXVII (January 1973), p. 25.
\(^2\)ibid.
working with the University of Wisconsin Research and Development Center in 1972-73 to implement the multi-unit school, thus bringing the total to approximately 900 IGE schools in the United States.¹

All of the above mentioned IGE programs are in elementary schools. A few school districts have begun the IGE plan in the middle and junior high schools. A senior high school IGE plan has also been developed for possible implementation and study for some time in 1974.²

There does not appear to be any one form of IGE that is best or is operative in all school situations. Because IGE is flexible it can be easily and readily adapted to almost any school. Ironside³ concluded in his study that:

MUSE/IGE can be successfully begun and can make meaningful progress in a variety of settings: in traditional school buildings, including those of two and three floors; in center-city areas, suburbs, large and small towns, and rural regions; in schools with essentially middle-class or lower-class populations; in schools with less than optimum


²__________, "What Makes It So Popular?", op. cit., p. 28.

libraries or instructional resources; in small and medium-sized schools (up to perhaps 800 students).

Pelligrin\(^1\) also found in his study that there could be variations even among multiunit schools. He reported that not only could there be differences among schools, but there could also be differences among the IGR units within a school. Such flexibility allows for each school and each unit to take advantage of the strengths of the school plant, community, and teaching personnel.

Thus, when one talks of a nationwide MUSE/IGE installation, he must think and interpret in terms of many approaches. And when one talks of a MUSE/IGE school, he must think and interpret in terms of its many teachers, rooms, units, supportive staff, and other variables.\(^2\)

Because there is no one established IGE method which will guarantee success in all situations, Ironside\(^3\) suggested that:

> Staffs, once committed and on their way, would do well to consider a trial period in IGE programming--with all that implies--in place of an immediate descent into the maelstrom. Depending upon previous efforts and present circumstances this might not be

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\(^2\)Ironside, op. cit., p. 232.

\(^3\)Ironside, op. cit., p. 234.
necessary; but some schools would clearly benefit by careful planning and implementing of a 3- or 4-week period of "practicing" the instructional model.

Cost of Implementation

Because IGE requires a different hierarchy of staff than the age-graded traditional classrooms, and also because IGE requires a greater variety of instructional materials and equipment, one might expect the IGE program to be quite expensive to implement and operate. Initially to implement IGE it does cost more than maintaining a program already in operation. Almost all innovations require an investment for some equipment and/or materials.

The Wisconsin R&D Center recommends the allocation of at least ten dollars per pupil to cover these costs for each of the first two years. After that, a Multi-Unit school can be run at no greater cost than a traditional school--perhaps for less, according to the superintendents and principals who have had the most experience with it.¹

In another study of implementation costs Klausmeier² found that after the initial investment, the average cost of instruction per pupil was about the same in


IGE schools as it as in other elementary schools within the same district.

A multiunit spends more for curriculum materials because new curricula are constantly being introduced or old ones modified for individual needs. But, these costs are more than made up for by handling teacher absences within the unit; there is no need for substitute teachers.¹

Teacher Opinion

"Since no educational innovation is likely to have much chance of success if those responsible for its operation are not in agreement with its rationale, staff opinion is an important aspect of project evaluation."² To implement IGE against the wishes of a staff would be an invitation to failure before implementation could begin. It is therefore extremely important to educate the staff so that they have a thorough understanding of the basic premises of IGE.

Researchers and authors of educational literature have found some differences of opinion about IGE among

¹Graham, op. cit., p. 5.
the teachers in multiunit schools. IGE appears to have several definite strengths, but there are also a few weaknesses which require additional study and inservice training. The weaknesses reported were more prevalent during the first year or two of implementation, but the strengths were reported as having a longer lasting effect. Almost all authors of the research reported in this project point out that the teachers believe the most important advantages of IGE are the individualization of instruction for pupils and the freedom of teachers to experiment with new techniques and materials.

Pelligrin\textsuperscript{1} and his associates conducted a survey of IGE and non-IGE teachers to learn their attitudes toward job satisfaction. Of the ten items in their survey, all were rated higher by the multiunit teachers than by the control group of teachers. Three of these were rated only slightly higher, but the other seven were significantly higher. The seven items rated significantly higher by multiunit school teachers are as follows:

1. Satisfaction with progress toward one's personal goals;
2. Satisfaction with personal relationships with administrators and supervisors;

\textsuperscript{1}Pelligrin, \textit{op. cit.}, pp. 11-12.
3. Opportunity to accept responsibility for one's own work and the work of others;
4. Seeing positive results from one's efforts;
5. Personal relationships with fellow teachers;
6. Satisfaction with one's job in light of one's career expectations; and
7. The availability of pertinent instructional materials and aids.

In another study the following statements expressed favorable opinions of IGE teachers:

1. Flexibility of staff utilization;
2. Team planning and systematic in-service training, and sharing of ideas among units;
3. Continuous and systematic evaluation which leads to program modification and instructional improvement;
4. Use of parents and student tutors in instruction; and
5. Clear definition of roles among the staff.¹

Graham² found in his study that the IGE teachers liked the multiunit school and the individualization of instruction that was made possible. These teachers also liked the influence that they had on decisions which affected not only individual students, but the entire school.

All three reports mentioned above indicate that IGE teachers look favorably upon making decisions together and sharing ideas. Even though this is seen as a benefit for planning individualized instruction, it

¹Lorton, op. cit., p. 12.
²Graham, op. cit., p. 5.
is also a problem in some schools because the teachers lack the necessary skills to effectively deal with the change and make the decisions which are so important in an IGE program. Inservice training was the recommendation for solving this problem.\(^1\)

Pupil Attitude

Three research reports were located which compared the attitudes of IGE-taught pupils to the attitudes of non-IGE-taught pupils. Morrow\(^2\) conducted the research for the first report during the 1967-68 school year and his findings did not indicate any significant differences between the attitudes of pupils in multiunit schools and the attitudes of pupils in control schools. Morrow's research should be looked upon with caution for two reasons. First, his experimental groups and control groups were unevenly matched in all three of his comparisons. Secondly, his findings may not be accurate because the instrument that he used to measure attitudes was developed specifically for his study and it had not been validated. Because of these circumstances in Morrow's study, 

\(^1\) Lorton, op. cit., p. 12.

the research of the two reports mentioned below is considered by this project developer as being more valid than Morrow's.

The second research of pupil attitudes was conducted by Lorton\(^1\) during the 1971-72 school year. Lorton used the **Student Morale Scale** for the first part of his survey and he considered this to be "... the most valid and reliable instrument ever devised for this purpose. ..." This survey includes seventy-two statements and is the same survey which was intended for use in this project in some of Benton Harbor's IGE schools. However, for reasons explained in the next chapter this part of the project could not be completed.

Lorton also used the pupil attitudinal survey developed by the Institute for Development of Educational Activities (I/D/E/A). This survey and the **SMS survey** were administered twice during the school year and both found the attitudes of IGE-taught pupils to increase in positiveness. The **SMS** revealed that the attitudes of pupils made a significant positive shift over the course of the first year at the experimental school. The I/D/E/A survey also revealed "more positive attitudes and feelings about school" of the pupils

\(^{1}\) Lorton, *op. cit.*, p. 7.
at the IGE school. The eleven statements below were the most meaningful indicators of increased positive attitudes.

1. Greatly improved liking for school;
2. Greater number of teachers teaching each child;
3. Greater amount of movement during the school day;
4. Class makeup on basis of performance;
5. Greater liking for class-mix across age levels;
6. Doing things they like each day;
7. Vastly improved instructional support from teachers;
8. Greatly improved daily use of IMG by individuals;
9. Increased effectiveness of continuous progress instruction;
10. Greater clarity in learning objectives; and
11. Increased agreements between teacher and students on quality of student performance.

The third research report found, which compared attitudes of multiunit school pupils to the attitudes of pupils in traditionally organized schools, was conducted by Nelson and was reported by the University of Wisconsin R & D Center in their eighth annual report of IGE. Nelson also used the SMS and his findings

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1 Lorton, op. cit., p. 10.
2 Lorton, op. cit., p. 12.
support those of Lorton. Nelson's conclusions were as follows:

1. Pupils in multiunit schools generally appeared to have a more positive self-concept as learners than did pupils in traditionally organized schools;

2. Pupils in multiunit schools displayed a more positive attitude toward their fellow pupils than did pupils in traditionally organized schools;

3. There was no difference between multiunit pupils and pupils in traditionally organized schools with respect to their attitude toward teachers;

4. Pupils in multiunit schools generally appeared to have a more positive attitude toward instruction than did pupils in traditionally organized schools;

5. Pupils in multiunit schools revealed a more positive attitude toward school in general (school morale) than did pupils in traditionally organized schools;

6. Pupils in multiunit schools had a more positive attitude toward their school plant than did pupils in traditionally organized schools;

7. There was no difference between multiunit pupils and pupils in traditionally organized schools with respect to their attitude toward administration and staff;

8. Pupils in multiunit schools exhibited a more positive attitude toward their community than did pupils in traditionally organized schools; and

9. There was no difference between multiunit school pupils and pupils in traditionally organized schools with respect to the records of attendance and tardiness.

The findings of Lorton and Nelson, listed above, both appear to have demonstrated that IGE-taught pupils had a more positive attitude toward school than

Klausmeier, op. cit., pp. 4 and 5.
did the control pupils in non-IGE schools. In some instances there were no differences, but when differences did occur, they were positively favoring the MUSE/IGE.

Parent Attitude

Teacher and pupil opinions and attitudes are extremely important to the success or failure of most educational innovations. Parental attitudes are also important because they affect the attitudes of their children.

Of all the research and literature that has been written about MUSE/IGE only one survey of parental attitudes was found. Lorton\(^1\) conducted this survey and found an increase in the favorable attitudes of parents whose children were in an IGE program. He assessed the attitudes in the fall of 1971 when IGE was implemented and again at approximately the same time one year later. Because the results of the first survey in 1971 were so favorable, it was believed that no significant change would occur. However, there was a measureable increase in the favorable attitudes of parents.

One of the items on the survey dealt with the

\(^1\)Lorton, *op. cit.*, p. 12.
discipline of students. The parents' attitude toward discipline was the only item reported by Lorton which showed a decrease. IGE does include more freedom of movement and self-direction on the part of pupils and many parents equated this with a lack of discipline. The 82% overall favorable response on the entire survey was still considered very meaningful.

Pupil Achievement

It is difficult to compare the academic achievement of pupils in experimental and control groups because of variables such as time, materials, pupil ability, and teacher interests, which are all difficult to control and match. Morrow found this to be true in his study of comparing pupils in IGE schools to pupils in non-IGE schools in Janesville, Wisconsin. He found that in some areas the experimental groups would excel and in other areas the control groups would excel and that this variation would continue from one grade level, or school, to another with no particular pattern. He concluded that:

No systematic differences in students' achievement growth were found to exist between the Multiunit School and I&R Units, and their control schools. Although differences did appear in specific subject matters at specific grade levels, the total pattern of achievement growth did not

differ substantially.

Lorton\(^1\) also concluded that "... there were no significant or patterned overall differences". He did discover that there appeared to be "... a 'leveling process' in which extreme below-grade performance has been alleviated". This was encouraging except the above-grade level performance appeared to drop. However, this was not considered significant, only to the point that it needed to be evaluated again the following year.

A true measure of academic achievement by pupils in a multiunit school may not be possible during the first year or two. A certain amount of instructional time undoubtedly will be lost because teachers and pupils have not completely made the transition to the new instructional system. Morrow\(^2\) suggested that:

> Significant achievement gains by Multiunit students are likely to come, if at all, after the first and perhaps the second year of Multiunit operation, at a time when operational proficiency has been reached.

The above review of research and literature indicated that MUSE/IGE was spreading throughout the United States and was gaining recognition from both educational and governmental agencies. The new system allowed a great deal of flexibility to program for the individual

\(^{1}\)Lorton, \textit{op. cit.}, p. 9.

needs of students and this was looked upon favorably by parents, pupils and teachers. The two research articles pertaining to pupil achievement did not indicate that ICE was better than, or not as good as, other methods of instruction. However, they did indicate the need for additional research in the area of pupil achievement in the MUSE/IGE. Some additional research was done by the developer of this project and this is reported in Chapter IV.
The primary objective of this project was a study of the IGE schools which were in operation in seven of the twenty-three elementary schools in Benton Harbor, Michigan. The project was conducted under the leadership and guidance of Dr. Harold Boles from the Educational Leadership Department at Western Michigan University, Kalamazoo, Michigan and Mr. John Watson, principal of Calvin Britain Elementary School in Benton Harbor.

Originally this project was to have included three major areas of study. The first was an analysis of tests results to compare the academic achievement, as measured by standardized and locally prepared achievement tests, of IGE pupils to non-IGE pupils in both the inner and outer city schools. The second and third areas of the study were to have been reports of student and teacher opinion surveys.

The first major area, the comparison of test results, has been completed and is reported in Chapter IV. It was not possible to conduct the two opinion surveys in Benton Harbor at this time because of a Board of Education policy which prohibits such surveys by groups or individuals not employed by the district. These two phases of
the project were therefore not completed, but the study designs for both are presented later in this chapter. A review of similar research was substituted for the original research and was presented in the preceding chapter. The three sections below are descriptions of the study design as it was originally planned, including parts two and three which could not be completed due to circumstances beyond this investigator's control.

Comparative Test Results Study Design

Results from two different types of tests were included in this study to compare the IGE pupils to the non-IGE pupils in the elementary schools of Benton Harbor. The first test, which was used most extensively, was the California Achievement Test (CAT). The CAT was administered to all pupils in grades two through six in all of Benton Harbor's schools. The Criterion Referenced Test (CRT) was administered to all pupils in kindergarten and first grades. The CRT was completely developed by the teachers of these grades and was used exclusively in Benton Harbor with the approval of the Michigan Department of Education. Tests of the latter type are currently being developed for other elementary grades and will eventually replace the CAT completely in Benton Harbor.
The CAT and CRT were both administered twice during the school year with the first given in September and the second in April. It should be noted that the tests did not measure achievement for a complete academic school year or a complete calendar year. The time between the two tests was seven months and therefore an increase of seven months in achievement level was considered the expected rate of growth as reported in this study. For example: a seven month achievement score would be reported as .70 and a four year, three month achievement score would be reported as 4.30.

Because Benton Harbor used two different basic reading textbooks (Sullivan and American Book Company) in the elementary schools, it was decided to investigate and report only reading scores. On the CAT, pre-test and post-test reading scores were obtained for vocabulary, comprehension, and a total, and all of these scores have been reported in grade equivalents and may be found in Tables 1, 2, 3 and 4. The CRT pre-test and post-test scores were recorded in percentages of objectives responded to correctly and these scores may be found in Table 5. All scores reported were obtained by averaging the scores of twenty pupils randomly selected in each grade from each school studied.

An attempt was made to make three different comparisons by utilizing reading test scores. The first
was a comparison of the results achieved from using the Sullivan reading program compared to results from the American Book Company reading program. The second was a comparison of standardized test scores of the IGE schools in the inner city to those in non-IGE schools in the inner city and similarly for IGE and non-IGE schools of the outer city at three different grade levels regardless of which reading program was being used. The third and final comparison which was included in this part of the study was a comparison of standardized test scores of the IGE pupils in the inner city to the test scores of the IGE students in the outer city schools.

Teacher Opinion Survey Study Design

It was not possible to complete this phase of the project and the review of literature found in Chapter II was substituted. The following is a summary of the teacher opinion survey as it was originally planned.

Because the IGE system was used at only seven of the twenty-three schools, it was intended to survey all of the teachers at these seven schools and an equal number of teachers at several of the non-IGE schools. The purpose of the questionnaires was to acquire and compare the opinions and attitudes of both groups toward the IGE instructional system. Because the two groups had varying degrees of knowledge of and experience with IGE,
it was necessary to develop two slightly different questionnaires. The majority of the questions on both questionnaires were the same or very similar so that the results could have been easily compared. A sample of both surveys and the cover letter of explanation may be found in the appendices.

It was intended to analyze the completed questionnaires according to buildings to determine the overall opinions of the teachers at each of the IGE and non-IGE schools participating in the study. These survey reports could have been instrumental in determining the future of IGE at each of Benton Harbor's elementary schools.

Pupil Opinion Survey Study Design

This aspect of the project was not completed either, but the remainder of this chapter is a description of the intended methods which were to have been used to determine the attitudes and opinions of the pupils toward IGE.

Because it is difficult for young children to understand and complete a questionnaire, it was decided to limit the survey to pupils in their fourth, fifth, sixth and seventh years in school. Two classrooms of pupils in each of these four levels were to have been selected to complete the survey, from both IGE and non-IGE schools.
but with no more than two classrooms from any given school. The schools were to have been carefully selected to maintain a balance between the children in inner and outer city schools, but no attempt was to have been made to identify any pupils or classrooms and names were to be completely omitted. The only identification which was to have been done was that of schools so that the attitudes of IGE-taught pupils could be compared to non-IGE-taught pupils.

The questions in this survey were adapted from the Student Morale Scale survey which was described in the previous chapter as used by Nelson and Lorton. Only the questions pertaining to the instructional program and general school morale were selected. Most of the questions in these two sections were relevant and easily adaptable to measure the pupils' attitudes about their schools. Five positive and five negative statements about instruction and also general school morale were included in the survey to determine whether the pupils had positive or negative attitudes toward their schools. A sample of this survey may be found in the appendices to this project.

The results of all surveys were to have been analyzed to compare the attitudes of IGE and non-IGE pupils. A comparison of the attitudes of pupils in the inner and outer city IGE schools was also to have been included.
As mentioned at the beginning of this chapter, it was not possible to conduct the teacher and pupil surveys. The analysis of test results was completed and is reported in the next chapter.
CHAPTER IV
COMPARATIVE TEST RESULTS

The study design for the research reported in this chapter was described in the preceding chapter. This chapter will focus on an analysis of the test results from the IGE and non-IGE schools which were included in this study.

Comparison of Sullivan and ABC Reading

Because the Sullivan reading program was used almost exclusively in kindergarten, first and second grades and the American Book Company (ABC) reading series was used in almost all of the upper elementary grades, it was not possible to make comparisons at the same grade level. Therefore, second grade pupils in the Sullivan program were compared to third grade pupils studying in the ABC reading series and the results of these scores have been recorded in Tables 1 and 2.

An analysis of the scores in Table 1 for the Sullivan series reveals that the grade equivalent scores are quite consistent, with the lowest score of .82 in comprehension gain and the highest score of 1.19 also in comprehension gain. The average of the total gains ranged from .95 to 1.05, which is two or three months higher than the
### TABLE 1
CALIFORNIA ACHIEVEMENT TEST SCORES FOR SECOND GRADE PUPILS WHO RECEIVED SULLIVAN READING INSTRUCTION

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Pre-Test Vocabulary</th>
<th>Post-Test Vocabulary</th>
<th>Pre-Test Comprehension</th>
<th>Post-Test Comprehension</th>
<th>Pre-Test Total</th>
<th>Post-Test Total</th>
<th>Vocabulary Gain (average)</th>
<th>Comprehension Gain (average)</th>
<th>Total Gain (average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGE Inner City</td>
<td>1.28</td>
<td>2.28</td>
<td>1.29</td>
<td>2.45</td>
<td>2.24</td>
<td>1.00</td>
<td>1.16</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>Non-IGE Inner City</td>
<td>1.30</td>
<td>2.29</td>
<td>1.07</td>
<td>2.26</td>
<td>2.22</td>
<td>.99</td>
<td>1.19</td>
<td>.98</td>
<td></td>
</tr>
<tr>
<td>IGE Outer City</td>
<td>2.01</td>
<td>2.94</td>
<td>1.72</td>
<td>2.54</td>
<td>2.87</td>
<td>.93</td>
<td>.82</td>
<td>.95</td>
<td></td>
</tr>
<tr>
<td>Non-IGE Outer City</td>
<td>1.60</td>
<td>2.68</td>
<td>1.65</td>
<td>2.72</td>
<td>2.64</td>
<td>1.02</td>
<td>1.07</td>
<td>.98</td>
<td></td>
</tr>
<tr>
<td>Type of School</td>
<td>Pre-Test Vocabulary</td>
<td>Post-Test Vocabulary</td>
<td>Pre-Test Comprehension</td>
<td>Post-Test Comprehension</td>
<td>Pre-Test Total</td>
<td>Post-Test Total</td>
<td>Vocabulary Gain (average)</td>
<td>Comprehension Gain (average)</td>
<td>Total Gain (average)</td>
</tr>
<tr>
<td>-------------------------</td>
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<td>-------------------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>---------------------------</td>
<td>----------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>IGE Inner City</td>
<td>2.13</td>
<td>3.02</td>
<td>1.95</td>
<td>2.91</td>
<td>1.94</td>
<td>2.90</td>
<td>.89</td>
<td>.96</td>
<td>.96</td>
</tr>
<tr>
<td>Non-IGE Inner City</td>
<td>1.54</td>
<td>2.52</td>
<td>2.17</td>
<td>2.70</td>
<td>1.58</td>
<td>2.59</td>
<td>.98</td>
<td>.63</td>
<td>1.01</td>
</tr>
<tr>
<td>IGE Outer City</td>
<td>3.62</td>
<td>4.81</td>
<td>3.59</td>
<td>5.41</td>
<td>3.64</td>
<td>5.22</td>
<td>1.19</td>
<td>1.82</td>
<td>1.58</td>
</tr>
<tr>
<td>Non-IGE Outer City</td>
<td>2.58</td>
<td>3.52</td>
<td>2.79</td>
<td>3.76</td>
<td>2.67</td>
<td>3.69</td>
<td>.94</td>
<td>.97</td>
<td>1.02</td>
</tr>
</tbody>
</table>
expected rate of growth during a seven month period of time.

The average scores of third grade pupils who received reading instruction from the ABC series are recorded in Table 2. The scores in this table are also quite consistent, with the exception of the high scores achieved by pupils at the IGE outer city school. Further investigation revealed that the pupils at this particular suburban school had usually had outstanding achievement for the past several years and the progress did not appear to be related to the ABC reading program.

If the scores of the twenty pupils from the outer city IGE school (see Table 2) were not included, the remaining gain scores for the sixty third grade pupils would average out to 1.00 or three months (.30) above the expected growth rate of seven months. The average score was .99 for all eighty second grade pupils who received instruction from the Sullivan reading series. When the scores of the sixty pupils in the ABC, excluding the IGE outer city school, are compared to the eighty pupils in the Sullivan reading series, there does not appear to be any great difference between results achieved by using the two programs. In fact, both show results in excess of the seven month growth which was considered normal.
Comparison of IGE to Non-IGE

The first part of this chapter dealt with a comparison of the Sullivan and ABC reading programs regardless of the IGE, non-IGE variable. In this part, the CAT and CRT scores will be studied and IGE schools will be compared to non-IGE schools with no consideration being given to the reading program variable. The reading scores reported in Tables 3 and 4 will be useful to the reader in understanding the remainder of this chapter.

When the gain scores for vocabulary, comprehension, and total of the IGE inner city schools were compared to the non-IGE inner city schools (see Table 3) there did not appear to be much difference between the two. The difference between the total gain scores of .92 and .97 corresponded to only one-half of a school month and this certainly should not be considered a significant difference in favor of the non-IGE inner city school. When the same comparison was made for the outer city schools there appeared to be more of a difference, particularly in comprehension and total gain scores. However, it should again be pointed out that the pupils in the third grade IGE outer city school had traditionally scored higher on reading tests, even before IGE was introduced at this school. If the scores from this third grade are not included, the difference between the IGE and non-IGE schools
TABLE 3
COMPARISON OF CALIFORNIA ACHIEVEMENT TEST GAIN SCORES AT IGE AND NON-IGE SCHOOLS

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Grade</th>
<th>Vocabulary Gain</th>
<th>Comprehension Gain</th>
<th>Total Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGE Inner City 2</td>
<td>2</td>
<td>1.00</td>
<td>1.16</td>
<td>1.05</td>
</tr>
<tr>
<td>IGE Inner City 3</td>
<td>3</td>
<td>.89</td>
<td>.96</td>
<td>.96</td>
</tr>
<tr>
<td>IGE Inner City 5</td>
<td>5</td>
<td>.80</td>
<td>.68</td>
<td>.74</td>
</tr>
<tr>
<td>Average Gain</td>
<td></td>
<td>.90</td>
<td>.93</td>
<td>.92</td>
</tr>
<tr>
<td>Non-IGE Inner City 2</td>
<td>2</td>
<td>.99</td>
<td>1.19</td>
<td>.98</td>
</tr>
<tr>
<td>Non-IGE Inner City 3</td>
<td>3</td>
<td>.98</td>
<td>.63</td>
<td>1.01</td>
</tr>
<tr>
<td>Non-IGE Inner City 5</td>
<td>5</td>
<td>.85</td>
<td>.96</td>
<td>.93</td>
</tr>
<tr>
<td>Average Gain</td>
<td></td>
<td>.94</td>
<td>.93</td>
<td>.97</td>
</tr>
<tr>
<td>IGE Outer City 2</td>
<td>2</td>
<td>.93</td>
<td>.82</td>
<td>.95</td>
</tr>
<tr>
<td>IGE Outer City 3</td>
<td>3</td>
<td>1.19</td>
<td>1.82</td>
<td>1.58</td>
</tr>
<tr>
<td>IGE Outer City 5</td>
<td>5</td>
<td>.80</td>
<td>1.40</td>
<td>1.07</td>
</tr>
<tr>
<td>Average Gain</td>
<td></td>
<td>.97</td>
<td>1.34</td>
<td>1.20</td>
</tr>
<tr>
<td>Non-IGE Outer City 2</td>
<td>2</td>
<td>1.02</td>
<td>1.07</td>
<td>.98</td>
</tr>
<tr>
<td>Non-IGE Outer City 3</td>
<td>3</td>
<td>.94</td>
<td>.97</td>
<td>1.02</td>
</tr>
<tr>
<td>Non-IGE Outer City 5</td>
<td>5</td>
<td>.84</td>
<td>1.43</td>
<td>1.08</td>
</tr>
<tr>
<td>Average Gain</td>
<td></td>
<td>.93</td>
<td>1.16</td>
<td>1.03</td>
</tr>
<tr>
<td>Type of School</td>
<td>Pre-Test Vocabulary</td>
<td>Post-Test Vocabulary</td>
<td>Pre-Test Comprehension</td>
<td>Post-Test Comprehension</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------</td>
<td>----------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>IGE Inner City</td>
<td>2.74</td>
<td>3.54</td>
<td>3.48</td>
<td>4.16</td>
</tr>
<tr>
<td>Non-IGE Inner City</td>
<td>3.65</td>
<td>4.50</td>
<td>4.03</td>
<td>4.99</td>
</tr>
<tr>
<td>IGE Outer City</td>
<td>4.75</td>
<td>5.50</td>
<td>4.97</td>
<td>7.57</td>
</tr>
<tr>
<td>Non-IGE Outer City</td>
<td>4.53</td>
<td>5.37</td>
<td>4.49</td>
<td>5.92</td>
</tr>
</tbody>
</table>
(scores in parenthesis in Table 3) was very negligible with the greatest difference being only a little more than one-half of a school month.

A comparison of the test results from inner city schools to those from outer city schools revealed that there was very little difference in the vocabulary gains made by the pupils in these two groups. There was more of a difference between the two groups when comprehension gain and total gain scores were compared. The outer city schools' scores ranged from two to four months higher in comprehension gain and they were also higher in total gain by one-half to two months. Once more it should be emphasized that the outer city IGE third grade scores made the total average gain out of proportion. When these scores were discarded the difference between inner and outer city schools lessened considerably. Even when the scores were discarded there was still a distinct difference in gains made in comprehension scores in favor of the outer city schools by more than one month.

The CRT test scores (see Table 5) show that the pupils in the inner city schools made considerably more gains during the seven month period than did the outer city school pupils. However, it should be noted that the post-test scores were all very similar among the inner and outer city schools. When these post-test
TABLE 5
CRITERION REFERENCED READING TEST SCORES
FOR FIRST GRADE PUPILS

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Pre-Test</th>
<th>Post-Test</th>
<th>Percent Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGE Inner City</td>
<td>46.25</td>
<td>95.75</td>
<td>49.50</td>
</tr>
<tr>
<td>Non-IGE Inner City</td>
<td>37.25</td>
<td>93.00</td>
<td>55.75</td>
</tr>
<tr>
<td>IGE Outer City</td>
<td>71.50</td>
<td>98.50</td>
<td>17.00</td>
</tr>
<tr>
<td>Non-IGE Outer City</td>
<td>64.75</td>
<td>86.75</td>
<td>22.00</td>
</tr>
</tbody>
</table>

The scores in this table are average percent of correct responses.
scores are averaged for all of the inner city and outer city schools there is only a slight difference between them. This difference should not be considered significant when only eighty scores from four different schools were utilized in the comparison.

In concluding this chapter, it can be reported that there was very little difference in the gains made on the CAT among pupils of the IGE schools as compared to those from non-IGE schools. The basic reading program also did not appear to make much of a difference. Almost all gains were higher than was expected for the seven month instructional period of this study, which speaks very highly of all instructional methods and materials used in the Benton Harbor schools.

Tables 1, 2, 4 and 5 illustrate that the average scores of pupils in the outer city schools on every pre-test and post-test started and finished at higher grade equivalents than did the scores of pupils from the inner city schools. Even though the gains made by these two groups were similar, there definitely was a difference between inner city and outer city pupils which did not manifest itself when only gain scores were studied.
Individually Guided Education is a relatively new instructional system having its origin in 1964 at the University of Wisconsin Research and Development Center for Cognitive Learning. Initially, IGE was locally centered around Madison, Wisconsin, but in the past four or five years it has expanded to over one-third of the states. It is believed by this project developer that this expansion is a result of the continued efforts of the staff at the R & D Center and also because IGE emphasizes the individualization of instruction which appears to be the popular trend in education today.

Very little literature could be located which had been written during the first four years of IGE. The majority of the literature reported in this project had been written during the most recent four years and quite frequently pertained to IGE programs which had been in operation for only one or two years.

The research of Nelson and Lorton reported in Chapter II shows convincingly that the attitudes and opinions of teachers, pupils, and parents are very favorable to the multiunit system. Many educational innovations receive widespread support during their first few years.
because the people involved are enthusiastic about the new approach. A follow-up study after the newness wears off should be valuable in determining whether the people involved maintain their enthusiasm toward IGE.

Positive attitudes and opinions are important, but the primary objective in education is the acquisition of knowledge. A review of the research literature did not reveal any notable academic differences favoring IGE or non-IGE methods. The research of Benton Harbor's IGE programs also revealed no major differences.

Some instructional time is lost when innovative programs are initiated because of the study and transition time that is necessary to change to a new system. Benton Harbor's IGE programs may be classified as being in the developmental stages and a measurement of IGE should be conducted after this system has had the program in full operation for at least one complete school year.

It is important to note that the CAT and CRT scores of Benton Harbor's pupils did not indicate IGE as being a better system of instruction than their non-IGE systems. But, it is equally important to note that the pupils did not fall behind in their achievement despite the transition time from the traditionally-oriented to the IGE system.

In conclusion it may be stated that the opinions
and attitudes of teachers, pupils, and parents toward the multiunit school as reported in Chapter II, were very positive and further research is needed to determine whether these attitudes and opinions persist. Longitudinal research is also recommended to compare the academic achievement of IGE to non-IGE-taught pupils, because the research that has been conducted during the first year or two of IGE programs does not indicate either favorable or unfavorable differences.
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C. PERIODICALS


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APPENDICES

A. Letter of Transmittal
B. IGE Professional Staff Survey
C. Letter to Teachers
D. IGE Pupil Survey
Two and one-half years ago Individualized Guided Education (IGE) was introduced in several of the elementary schools in Benton Harbor. As one of my requirements for an Educational Specialist degree, I have elected to conduct a research study of these IGE programs with the authorization and supervision of and Mr. John Watson.

The study will include an analysis of California Achievement Test and Criterion Referenced Test results at four different grade levels. Pupil achievement is important, but so also is the attitude of the students and teachers who participate in innovative programs such as IGE. The sample questionnaires enclosed have been approved by and Mr. John Watson, and it would be greatly appreciated if I could have these distributed and explained to the staff in your school.

Both questionnaires have been designed so that they take less than ten minutes to complete. The teacher questionnaire should be completed by all or most of your classroom teachers. The student questionnaire needs to be completed by only two or three upper elementary classes in your school. You will note that the surveys do not include space for identifying individual teachers or students. Names are not necessary and everyone can remain completely anonymous.

Additional questionnaires will be distributed and explained at one of your SPC meetings which I plan to attend to answer any questions you might have about the study or questionnaires.
In appreciation for your assistance, I will supply each participating school with a complete copy of the report at the conclusion of the study. Thank you for your cooperation and assistance.

Sincerely,

Leslie C. Collins
Appendix B
IGE Professional Staff Survey

The questions below have been designed to assist in the evaluation of Benton Harbor's IGE program. Teachers from IGE and non-IGE schools have been requested to answer the questions. Teachers not teaching in an IGE school should answer only the questions in Part I and IGE teachers should answer only those questions in Part II.

No one in your school will see your survey, so please answer the questions as honestly as you can. To remain anonymous, return the survey to your school office in the envelope which has been provided and do not sign your name.

At the completion of this project a copy of the complete report of Benton Harbor's IGE will be issued to all schools participating in this study.

Part I

Part I is to be completed only by non-IGE teachers.

1. Name of your school ____________________________

2. Have you taught in Benton Harbor more than three years?
   Yes    No

3. Have you ever taught IGE?    Yes    No

4. Do any of your close friends teach in an IGE school?
   Yes    No

5. Where have you received most of your information about the IGE programs in Benton Harbor?
   ____ Teachers in your building
   ____ Teachers in IGE schools
   ____ Administration
   ____ Parents
___ Others (please specify).

6. Have you ever visited an IGE school in session?
   Yes   No

7. With the information that you now have, would you like to teach in an IGE school? Yes  No
   Why or why not?

8. If IGE schools are more successful than non-IGE schools, should all of Benton Harbor's schools use IGE? Yes  No

9. Would you like more information about IGE?
   Yes   No

Part II

1. Name of your school ____________________________

2. How long have you taught IGE? __________________

3. Have you ever taught in a non-IGE school? Yes  No

4. Was your opinion of IGE requested prior to the beginning of IGE in your school? Yes  No

5. Does IGE take MORE, LESS, or the SAME amount of teacher preparation time as does non-IGE? (Circle one)

6. Do you like IGE MORE, LESS, or the SAME as your non-IGE experiences? (circle one)

7. Do you believe that IGE provides a better education for boys and girls? Yes  No

8. In your opinion, is IGE here to stay or is it an experiment that you think will be discontinued in the near future?
   ____ Here to stay
   ____ Will be discontinued in the near future
   ____ Undecided
9. Do children seem to have a better attitude in IGE schools than they do in non-IGE schools? Yes No

10. Do you think children learn MORE, LESS, or the SAME in IGE schools than non-IGE schools? (circle one)

11. If the IGE schools are more successful than non-IGE schools, should all of Benton Harbor's schools use IGE? Yes No
Appendix C

Dear ______________

Thank you for permitting this IGE Pupil Survey to be administered to the pupils in your class. It should take only a few minutes of class time and requires only that you read the survey as the pupils complete it. Feel free to answer any questions the children might have, or explain any statements which are not understood.

When completed please place the surveys in the envelope provided and return it to your school office.

At the completion of this study, a copy of the entire report of Benton Harbor's IGE will be issued to all participating schools. Thank you for your assistance and cooperation.

Sincerely,

Leslie C. Collins
Appendix D
IGE Pupil Survey

This is a part of a project being done at several of the elementary schools in Benton Harbor. You are not to write your name on this paper and no one at your school will be looking at your answers, so please answer the questions as honestly as you can.

Directions: This is not a test. It is a list of questions about you and your school. Read and answer each question silently as your teacher reads aloud.

How old are you? _____

Did you attend this school your first or second year of school? Yes No (circle one)

Check one of the following:

_____ I like having more than one teacher.

_____ I would prefer to have the same teacher all day.

On the questions below put a capital A in front of the statement if you agree. If you disagree put a capital D in front of the statement. You will probably find that you agree with some of them and disagree with others. If you are not sure, just leave it blank.

_____ 1. This school has a lot of materials and equipment to help me learn.

_____ 2. I look forward to Friday afternoons because I won't have to go to school for two days.

_____ 3. I would rather go to this school than most.

_____ 4. This school has helped me develop hobbies, skills, and interest I did not have before.

_____ 5. Often I am afraid that I will do something wrong at school.

_____ 6. We work too much on reading and math at this school and there is not enough opportunity for pupils to develop their own interests.
7. I would not change a single thing about my school, even if I could.

8. Our homework assignments are usually fair and reasonable.

9. If it were possible, I would rather go to another school.

10. I am very proud of my school.

11. I get scolded a lot at school.

12. Sometimes the assignments we are given are not very clear.

13. I am lucky that I get to attend this particular school.

14. My teachers use a lot of books, references, and other extra materials to help me learn.

15. There is a lot of wasted time at this school.

16. The textbooks at this school are pretty dull and uninteresting.

17. Each morning I look forward to coming to school.

18. Our library and media center are well stocked with good books and equipment.

19. The school work is too hard at my school.

20. Many of my friends at this school would rather go to another school.