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# Classroom Utilization of the Results of the Michigan Educational Assessment Program in the Breitung Township Schools.

Robert J. St. Louis  
*Northern Michigan University*

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CLASSROOM UTILIZATION OF THE RESULTS  
OF THE MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM  
IN THE BRISTUNG TOWNSHIP SCHOOLS

A Field Project Offered in Fulfillment  
of the Requirements of the Course  
Specialist Field Study  
School of Education.  
600

by

Robert J. St. Louis

Northern Michigan University  
Marquette, Michigan

November, 1975

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CLASSROOM UTILIZATION OF THE RESULTS  
OF THE MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM  
IN THE BREITUNG TOWNSHIP SCHOOLS

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## FOREWARD

The Michigan State Board of Education adopted a six-step educational accountability model as a guide for improving Michigan education. The six steps listed were: identification of common goals, development of performance objectives, assessment of educational needs, analysis of delivery systems, evaluation and testing of those systems, and recommendations for educational improvement. The third step was addressed in this paper - the assessment of educational needs.

The three major objectives of the Michigan Educational Assessment Program have been stated many times: (1) to provide the State Board of Education, the Executive Office, the Legislature, and citizens with data describing the educational attainment of basic skills and other relevant descriptive data about each of Michigan's schools and school districts; (2) to provide local educators with specific information about the educational attainment of basic skills of students and of other relevant descriptive data for individual schools and school districts; and (3) to provide information regarding the progress of the Michigan educational system as a whole and the progress of each school district and school over a period of years to the State Board of Education, the Executive Office, the Legislature, and citizens.

Since January, 1970, the Michigan Department of Education staff had collected, analyzed and disseminated information on district and school resources, student background, school and student academic performance, and school and district size. Constant revision of the program over the past five years helped to provide accurate and timely data to state and local educators and citizens to help improve educational decision making.

Knowledge of detailed information on student achievement and considerable involvement of the classroom teacher has aided the process of curriculum improvement and education throughout the state. MEAP objective-referenced test results have provided detailed analyses of the performance of each student on each test question and which objective the pupil had attained. An overall picture of classroom, building, and district results was also made available and specific areas of need have been identified. The above information combined with state averages provided local educators with a powerful tool for understanding their district better.

While there is much value derived from Michigan Assessment, judgments regarding use and interpretation of the results have had to be made and no doubt have varied.

If every performance objective for state assessment was truly a minimum objective, if each local educational district did include all of the objectives in its instructional program prior to testing, if each test question was valid for the objective measured, if each task question was easy enough to be answered correctly by any student who has mastered the objective, and if almost all Michigan students at the beginning grade four (and seven) do have the developed ability to attain each objective, then interpretation would be a simple task. Obviously these are not the facts.

Thoughtful analyses can be very rewarding but shallow interpretations must be avoided.

## MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM - CONCERNS, NEEDS, AND VALUES

Michigan educational assessment has contributed to decision making by providing information about the outcomes of education. It has been a most valuable tool for accountability but is only one tool of many.

One of the areas of greatest concern to educators in regard to state assessment has been the release of comparative school district norms. It has been of much more benefit to encourage a critical analysis of what has happened in one school district instead of making school district comparisons. Correct, meaningful, and useful interpretation of the results of the Michigan Educational Assessment Program has helped determine the degree of a school's success. Change in education must be based upon knowledge of the outcomes of our present system. One vehicle for gathering information and translating information into action has been Michigan assessment. The large expenditures of time and money for assessment should have resulted in positive accomplishments in education or the entire program must be questioned.

Educators in Michigan have differed on views and attitudes concerning the Michigan Educational Assessment Program. There are many in the profession who have feared assessment as a means of evaluating staff. If teachers, administrators, parents, and local boards of education have viewed the program as "laying the blame where it belongs", the real value has been lost. All personnel must have been made aware that the program has not become a glorified evaluation of their teaching.

Assessment has been included as a part of the Michigan Accountability Model. There are some who have agreed with Leon H. Lessinger, former associate commissioner for elementary and secondary education in the United States Office of Education, who has said: "The comittment to accounta-

bility is a powerful catalyst for reform and renewal of the school system, because accountability requires fundamental changes." Two of those fundamental changes indicated by Lessinger are that the "emphasis will shift from teaching to learning and that quality will be less a function of input and more a function of output or results - observable changes in the learner's performance." 28

The attempts to measure teacher competence by the amount of gain in higher level objectives has been exceedingly difficult and probably impossible in many cases. The teacher appears to be more fairly evaluated if the judgment was made on what he does, rather than on the outcome of what he does since he had control over the first and not nearly so much so in the second. 31

When teachers and administrators have discovered that Michigan assessment was one portion of a systematic approach for educational planning to improve the school system, they have been relieved because they have realized this was a method to improve education that they have employed most of their careers. Good planning in education has required effort and use of the expertise of the teacher who has faced temporary failure and frustration in order to achieve success over a period of time.

An educational needs assessment has been essential for good planning. Educators have benefited because of improved efficiency. The data obtained has been used as a basis for determining the strengths and weaknesses of the curriculum as well as diagnosing individual pupil deficiencies and knowledge. The sensible management of a system of individualized instruction required knowledge of each pupil's performance with regard to the objectives of the system. In addition

state officials have determined which performance objectives have given students the most difficulty and assist local districts to improve problem areas of curriculum. Students have benefited because teachers were able to provide more individualized instruction. Parents have benefited because of closer involvement in education and their child's progress. Assessment results have served as an excellent basis for parent-teacher conferences since parents usually are interested in the child's attainment of the basic skills of mathematics and reading, particularly in comparison with a statewide average.

Teachers and administrators in the past have not fully utilized the results of the assessment program.

We would not think highly of the doctor who administered tests to the patient, recorded the results in the patient's file and did nothing more. Yet this kind of procedure has been an all too familiar routine in education. This has not been due to a lack of concern of teachers. More than likely they have been trained to view tests as judgments rather than as diagnostic tools.

Just as doctors use diagnostic tests, teachers have had assessment tests to help bring their students to the "good health" of scholastic achievement. If teachers changed from a judgmental use of the tests to one of diagnosis and classroom therapy, they would have done something all teachers strive for - helped their students succeed.

Lack of available time to explain, discuss, and interpret the data resulting from the assessment tests was another of the major reasons for the incomplete use of all of the available information. In providing each teacher and administrator with a handbook that can be used throughout the year as a guide, either for individual or committee use, it has

been anticipated that greater use will have been made of the wealth of information provided in the Michigan Education Assessment Program.

The format of the handbook provided a teacher, or group of teachers of the Breitung Township Schools, with a procedure to interpret the results to the best advantage within the limitations placed on individuals and/or the school district. No argument was made with the position that there is no substitute for a face-to-face discussion between the assessment coordinator and staff members concerning the use and interpretation of assessment results. However, with the limitations of time, the district assessment coordinator and/or building principal must have had available an alternate approach which was to provide the classroom teacher with a written procedure to follow for the maximum use of the results. When a teacher has had assessment information at his disposal, intelligent decisions may be made by staff to improve the quality of education in the district.

The value of a handbook for teachers to utilize assessment results more readily was given impetus by a research study conducted to determine the uses teachers made of the 1974-75 Michigan Educational Assessment Program test results.<sup>42</sup> The major recommendations from this study related to the dissemination process of the test results at the state, district and school levels. The results indicated that there was too long a time span between test administration and receipt of results for a large number of teachers. Of equal significance was the finding that large groups of teachers had not received all of the assessment reports intended for their use. To have valuable information compiled, scored, and then filed was a

waste. The classroom teacher must have all of the results for an ongoing curriculum evaluation. A large percentage of teachers surveyed had viewed the information received from the assessment test results as worthwhile.

Many groups have studied the Michigan Assessment tests in the light of suitability, reliability, validity, and other qualities. This paper has not attempted to agree or disagree with their views. Because a great deal of money has been spent to provide the results, because it appears that the Michigan Education Assessment Program will be with us for some years, and because there is much valuable information to be gleaned from the program, many educators felt reporting and interpretation of results was not enough. Improvements based upon the assessment results were necessary.

Because of a concern that assessment results did not have a utilitarian relation to the performance objectives of Michigan, a decision was made to change from a norm-referenced approach to an objective-referenced approach and prepare the test items in Michigan beginning with the 1973-74 assessment.

Norm-referenced evaluation generally yields to the criterion-referenced movement, not on the basis of intrinsic superiority, but because of the former's relative failure to respond to the range of evaluation needs in education.

Criterion-referenced tests were designed to measure individual progress and identify needed additional experiences to assure mastery of instructional objectives.

Studies by Elsner <sup>15</sup>, Shumsky <sup>4</sup>, and Dziuban and Vickery <sup>14</sup>, among others pointed out that most teachers viewed criterion-referenced tests

useful in (1) identifying areas of the curriculum needing study, (2) identifying special pupil's abilities, (3) providing prescriptions for independent pupil study, (4) identifying objectives mastered by individual pupils, and (5) focusing planning for small groups or individuals.

Opinions of teachers who attended pre and post test workshops on criterion-referenced tests had been surveyed and were somewhat more favorable toward the assessment program using criterion-referenced tests. <sup>15</sup> This view was important since most teachers have had very little experience with this type of test and perhaps felt only basically prepared to use the test results.

Obvious cautions to be aware of have been pointed out. Those students taught only through a set of rigidly applied performance objectives have been denied the broad experience of varied learning styles and creative teaching techniques. <sup>6</sup> Cognitive processes were measurable but higher level thought processes were very difficult to measure so all learning cannot be translated into criterion-referenced items.

Some educators have rightfully feared misuse of the results, however, failure to use the data provided has been a waste. Good teachers have always had an interest in appropriate and legitimate help to aid them to evaluate what they were teaching. Since the Michigan Education Assessment Program is indeed a reality, all educators should have found the good points of the program and utilized them to advantage. Better educational decisions have been made by informed educators.

Although the assessment tests involve only about 15% of the minimal performance objectives outlined by the State Department of Education, the results have provided Michigan School districts with much information that



was previously not available. Careful interpretations of the results have been very helpful for local curriculum evaluation and identification of students with special needs in the areas assessed.

The ultimate goal of the MEAP has been to help assure that all Michigan pupils will attain the basic skills. 42

## PURPOSE

The purposes of developing the handbook were three-fold. First, to provide the appropriate teachers and administrators of Breitung Township Schools with prompt, accurate, useful data derived from the Michigan Assessment Tests. Second, to systematize a method of curriculum evaluation and renewal in the assessment areas of mathematics and reading in relation to the stated minimum objectives to improve the curriculum in the school setting. Third, to alleviate some of the fears of the faculty and make them aware that assessment was not parallel in meaning to teacher evaluation. The major purpose of the assessment program was to provide information to citizens and educators with which they have been able to make educational decisions.

As a result of writing this handbook, teachers in the Breitung Township Schools, particularly in grades two, three, four, five, six, and seven, have had a guide to systematically diagnose possible reading and mathematics curriculum problems in the district and in the work of individual students in relation to the minimum objectives as set by Michigan. Teachers have had at their fingertips graphs, charts, and information necessary for curriculum evaluation and knowledge of the Michigan Education Assessment Program goals and objectives. Parents who wanted to participate in their child's learning will have been aided and students will have been better equipped to understand their own weaknesses. 44

Teachers should have understood the testing program objectives, procedures, and uses that would be made of the results. They should also have received a report and an adequate interpretation of the results. This involvement would have led to an improvement in staff attitudes toward testing. 10 A study by Dailey found that teachers and counselors developed more positive

attitudes toward standardized testing when they considered themselves well informed. <sup>1</sup>

In a recent survey of assessment coordinators, the feedback that was received by the Department of Education personnel was that local educators had become more positive toward the assessment programs because of the change to objective-referenced tests. The most often mentioned informational need from the State Department was in the area of interpretation.

The problems of giving meaning to the findings of assessment and, indeed, clarifying ideas about what was important to assess seemed clearer when the state attempted to define satisfactory student performance. Critics have made us aware of pitfalls of standardized tests - inappropriateness of typical tests for the culturally deprived, different limitations of test coverage, practice of categorizing instead of understanding students as a result of tests, and the lack of protection of students' privacy.

When Michigan used normative-referenced tests and published results and comparisons, much value was lost by inappropriate interpretations. With criterion-referenced assessment, it behooves all educators to have done the best job of interpretation possible so students would have benefited from the wealth of information provided.

State assessment results in Michigan have provided each school district within this state information that was previously not available. The results were most appropriately useful to plan instruction or reinstruction of the students tested, to identify weaknesses in the curriculum of prior grades, or to indicate needs for professional development activities. Cautious, judicious interpretations of these results have

been very helpful for curriculum evaluation at the local level and have been very helpful for identifying individual students with particular needs for assistance in the areas assessed.<sup>47</sup> The value of assessment has been recognized by many educators in Michigan. A 1975-76 bulletin of the University of Michigan School Testing Service indicated that "state assessment achievement may be considered supplementary to or replacement for conventional achievement batteries".

Educational assessment has attempted to improve educational decision making by providing information about the outcomes of education. Unfortunately there are many who believed that assessment has been equated to accountability. While testing was a part of assessment, and assessment was a part of accountability, we cannot assume the reverse sequence to be valid. We cannot assume that the means for accountability was simply assessment and that assessment was simply testing.

Accountability has been defined as a process for determining whether the program of a school, district, or state is producing the student achievement expected for the objectives of the program.<sup>37</sup> This process considered the performance of a group but sought areas where students have or have not achieved and related them to strengths and weaknesses of a program. Assessment is necessary: the objectives identified, the achievement levels for those objectives determined through assessment, and the results reported.

A related program, the recent retest of students on the national level in science by the National Assessment of Educational Progress, showed that science knowledge is declining in American schools over the past four years. Just as science education received much public support in the last two decades, one thing is certain: if the second NAEP assessments in the other nine areas of learning show the same downward

trends as science, public cries for accountability will be louder.

The accountability movement has been sweeping the country. Assessment provided an excellent data-gathering model which might be applied in a positive way for accountability purposes to local school districts.

DEVELOPING THE SCATTERGRAM:  
A COMPARISON OF THE ACHIEVEMENT - INTELLIGENCE RELATIONSHIP

RATIONALE

School achievement test users were interested in the interpretation of results in relation to expectancy. Usually the expected level of a pupil's achievement was determined by his level of intelligence. In their efforts to develop the full potential of students, schools have felt the need for some standard by which they may evaluate achievement in relation to the capacity to achieve. Is a student doing as well as can be expected for his ability? Is the school's average achievement level commensurate with the average intellectual capacity of its pupils?

Because all staff members involved in the MEAP have made judgments concerning the results, many variations were expected. Primarily the process of examining specific exercises pushed the school and the community into a hard look at what performance they considered adequate for their own students. If a school and its community has made some progress in this direction and has determined that their input was important, it is likely that the school was better able to meet the expectations of its various publics: students, staff, parents, and the community.

The Michigan Educational Assessment test, indeed, any criterion-referenced test, provided only one input into the decision-making process and all the other factors that affected the process must have been considered when we attempted to generalize reliable data to a new decision-making situation.

In the process of developing the handbook in Appendix A, many methods of reporting results to teachers were explored to express the information in an understandable, graphic format. Most educators

reacted favorably to a display of facts which gave a clear, quick overview of the results presented.

Although not used in the handbook, an interesting presentation was developed using a device called a scattergram.

"Reliability of criterion-referenced tests is very much situation specific, and hence it is recommended that information such as student ability be reported with criterion-referenced test scores." <sup>35</sup>  
The scattergram attempted to do just that.

All teachers, as essential participants in a program of pupil-personnel services, were in a strategic position to contribute toward the analysis of the individual pupils. The scattergram was a useful tool in assisting in this analysis. Plotted with scores of every student in the grade, it provided a good profile of student achievement of objectives compared to ability on a district wide basis.

A teacher also had the information to plot the scores of a single classroom using numbers corresponding to students' names and obtain some clues to the achievement, or the lack of it, for the entire class and to some extent the individual student. In keeping with the belief that one teacher or grade level was not responsible for high or low scores, no attempt has been made to group any of the students by class. An individual teacher may wish to do so as he/she sees fit.

Because reliable intelligence scores were not available for the fourth grade students, the scattergrams that follow have been graphed for seventh grade students only.

#### SCATTERGRAM DEVELOPMENT PROCEDURE AND UTILIZATION

The scattergram graphically shows the acceptable criterion attainment range for either the total district, the school, or the classroom

compared with the individual student's ability as measured by two or three valid tests. The instrument used was the Primary Mental Abilities test and was administered over the past three years. While the usefulness of I.Q. scores has been questioned by a number of educators, it was assumed that the scores were of sufficient reliability for our purpose because the focus was upon the attainment of the entire group, not on any individual.

Although the Michigan Department of Education expected all students to attain 100% of the objectives, an attainment level of 80% for students with an I.Q. of 100 or more was established. Below 100 I.Q., the expected percent of objectives attained drops on a sliding scale. This seems to have been more realistic in view of the students' varying abilities, the possibility of the inclusion of poor objectives, and the possibility of teaching the objectives at a later time following the assessment test.

The percent of objectives attained was taken from the Classroom Listing Report for each area of reading and mathematics by dividing the number of objectives attained by the total number of objectives and multiplying by 100.

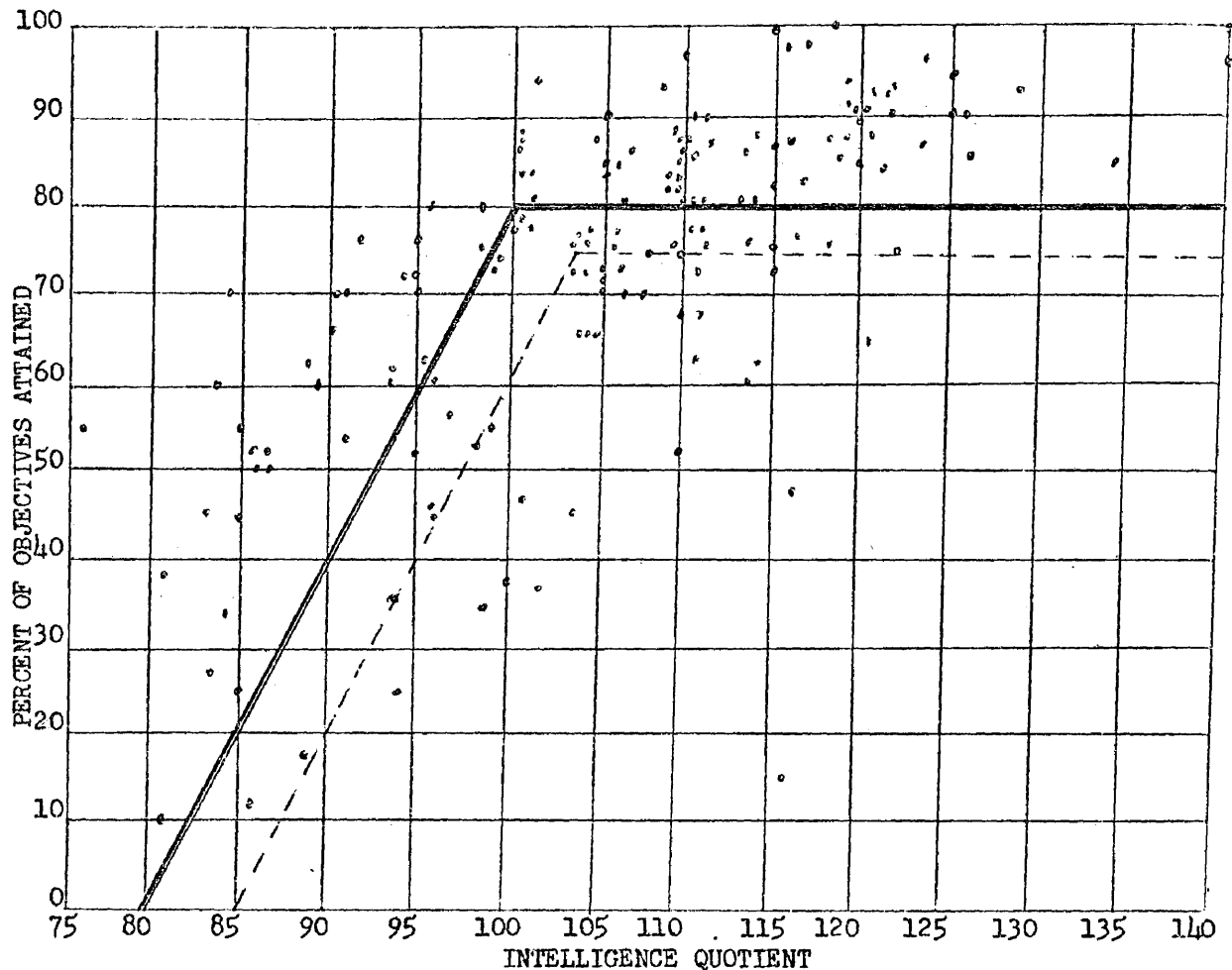
Copies of the scattergram are found on pages 16 and 17. The left hand margin of the chart is known as the attainment line and was divided and marked from 0 to 100. Each step represented 10% attainment of the objectives.

The line across the bottom of the chart is the scholastic aptitude line on which the profile for the student was found. The numbers represent abilities as reported by the results of several Primary Mental Abilities tests and are shown on the bottom of the scattergram. The



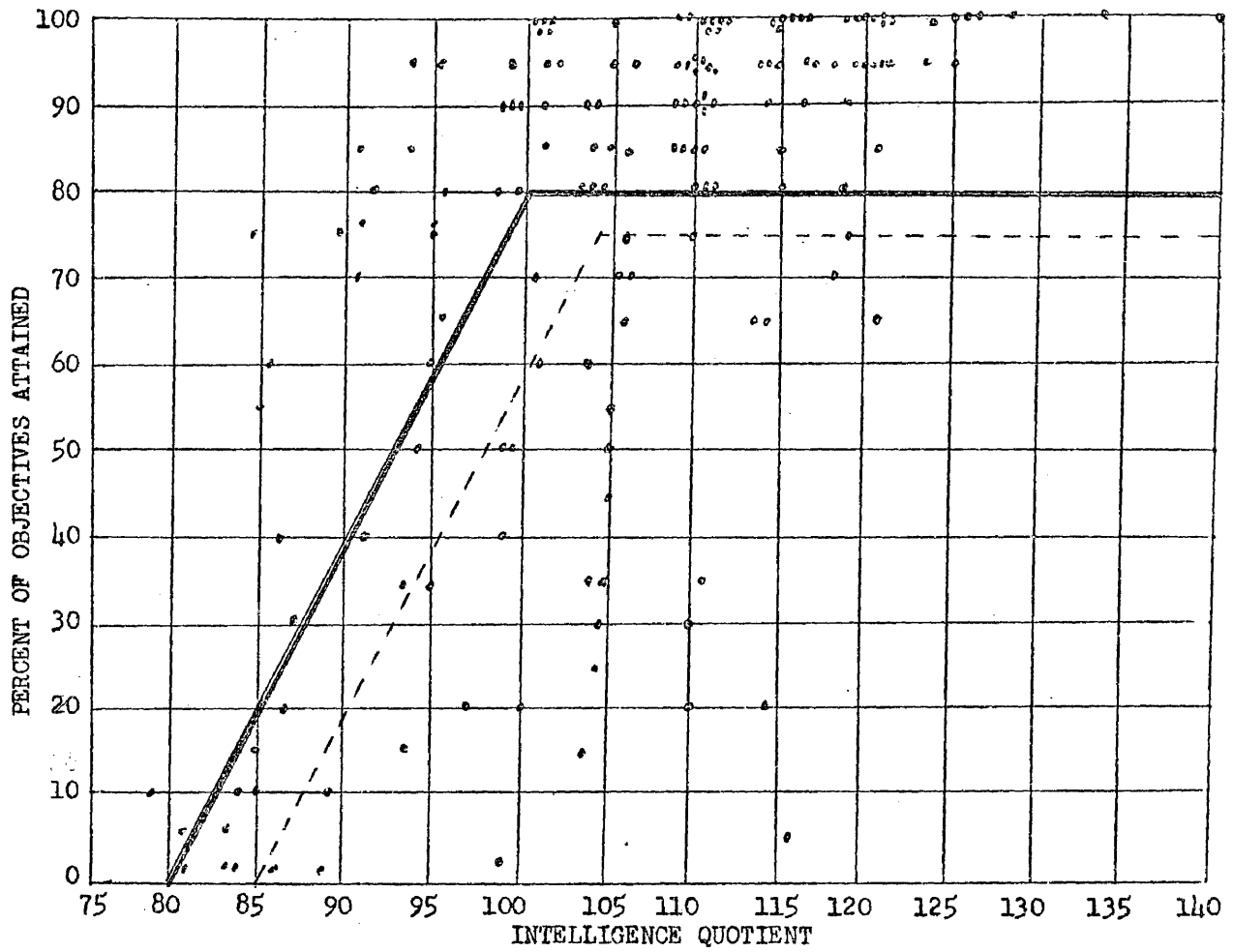
extreme left vertical line represents an I.Q. of 75, the second line is 80, the third 85, and then progressively. These values were not placed on the scattergrams in regular use. Teachers use the lane of the child's ability and hence the listing of all values is not required nor desired.

MATHEMATICS - GRADE 7



SCATTERGRAM: BREITUNG TOWNSHIP SCHOOLS, FALL 1974  
COMPARISON OF STUDENT ABILITY WITH PERCENT OF OBJECTIVES  
THEY ATTAINED- MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM.

READING - GRADE 7



SCATTERGRAM: BREITUNG TOWNSHIP SCHOOLS, FALL 1974  
COMPARISON OF STUDENT ABILITY WITH PERCENT OF OBJECTIVES  
THEY ATTAINED- MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM.

### TOTAL GRADE GRAPH

The procedure for completing the graph for all seventh grade students in the school district is as follows:

1. Determine the I.Q. score for each student by finding the mean of all I.Q. scores available for that student.
2. Find the vertical I.Q. lane of ability of the student using the mean I.Q. score.
3. In the space on the ability lane which is parallel to the attainment of the student, place a dot for every student in the grade in the district.

### CLASS GRAPH

The procedure for completing the class graph is as follows:

1. Students in the class are numbered, not necessarily in alphabetical order.
2. Find the vertical I.Q. lane of ability of the student on the graph.
3. In the space on the ability lane which is parallel to the attainment of the student, place the number of the student. This is done for every student in the class.

### INTERPRETATION

The teacher must recognize that one should not exercise a precise interpretation of the scattergram results. When a student's assessment results have been compared with what was expected from his obtained I.Q., some measurement error might be involved. Both the I.Q. and the assessment test score had their standard error of measurement and the predicted achievement level was subject to an estimation error. It follows, therefore, that differences between a student's obtained and expected scores must be sizeable and must show up in more than one sub-test area if the student's results were labeled unsatisfactory. The dotted line on the scattergram suggested the lower limit of the criterion attain-

ment range for satisfactory attainment of objectives.

There was a total of 20 objectives tested on the seventh grade reading assessment, therefore, a student could have failed to achieve four objectives and met the criterion level of 80%. In seventh grade mathematics, the student could have failed eight of the forty objectives and still met the same criterion level. A number of students failed a particular objective for varied reasons in addition to a lack of ability. Perhaps for an individual student, an objective was poorly worded. It is possible some words were unfamiliar to some students. A student's illness on a particular day could have lowered his score. The objective may have been emphasized after the assessment test was given. In view of all factors, the 80 percent achievement was selected as a legitimate standard for those with normal ability.

Only a few students tested below an intelligence quotient of 80 on the P.M.A. test. These students were not expected to achieve any of the objectives. A straight line on the scattergram, connecting the point of intersection at the 80 I.Q. line and 0 percent of objectives attained with the point of intersection at the 100 I.Q. line and 80 percent attainment, established a satisfactory/unsatisfactory attainment level for all students. Beginning at an 80 I.Q., a 20 percent increase in attainment for each increase of five points in I.Q. up to a quotient of 100 was expected.

Although the expectancy level established was an arbitrary one, it has appeared to have merit as a standard in view of the clustered scores surrounding it. The tables in appendix B and C illustrate the comparison of the expected with the actual mean scores for each ability grouping on the scattergram.

It has been emphasized that the scattergram was only one additional tool to be used to provide better education for our students. It should be used in conjunction with all other relevant information available.

In spite of the above mentioned shortcomings, helpful interpretations can and have been made from either one or all of the three mentioned types of scattergrams: for the district, the school, and the class.

#### MATHEMATICS - GRADE 7

The seventh grade mathematics scattergram showed that 100 students (61%) attained the percentage of objectives in relation to their ability. According to the standard which was established, 29 students (18%) have tentatively been designated as possible underachievers. There were 35 students (21%) who scored within the criterion attainment range.

Special concern was shown for those with average I.Q. or above but attaining less than 80% of the objectives. About 32 students were in this category in mathematics.

As pointed out in Department of Education literature, on a state-wide basis, there were more objectives which were difficult for students to attain in the area of seventh grade mathematics than in the other tests.

Based on the scattergram for seventh grade mathematics, it was apparent that a high percentage of students achieved below their ability. Even making allowances for poorly written and poorly placed objectives, students were expected to have scored above the profile line. The teacher certainly would have wanted to investigate the scores and results of the twenty six students in the 100 and above I.Q. range who achieved below the 75 percent level.

## READING - GRADE 7

Relating reading objectives attained to ability of seventh grade students, 119 students (73%) reached the level established for them while 33 students (20%) failed to do so. There were 12 students (7%) who scored within the criterion attainment range. The surprising outcome of this scattergram was the number of students who had achieved 20% or less of the objectives. Since each reading objective is 5% of the total, these students attained only four objectives or less.

Although more students scored in the higher percentiles in reading compared to mathematics, the greater number scoring in the lower percentiles (below 40%) has been of concern. What should be done with the 33 students who scored below their predicted levels in reading? What should be done about the students who could not attain even one or two of the reading objectives?

Some possible conclusions have been drawn from the seventh grade reading scattergram. Students with average or better ability scored well on the test, however, the 21 students attaining 20% or less of the objectives have been designated to deserve special attention in an attempt to determine the reason for the low achievement. Preparation of a class scattergram by teachers determined which class members are having the greatest difficulty and therefore having the need for extra help or re-education.

In general, what do seventh grade teachers now teach knowing the results? Does the entire class go back to cover the areas of deficiency?

If problem areas have been indicated, do current textbooks cover the material? If not, can supplementary or auxiliary materials be developed? Is a general file of materials available for use by each grade level

including sample workbooks, dittos, worksheets, and curriculum guides?

Whenever one systematically gathers information about educational outcomes, achievement differences for different reference groups are discovered. The results of the scattergram comparisons cannot be interpreted as research since there was no control of relevant factors. It has, however, called attention to characteristics that are allied to student achievement. Untapped outcomes of the assessment program are the related investigations of research projects and investigations designed to inquire into questions of causality that are raised by assessment results.

It was with this in mind that the scattergram idea was pursued. Inquisitive teachers with an inquiring mind have the tools in the handbook to investigate still other areas of concerns in the Michigan Educational Assessment Program.



## CONCLUSIONS

An unquestioned goal of students, parents, and educators has been a "quality education". While everyone was in favor of such and no one knew for sure what it was, educators and citizens have made decisions regarding the schools, and accurate information was the necessary basis for good decisions.

When materials have been placed in a handbook designed for a specific teacher, there was greater likelihood that the teacher will have received the data of the Michigan Assessment promptly. This satisfied the first major purpose of the handbook, namely, to provide the appropriate teachers and administrators of the Breitung Township Schools with prompt, accurate, useful data derived from the Michigan Assessment tests.

Direction toward the second purpose of systematizing a method of curriculum evaluation and renewal in the assessment areas of mathematics and reading in relation to stated minimum objectives, had been accomplished also by the publication of the handbook. Whether the teachers utilized the materials to the fullest extent and improved the curriculum and teaching of the basic objectives in Breitung Township Schools has not been proven. A substantial period of time was necessary to determine this measurement.

The third purpose, that of alleviating some of the fears of the faculty and to make them aware that assessment is not the same as teacher evaluation, has also been subjected to a longer term measurement and the results will not be available for at least another year. With continued assurance that the assessment was not an evaluation instrument linked to teacher performance, teachers will have become more trusting and confident in its use. A greater involvement and use of

the results by faculty has, to some extent, been indicative of a positive attainment of this objective.

Discussions with principals and teachers who have been involved with the assessment program indicate that they had positive feelings toward the need for the type of handbook developed. Teachers in the school system have utilized the results in varying degrees. By use of the handbook, all staff members have a guide to be followed to obtain the most value from interpreting the results.

## RECOMMENDATIONS

Teachers must immediately review each item of the assessment program for its validity in relationship to the academic needs of the students. While an attempt has been made to reduce the length of the handbook, this aspect must be monitored as the handbook is used. It has been recognized that often parents and teachers only want to know what was the expectation for their students and how well they were doing in regard to sets of expectations. Excessive educational jargon was not wanted for fear it would alienate the staff from full use of the handbook.

In contacts with other MEAP district coordinators, they reported that teachers who have used MEAP data have spread the word that this data was useful. In-service education related to the MEAP and the use of criterion-referenced test results has been planned and will be of benefit in conjunction with the use of the handbook.

Communication between teachers at different grade levels was forced by assessment to some extent, particularly by those teachers interested in using this information to improve the curriculum. The improvement of dialogue in curriculum revision committees and of parent feedback regarding the progress of students undoubtedly are important results of proper usage of data by teachers and administrators.

Just as dissemination of information to teachers was a concern and has been accomplished with the publication of the handbook, another area of interest was that of communicating with the general public. P.T.O. meetings or mothers' coffee meetings have been successful communication methods used in addition to reporting to the Board of Education. In these meetings an explanation and identification of those objectives

which we do not incorporate in our curriculum must be made. The public respects honesty in identifying those objectives omitted on purpose and those that were omitted without any forethought but will be emphasized in the curriculum in coming years.

Yet to be established, are deadlines on reporting progress to parents, students, and teachers. A high priority objective was the improvement of dialogue in curriculum revision committees and the improvement of parent feedback regarding the progress of students. It has long been recognized that an informed public has been an asset to a school district.

In regard to future assessment, the Michigan Educational Assessment program personnel have announced plans to continue with the testing of minimal objectives with no major revisions planned on the fourth and seventh grade levels. The tentative timetable for expansion of the MEAP has been included in APPENDIX H.

Michigan's assessment program did not attempt to end controversy in the schools, nor did it guarantee to provide a totally successful curriculum. It has, however, provided useful information to help improve the education of children in local schools and in the state as a whole.

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## APPENDICES

APPENDIX A

RECOMMENDED UTILIZATION OF MICHIGAN  
EDUCATIONAL ASSESSMENT PROGRAM RESULTS  
IN THE CLASSROOM, SCHOOL, AND DISTRICT.

A HANDBOOK FOR TEACHERS  
BREITUNG TOWNSHIP SCHOOLS

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To: Teachers, Administrators, and Members of the Board of Education-  
Breitung Township Schools

An attempt has been made in the development of this handbook to aid the local educator to interpret the various reports to determine individual student and classroom educational needs. It is important to remember in interpreting these results that only a certain number of the minimal performance objectives have been included. Please do not allow these minimums to become the maximum.

While much value is recognized in the Michigan Educational Assessment Test, you are alerted throughout the handbook to use caution in interpreting the results.

Note that charts and graphs are included for both fourth and seventh grade tests. Fourth grade test results should be of special interest to those involved with students in grades two, three and four. Seventh grade test results should be of special interest to those at the fifth, sixth and seventh grade level.

Each objective tested has five test items in the assessment. To attain an objective, the student must correctly answer at least four of the five questions concerned with that objective.

The various reports have been placed in the handbook in a particular order. Generally, the Individual Student Reports should be consulted after the other reports have been examined. By using the group reports first, educators in Breitung Township Schools should examine the curriculum to determine when appropriate instruction should occur and whether additional resources are needed. <sup>19</sup> The school district and state norms concerning the human and financial resources are not included here but are available from the Breitung Township assessment coordinator. Rudman and others

state that these factors have a low positive or negative relationship to output data. 36

Michigan Department of Education officials make the following assumptions in collecting assessment data: (1) that the objectives describe essential skills, (2) that the skills can and should be attained by all pupils, and (3) that the tests provide reliable and valid measures of those attainments. 42

Michigan Educational Assessment Program staff are interested in having local school personnel analyze the test data by objectives to determine the objectives which might be improved and to suggest some implications of the data for Michigan educators in relation to local curriculum teaching materials, and instructional practices. Information and material published by the Michigan Department of Education relating to the Educational Assessment Program has been extensive and well done. If every teacher was able to read and digest this material, there would be no need for this handbook. The quantity of material alone restricts some teachers in their effort to completely understand and interpret the results of the testing program.

This handbook is focused on the teaching areas of reading and mathematics. As assessment tests in other curriculum areas and/or grade levels become fully operational, new sections may be added to this handbook to aid the school staff to interpret the results in a continuing effort to improve learning. Please read and study the handbook. Your students will benefit.

Sections regarding Word Relationships and the Pupil Attitude Questionnaire are not included because the Michigan Department of Education has eliminated them from the assessment. The Word Relationships test has been eliminated because copyright problems required Breitung Township

Schools to purchase this portion of the test and it was felt that there was not sufficient value to that section to recommend it. While the idea of assessing pupil attitudes is good, it was considered by many that the Pupil Attitude Questionnaire was not a valid instrument to use and therefore has been eliminated until a more valid instrument can be found.

The purpose of objective-referenced tests in mathematics and reading was to pinpoint specific educational needs of students. It was not the purpose of the objective-referenced tests nor the educational assessment program to single out particular teachers for fault or blame, but to encourage all of those involved in education (teachers, counselors, administrators, curriculum specialists, board members, parents, students, and others) to examine the results to determine how the entire system can better meet the needs of all students. Because objectives cover a range of several grades, it is not appropriate to assume that one particular teacher is responsible for teaching those skills. This underscores the need for an examination of the assessment results by representative groups of persons concerned with education.<sup>20</sup> Teachers must be helped to understand and accept criterion-referenced testing if we are to avoid the "teach-to-the-test" approach to instruction. There has been no objection to teaching the objectives and using similar questions to evaluate the student's understanding. A teacher should not use the actual test booklet for teaching or evaluation.

A short term solution to unsatisfactory assessment results would be remediation instruction to help students attain those objectives mutually regarded as minimal.

Longer range solutions would be to (1) consider reorganizing the

curriculum as necessary to achieve the objectives, (2) analyze carefully the instructional materials and techniques used in the classroom and (3) to develop a system to continually monitor and record each student's progress toward the objectives.



MATHEMATICS: GRADE FOUR - BREITUNG TOWNSHIP SCHOOLS

Only some of the minimal mathematics performance objectives were used in the assessment test but they represent some of the more important ones for the end of the third grade. The following graph, Mathematics - Grade Four, provides a comparison of the state average for the current year with past results in grade four in Breitung Township Schools. The listing of actual objectives tested are found on pages 86 and 87 of this handbook.

Please note in particular those objectives that fall below the 80 percentile mark this year. The criterion level of 80 percent was selected because it is unrealistic to expect every student to achieve 100 percent of the objectives. In addition to varying student abilities, we must consider other possible factors such as inappropriate and/or poorly worded objectives, student illness, a later teaching of the objective, vocabulary problems, and other similar possibilities that might affect the attainment of objectives.

The questions below should be asked for each of the graphs that follow.

- A - What objectives were attained by less than 80%?
- B - Are these objectives taught prior to the test? If not, why not?
- C - Is each test question concerning the objective a valid one, i.e., does it test what it is supposed to?
- D - Should we be satisfied with our percentage of attainment for each objective?
- E - If we should not be satisfied with the attainment, should we re-teach the objective? Does individual instruction appear necessary?
- F - Is there a need for more supplementary material for this objective?

COMPARISON OF 1973, 1974, AND STATE AVERAGE  
 MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM  
 BREITUNG TOWNSHIP SCHOOLS

(333) 1973 rate  
 (444) 1974 rate  
 (sss) state average (1974)

AVERAGE ATTAINMENT

GRADE 4 MATHEMATICS OBJECTIVE	0%	20%	40%	60%	80%	100%
1. Indicate objects that are the same size.	33333333	33333333	33333333	33333333	33333333	33333333
2. Indicate similar geometric shapes.....	33333333	33333333	33333333	33333333	33333333	33333333
3. Indicate objects arranged full to empty.	33333333	33333333	33333333	33333333	33333333	33333333
4. Indicate longest and shortest objects...	33333333	33333333	33333333	33333333	33333333	33333333
5. Indicate first and last.....	33333333	33333333	33333333	33333333	33333333	33333333
6. Choose equivalent sets.....	33333333	33333333	33333333	33333333	33333333	33333333
7. Choose sets having fewer numbers.....	33333333	33333333	33333333	33333333	33333333	33333333
8. Indicate appropriate numeral for point . on a line	33333333	33333333	33333333	33333333	33333333	33333333
9. Choose greatest and least number.....	33333333	33333333	33333333	33333333	33333333	33333333
10. Choose number between two numbers.....	33333333	33333333	33333333	33333333	33333333	33333333
11. Choose number before or after a number..	33333333	33333333	33333333	33333333	33333333	33333333
12. Identify a numeral less than 100.....	33333333	33333333	33333333	33333333	33333333	33333333
13. Indicate number before or after number . within a decade	33333333	33333333	33333333	33333333	33333333	33333333
14. Indicate which of 2 numbers is greater . or less	33333333	33333333	33333333	33333333	33333333	33333333
15. Indicate the values of a set of dimes .. and pennies	33333333	33333333	33333333	33333333	33333333	33333333
16. Choose list of numbers in ascending .... order	33333333	33333333	33333333	33333333	33333333	33333333
17. Indicate greater or less/scrambled .... positions	33333333	33333333	33333333	33333333	33333333	33333333

(333) 1973 rate  
 (444) 1974 rate  
 (sss) state average(1974)

AVERAGE ATTAINMENT

GRADE 4 MATHEMATICS OBJECTIVE	0%	20%	40%	60%	80%	100%
18. Indicate next number in a sequence.....	33333333	33333333	33333333	33333333	33333333	33333333
19. Indicate a number that is a multiple of 2 ..	33333333	33333333	33333333	33333333	33333333	33333333
20. Select set with twice as many members as another ..	33333333	33333333	33333333	33333333	33333333	33333333
21. Add two-digit and one-digit numbers with no carrying	33333333	33333333	33333333	33333333	33333333	33333333
22. Number sentences/subtraction.....	33333333	33333333	33333333	33333333	33333333	33333333
23. Number sentences/addition or subtraction identify operation	33333333	33333333	33333333	33333333	33333333	33333333
24. Numerical set comparisons.....	33333333	33333333	33333333	33333333	33333333	33333333
25. Subtract one-digit from two-digit number no borrowing	33333333	33333333	33333333	33333333	33333333	33333333
26. Subtract two-digit from two-digit number no borrowing	33333333	33333333	33333333	33333333	33333333	33333333
27. Telling time.....	33333333	33333333	33333333	33333333	33333333	33333333
28. Identify greatest or least amounts of money ...	33333333	33333333	33333333	33333333	33333333	33333333
29. Identify temperatures.....	33333333	33333333	33333333	33333333	33333333	33333333
30. Identify geometric shapes.....	33333333	33333333	33333333	33333333	33333333	33333333

MATHEMATICS: GRADE FOUR - WESTWOOD SCHOOL

This graph compares Westwood School results of the past two years with the state average for the current year (1974). Objectives have been itemized and may be found on pages 86 and 87.

Westwood School staff will want to note in particular those objectives that fall below the 80 percentile mark this year.





MATHEMATICS: GRADE FOUR - ROOSEVELT SCHOOL

This graph compares Roosevelt School results of the past two years with the state average for the current year (1974). Objectives have been itemized and may be found on pages 86 and 87.

Roosevelt School staff will want to note in particular those objectives that fall below the 80 percentile mark this year.







MATHEMATICS: GRADE SEVEN - BREITUNG TOWNSHIP SCHOOLS

Only some of the minimal mathematics performance objectives were used in the assessment test but represent some of the more important ones for the end of the sixth grade. The objectives are itemized on pages 88 to 90.

The following graph: Mathematics - Grade Seven, provides a comparison of the state average for the current year with past results in grade seven in the Breitung Township Schools.

Please note in particular those objectives that fall below the 80 percentile mark this year.

The questions below should be asked for each of the graphs that follow.

- A - What objectives were attained by less than 80%?
- B - Are these objectives taught prior to the test? If not, why not?
- C - Is each test question concerning the objective a valid one, i.e., does it test what it is supposed to?
- D - Should we be satisfied with our percentage of attainment for each objective?
- E - If we should not be satisfied with the attainment, should we re-teach the objective? Does individual instruction appear necessary?
- F - Is there a need for more supplementary material to teach this objective?



BREITUNG TOWNSHIP SCHOOLS

(333) 1973 rate  
 (444) 1974 rate  
 (sss) state average (1974)

GRADE 7 MATHEMATICS OBJECTIVE	AVERAGE ATTAINMENT					
	0%	20%	40%	60%	80%	100%
21. Multiply 2 unit fractions.....	33333333	33333333	33333333	33333333	33333333	33333333
22. Identify illustrated decimal fraction....	33333333	33333333	33333333	33333333	33333333	33333333
23. Name place values of decimal fraction....	33333333	33333333	33333333	33333333	33333333	33333333
24. Addition/subtraction decimal problems .. tenths	33333333	33333333	33333333	33333333	33333333	33333333
25. Addition/subtraction decimal problems .. tenths and hundredths	33333333	33333333	33333333	33333333	33333333	33333333
26. Addition/subtraction decimal problems .. vertical	33333333	33333333	33333333	33333333	33333333	33333333
27. Identify pair of sets/equivalent ratio ..	33333333	33333333	33333333	33333333	33333333	33333333
28. Estimate area of a polygon.....	33333333	33333333	33333333	33333333	33333333	33333333
29. Name number of units in a rectangular .. solid	33333333	33333333	33333333	33333333	33333333	33333333
30. Tell time.....	33333333	33333333	33333333	33333333	33333333	33333333
31. Identify A.M. and P.M. ....	33333333	33333333	33333333	33333333	33333333	33333333
32. Add/subtract money.....	33333333	33333333	33333333	33333333	33333333	33333333
33. Solve problem with money values.....	33333333	33333333	33333333	33333333	33333333	33333333
34. Read temperatures.....	33333333	33333333	33333333	33333333	33333333	33333333
35. Name quadrilaterals.....	33333333	33333333	33333333	33333333	33333333	33333333
36. Identify surfaces representing plane or .. part of a plane	33333333	33333333	33333333	33333333	33333333	33333333
37. Statement of equality/supply missing .. number	33333333	33333333	33333333	33333333	33333333	33333333
38. Supply symbol of equality/inequality ..	33333333	33333333	33333333	33333333	33333333	33333333
39. Complete equation with one/zero.....	33333333	33333333	33333333	33333333	33333333	33333333
40. Distributive property/supply missing .. value	33333333	33333333	33333333	33333333	33333333	33333333

READING: GRADE FOUR - BREITUNG TOWNSHIP SCHOOLS

The fourth grade reading test objectives emphasize what most reading specialists would consider to be comprehension. The list of minimal objectives used in the test are found on pages 82 and 83.

The following graph, Reading - Grade Four, provides a comparison of the state average for the current year with past results in grade four in Breitung Township Schools.

Please note in particular those objectives that fall below the 80 percentile mark this year.

Causes of reading problems must be attended to instead of the symptoms and social handicaps must be overcome before reading skills can be equalized. However, there are things that can be done by a school staff.

- A - Each classroom teacher should design a reading program appropriate to his/her class.
- B - A campaign promoting the teaching of reading should be carried out in the communications network found in every school system - instructional bulletins, posters, slogans, newspapers, and similar devices.
- C - "Teachers helping teachers" program is vital since it deals with specifics of the local problem.
- D - Teachers must always be aware of the abilities of the students. Goals that are set by the teacher must be attainable by the student or frustration results.
- E - A diagnosis of the instructional program will improve the quality of instruction. Botel and Granowsky<sup>7</sup> state "The basic prescription of a quantity of materials, activities and settings for the reading program can well bring the cure for many learning failures".

The above are some ideas and suggestions for improving student achievement of minimal reading objectives. The classroom teacher is the key to curriculum improvement. Without the teacher's interest

and concern, little can be accomplished. While improvement is constantly sought, we cannot forget that it comes slowly. All teachers benefit by the sharing of materials and ideas. These can be placed on file in a convenient location where they can be used by all who are interested in them.

COMPARISON OF 1973, 1974, AND STATE AVERAGE  
 MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM  
 BREITUNG TOWNSHIP SCHOOLS

(333) 1973 rate  
 (444) 1974 rate  
 (sss) state average (1974)

GRADE 4 READING OBJECTIVES	AVERAGE ATTAINMENT					
	0%	20%	40%	60%	80%	100%
1. Match words with definitions .....	33333333	33333333	33333333	33333333	33333333	33333333
2. Indicate phrases with same meanings ....	33333333	33333333	33333333	33333333	33333333	33333333
3. Choose word appropriate to blank .....	33333333	33333333	33333333	33333333	33333333	33333333
4. Identify method of arranging data .....	33333333	33333333	33333333	33333333	33333333	33333333
5. Alphabetize words through first three ..	33333333	33333333	33333333	33333333	33333333	33333333
6. Indicate factual selections .....	33333333	33333333	33333333	33333333	33333333	33333333
7. Indicate fictional selections .....	33333333	33333333	33333333	33333333	33333333	33333333
8. Indicate author's purpose .....	33333333	33333333	33333333	33333333	33333333	33333333
9. Indicate title most appropriate for ....	33333333	33333333	33333333	33333333	33333333	33333333
10. Indicate pictures best describing main .	33333333	33333333	33333333	33333333	33333333	33333333
11. Choose best summary of a selection .....	33333333	33333333	33333333	33333333	33333333	33333333
12. Match quotation from story with .....	33333333	33333333	33333333	33333333	33333333	33333333
13. Choose answer best describing how .....	33333333	33333333	33333333	33333333	33333333	33333333
14. Choose best phrase describing work .....	33333333	33333333	33333333	33333333	33333333	33333333
15. Match causes with effects .....	33333333	33333333	33333333	33333333	33333333	33333333
16. Choose most appropriate conclusion .....	33333333	33333333	33333333	33333333	33333333	33333333
17. Answer locational question about .....	33333333	33333333	33333333	33333333	33333333	33333333
18. Answer locational question about .....	33333333	33333333	33333333	33333333	33333333	33333333
19. Select meanings, generalizations, .....	33333333	33333333	33333333	33333333	33333333	33333333

READING: GRADE FOUR - WESTWOOD SCHOOL

This graph compares Westwood School results of past years with the state average for the current year (1974). Objectives have been itemized and may be found on pages 82 and 83.

Westwood School staff will want to note in particular those objectives that fall below the 80 percentile mark this year.





READING: GRADE FOUR -- ROOSEVELT SCHOOL

This graph compares Roosevelt School results of past years with the state average for the current year. Objectives used in this test have been itemized and may be found on pages 82 and 83.

Roosevelt School staff will want to note in particular those objectives that fall below the 80 percentile mark this year.



READING: GRADE SEVEN - BREITUNG TOWNSHIP SCHOOLS

Only some of the minimal reading performance objectives were used in the assessment test but represent some of the more important ones for the end of the sixth grade. The objectives are itemized on pages 84 and 85.

The following graph - Reading, Grade Seven - provides a comparison of the state average for the current year with past results in grade seven in the Breitung Township Schools.

Please note in particular those objectives that fall below the 80 percentile mark this year.



DISTRICT SUMMARY SHEET - GRADES FOUR AND SEVEN - BREITUNG TOWNSHIP SCHOOLS

This is a two-page report with the second page a continuation of information provided on the first page.

The first six columns show the percent of students who correctly responded to zero, one, two, three, four, or five items for each of the objectives. These figures show how close students who did not attain an objective came to attaining it:

Column seven shows the percentage of pupils who attained each objective. This is the sum of columns five and six.

Column eight shows the total number of students in the system who were tested.

Column nine shows the objective number.

Column ten shows the objective description.

Column eleven refers to the coding system of the objectives which are included in the APPENDIX.

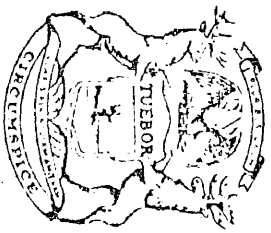
You may retain this form and may work on it for your convenience.

DISTRICT SUMMARY

MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM 1974-75 (YEAR 6)

SPECT FREITUNG  
CODE: 22-050

CLASSROOM SCHOOL  
OR DISTRICT  
SUMMARY



GRADE FOUR  
TESTED 10/74  
PROCESS NO 6363

PERCENT OF STUDENTS ANSWERING	1	2	3	4	5	6	7	8	9	10
0	1	2	4	92						
0	1	1	5	93						
11	3	5	72							
0	1	1	3	95						
1	0	2	1	96						
0	1	2	1	94						
10	5	1	12	84						
1	0	1	3	85						
0	0	4	3	85						
0	1	1	1	97						
1	1	2	9	79						
1	1	3	2	80						
3	0	6	13	69						
0	0	0	2	85						
0	2	0	13	80						
0	1	2	3	84						

WORD RELATIONSHIPS (OPTIONAL)		
STAND SCORE INTERVAL	FREQUENCY	PERCENTAGE INTERVAL
70-74	1	1
65-69	10	10
60-64	20	13
55-59	23	15
50-54	15	10
45-49	27	25
40-44	16	11
35-39	11	7
30-34	7	5
25-29	2	1
20-24	1	1
15-19	1	1
NUMBER OF PUPILS		149

PERCENT OF RACIAL-ETHNIC MINORITY STUDENTS	PERCENT OF RACIAL-ETHNIC MINORITY STUDENTS	PERCENT OF RACIAL-ETHNIC MINORITY STUDENTS
4.1	0.15	4.1
SCHOOL DROPOUT RATE (1972-73)	SCHOOL DROPOUT RATE (1972-73)	SCHOOL DROPOUT RATE (1972-73)
177	177	177
TOT WARSHP: 2,221	TOT WARSHP: 2,221	TOT WARSHP: 2,221

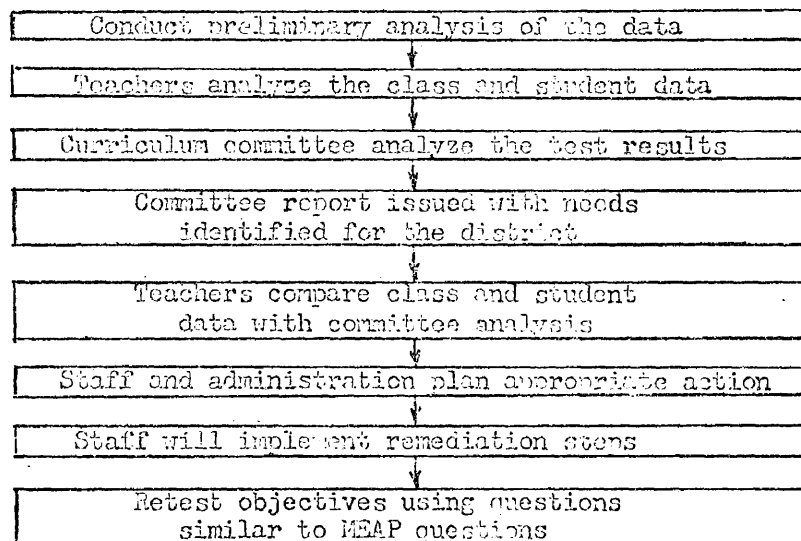
NUMBER OF PUPILS	OBJ. NO.	OBJECTIVE
150	1	INDICATE OBJECTS THAT ARE SAME SIZE
150	2	INDICATE SIMILAR GEOMETRIC SHAPES
150	3	INDICATE OBJECTS ARRANGED FULL TO EMPTY
150	4	INDICATE LONGEST AND SHORTEST OBJECTS
150	5	INDICATE FIRST AND LAST
150	6	CHOOSE EQUIVALENT SETS
150	7	CHOOSE SETS HAVING FEWER NUMBERS
150	8	INDICATE APPROPRIATE NUMERAL FOR POINT ON A LINE
150	9	CHOOSE GREATEST AND LEAST NUMBER
150	10	CHOOSE NUMBER BETWEEN TWO NUMBERS
150	11	CHOOSE NUMBER BEFORE OR AFTER A NUMBER
150	12	IDENTIFY A NUMERAL LESS THAN A 100
150	13	INDICATE NUMBER BEFORE OR AFTER NUMBER WITHIN A DECADE
150	14	INDICATE WHICH OF 2 NUMBERS IS GREATER OR LESS
150	15	INDICATE THE VALUES OF A SET OF DIMES AND PENNIES
150	16	CHOOSE LIST OF NUMBERS IN ASCENDING ORDER





More information follows concerning school and classroom summary forms, classroom listing report, and the individual student report. These forms are largely helpful to the teacher in working on specific problem areas and for individual student help.

At this point it is important to begin analyzing and interpreting the Michigan Assessment results. Most of the people involved with MEAP encourage a cautious approach to interpretation. After receipt of the data by each teacher and/or committee, the following should be done:



In general, all teachers involved, particularly those in grades three, four, five, six, and seven, should answer the following questions:

1. Is each performance objective appropriate for our district?
2. If yes, are the items used to assess each objective appropriate?
3. If yes, have we reached the 80 percentile mark of attainment in our district for the objective?
4. If no, what should we do about it?

Those objectives attained by a small percentage of a class, school, district or state should not quickly be set aside as unsuitable. A deter-

mination should be made by the local curriculum committee to see if the objective is worthy of being considered a desirable one for the school district.

If an objective is accepted as appropriate, and classroom and/or building attainment is below 80%, there probably is a need for classroom or building-wide attention to that objective. A later re-evaluation of the same objective (possibly the next state assessment) will help determine if those changes brought about have been effective in student attainment at a satisfactory level.

It must not be assumed that because a local score falls below the state average on an objective, local action is necessary. Likewise it must not be assumed that because a local score falls above the state average on an objective, is a reason for pride. A responsibility of staff is to make the best use of the results to improve educational decision making. Caution is stressed however, about changing programs based on results which are questionable.

Studies by Wolfe,<sup>46</sup> Mosteller and Moynihan,<sup>3</sup> and Jencks<sup>2</sup> indicated that the family background variables related highly to school achievement measures, however, Womer cautions that, while it is very tempting to assume causal relationships for differences that appear, results from an assessment project should not be interpreted that way unless all other possible causal factors have been controlled.<sup>40</sup>

On the following page is a guide which is intended to provide the teacher and/or committee with a picture of an appropriate evaluative process for interpreting MEAP results. Adherence to this guide is important in attempting to determine appropriate procedure.

INTERPRETING MICHIGAN ASSESSMENT RESULTS OF THOSE ITEMS NOT ACHIEVED  
BY 80 PERCENT OF THE STUDENTS

For all NO answers: refer recommendations to principal and/or assessment coordinator and move to the next objective.

For all YES answers: move to the next question.

1. Objective is valid.
2. Objective is appropriate for the grade intended.
3. Objective can be attained by most students at this grade level.
4. Test item difficulty is satisfactory to most students.
5. Test item vocabulary is satisfactory.
6. Reading level of item is satisfactory.
7. Test item type and contents are valid.
8. Test items are sufficiently clearly stated.
9. Test items are free from cultural bias.
10. Mechanical aspects of the test were satisfactory.
11. The skill has been taught prior to the test.
12. The objective needs more attention in our building.
13. Utilize the school, classroom, and individual reports on the following pages.

If an objective satisfies all of the tests on the previous page and a class achieves below the 80 percentile mark, consider the following:

1. Review materials and methodologies for the three years prior to assessment,
2. reinforce teaching of the objectives,
3. acquire or develop new material,
4. provide more exposure to the topic,
5. use older or younger tutors,
6. group students,
7. retest group with MEAP items or similar ones,
8. utilize sample worksheet on page 78, and
9. use any other sound method to improve attainment of the objective.

SCHOOL SUMMARY SHEET - GRADE FOUR AND SEVEN - WESTWOOD, ROOSEVELT OR JUNIOR HIGH

This is a two-page report with the second page a continuation of information provided on the first page.

The first six columns show the percent of students who correctly responded to zero, one, two, three, four, or five items for each of the objectives. These figures show how close students who did not attain an objective came to attaining it.

Column seven shows percentage of pupils who attained each objective and is the sum of columns five and six.

Column eight shows the total number of students in the school who were tested.

Column nine shows the objective number.

Column ten shows the objective description.

Column eleven refers to the coding system of the objectives which are included in the APPENDIX.

You may retain this form and mark on it for your convenience.

SCHOOL SUMMARY

MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM 1974-75 (YEAR 2)

CLASSROOM, SCHOOL OR DISTRICT SUMMARY

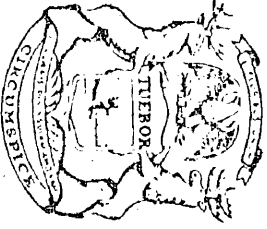
TRACT: EREITUNG  
CODE: 22-030

SCHOOL: WESTWOOD SCHOOL  
CODE: 4492

GRADE: FOUR

DATE TESTED: 10/74

PROCESS NO: 0363



WORD RELATIONSHIPS (OPTIONAL)		
STAND SCORE INTERVAL	FREQUENCY	PERCENT IN INTERVAL
70-74	0	0
65-69	12	10
60-64	16	13
55-59	17	14
50-54	11	9
45-49	30	25
40-44	14	12
35-39	11	9
30-34	6	5
25-29	2	2
20-24	1	1
15-19	1	1
121 NUMBER OF PUPILS		

* * * HUMAN AND FINANCIAL RESOURCE INFORMATION * * *	
44.8	PROFESSIONAL INSTRUCTIONAL STAFF PER 1000 PUPILS
39.1	TEACHERS PER 1000 PUPILS
9.8	AVERAGE YEARS TEACHING EXPERIENCE
33.3%	PERCENT OF TEACHERS WITH MASTERS DEGREE OR ABOVE
\$11,472	AVERAGE CONTRACTED SALARY PER TEACHER
0.3%	PERCENT OF RACIAL-ETHNIC MINORITY STUDENTS
128	GRADE 4 MEMBERSHIP
331	TOTAL MEMBERSHIP

PERCENT OF STUDENTS ANSWERING	STAND SCORE	NUMBER OF PUPILS	OBJ. NO.	OBJECTIVE	OBJECTIVE CODE
2	1	2	1	INDICATE OBJECTS THAT ARE SAME SIZE	AR-I-A-6
1	1	1	2	INDICATE SIMILAR GEOMETRIC SHAPES	AR-I-A-8
5	3	6	3	INDICATE OBJECTS ARRANGED FULL TO EMPTY	AR-I-A-16
0	1	2	4	INDICATE LONGEST AND SHORTEST OBJECTS	AR-I-A-24
0	2	2	5	INDICATE FIRST AND LAST	AR-I-A-39
0	2	1	6	CHOOSE EQUIVALENT SETS	AR-I-B-7
2	1	10	7	CHOOSE SETS HAVING FEWER NUMBERS	AR-I-B-32
0	2	2	8	INDICATE APPROPRIATE NUMERAL FOR POINT ON A LINE	AR-I-B-40
4	3	11	9	CHOOSE GREATEST AND LEAST NUMBER	AR-I-B-43
0	4	3	10	CHOOSE NUMBER BETWEEN TWO NUMBERS	AR-I-B-44
0	1	1	11	CHOOSE NUMBER BEFORE OR AFTER A NUMBER	AR-I-B-45
1	1	1	12	IDENTIFY A NUMERAL BEFORE LESS THAN A 100	AR-I-B-64
1	1	1	13	INDICATE NUMBER BEFORE OR AFTER NUMBER WITHIN A DECADE	AR-I-B-65
2	1	1	14	INDICATE WHICH OF 2 NUMBERS IS GREATER OR LESS	AR-I-B-67
0	2	2	15	INDICATE THE VALUES OF A SET OF DIMES AND PENNIES	AR-I-B-70
0	2	2	16	CHOOSE LIST OF NUMBERS IN ASCENDING ORDER	AR-I-B-81

OBJECTIVE

OBJECTIVE

NO.	QUESTION	ANSWER
17	INDICATE GREATER OR LESS/ SCRAMBLED POSITIONS	AR-I-5-62
18	INDICATE NEXT NUMBER IN A SEQUENCE	AR-I-5-64
19	INDICATE A NUMBER THAT IS A MULTIPLE OF 2	AR-I-8-85
20	SELECT SET WITH TWICE AS MANY MEMBERS AS ANOTHER	AR-I-6-86
21	ADD TWO-DIGIT AND ONE-DIGIT NUMBER/NO CARRYING	AR-II-4-10
22	NUMBER SENTENCES / SUBTRACTION	AR-II-5-9
23	NUMBER SENTENCES / ADDITION OR SUBTRACTION - IDENTIFY OPER.	AR-II-5-11
24	NUMERICAL SET COMPARISONS	AR-II-5-13
25	SUBTRACT ONE-DIGIT FROM TWO-DIGIT NUMBER / NO BORROWING	AR-II-6-15
26	SUBTRACT TWO-DIGIT FROM TWO-DIGIT NUMBER / NO BORROWING	AR-II-6-16
27	TELLING TIME	M-II-A-6
28	IDENTIFY GREATEST OR LEAST AMOUNTS OF MONEY	M-II-B-3
29	IDENTIFY TEMPERATURES	M-II-C-1
30	IDENTIFY GEOMETRIC SHAPES	G-I-A-2
* * * * * R E A D I N G * * * * *		
1	MATCH WORDS WITH DEFINITIONS	2-1
2	INDICATE PHRASES WITH SAME MEANINGS	2-2
3	CHOOSE WORD APPROPRIATE TO BLANK SPACES (CLOZE PROCEDURE)	3-2
4	IDENTIFY METHOD OF ARRANGING DATA	4-1
5	ALPHABETIZE WORDS THROUGH FIRST 3 LETTERS	4-4
6	INDICATE FACTUAL SELECTIONS	5-1
7	INDICATE FICTIONAL SELECTIONS	5-2
8	INDICATE AUTHOR'S PURPOSE	6-1 - 6-3
9	INDICATE TITLE MOST APPROPRIATE FOR SELECTION	7-1
10	INDICATE PICTURES BEST DESCRIBING MAIN IDEA IN SELECTION	7-2
11	CHOOSE BEST SUMMARY OF A SELECTION	7-3
12	MATCH QUOTATION FROM STORY WITH SPEAKER	8-4
13	CHOOSE ANSWER BEST DESCRIBING HOW CHARACTER FEELS IN STORY	10-3
14	CHOOSE PHRASE BEST DESCRIBING WORK IN FIGURATIVE LANGUAGE	10-6
15	MATCH CAUSES WITH EFFECTS	11-1
16	CHOOSE MOST APPROPRIATE CONCLUSION FOR A STORY	11-2
17	ANSWER LOCATIONAL QUESTION ABOUT REFERENCE SOURCES	13-1
18	ANSWER LOCATIONAL QUESTION ABOUT NEWSPAPERS	13-2
19	SELECT MEANINGS, GENERALIZATIONS, CONCLUSIONS NOT EXPRESSED	14-1 - 14-3

CLASSROOM SUMMARY SHEET - GRADE FOUR OR SEVEN

This is a two-page report with the second page a continuation of information provided on the first page.

These sheets should be used by the teacher to evaluate the class attainment of objectives and indicate areas of learning needing attention.

The first six columns show the percent of students who correctly responded to zero, one, two, three, four, or five items for each of the objectives. These figures show how close students who did not attain an objective came to attaining it.

Column seven (C) shows the percentage of pupils who attained each objective. This is the sum of columns five and six.

Column eight (D) shows the total number of students in the school who were tested.

Column nine (E) shows the objective number.

Column ten (F) shows the objective description.

Column eleven (G) refers to the coding system of the objectives which are included in the APPENDIX.



CLASSROOM SUMMARY FOR  
MS. O'NEILL

DISTRICT NORTH EAST SCH DIST  
CODE 55-345

CLASSROOM SCHOOL  
OR DISTRICT  
SUMMARY

A → SCHOOL CENTRAL ELEM  
CODE 7120

GRADE FOUR  
DATE TESTED 10/74



STANDARD	SCORE	PERCENTILE	NUMBER OF PUPILS
70-74	0	0	0
65-69	3	9	3
60-64	3	61	3
55-59	5	19	5
50-54	6	19	6
45-49	7	22	7
40-44	2	61	2
35-39	4	13	4
30-34	0	0	0
25-29	1	3	1
20-24	0	0	0
15-19	0	0	0

PERCENT OF STUDENTS ANSWERING CORRECTLY	NUMBER OF PUPILS	OBJECTIVE	OBJECTIVE CODE
6	6	1 INDICATE OBJECTS THAT ARE SAME SIZE	AR-1-A-6
0	0	2 INDICATE SIMILAR GEOMETRIC SHAPES	AR-1-A-8
0	3	3 INDICATE OBJECTS APPEARED FULL TO EMPTY	AR-1-A-15
31	31	4 INDICATE LONGEST AND SHORTEST OBJECTS	AR-1-A-24
0	0	5 INDICATE FIRST AND LAST	AR-1-A-39
0	0	6 CHOOSE EQUIVALENT SETS	AR-1-B-7
0	0	7 CHOOSE SETS HAVING FEWER NUMBERS	AR-1-B-32
0	0	8 CHOOSE APPROPRIATE NOMERAL FOR POINT ON A LINE	AR-1-B-40
0	0	9 CHOOSE GREATEST AND LEAST NUMBER	AR-1-B-43
0	0	10 CHOOSE NUMBER BETWEEN TWO NUMBERS	AR-1-B-44
0	0	11 CHOOSE NUMBER BEFORE OR AFTER A NUMBER	AR-1-B-45
0	21	12 IDENTIFY A NUMERAL LESS THAN 100	AR-1-B-64
0	6	13 INDICATE NUMBER BEFORE OR AFTER NUMBER WITHIN A DECADE	AR-1-B-65
13	9	14 INDICATE WHICH OF 2 NUMBERS IS GREATER OR LESS	AR-1-B-67
0	6	15 INDICATE THE VALUES OF A SET OF DIMES AND PENNIES	AR-1-B-70
4	9	16 CHOOSE LIST OF NUMBERS IN ASCENDING ORDER	AR-1-B-81
7	3	17 INDICATE GREATER OR LESS/SCRAMBLED POSITIONS	AR-1-B-82
0	3	18 INDICATE NEXT NUMBER IN A SEQUENCE	AR-1-B-84
0	3	19 INDICATE A NUMBER THAT IS A MULTIPLE OF 2	AR-1-B-85
18	13	20 SELECT SET WITH TWICE AS MANY MEMBERS AS ANOTHER	AR-1-B-86
7	6	21 ADD TWO-DIGIT AND ONE-DIGIT NUMBER/NO CARRYING	AR-11-A-10

OBJECTIVE

OBJECTIVE CODE	OBJECTIVE
AR-1-A-6	1 INDICATE OBJECTS THAT ARE SAME SIZE
AR-1-A-8	2 INDICATE SIMILAR GEOMETRIC SHAPES
AR-1-A-15	3 INDICATE OBJECTS APPEARED FULL TO EMPTY
AR-1-A-24	4 INDICATE LONGEST AND SHORTEST OBJECTS
AR-1-A-39	5 INDICATE FIRST AND LAST
AR-1-B-7	6 CHOOSE EQUIVALENT SETS
AR-1-B-32	7 CHOOSE SETS HAVING FEWER NUMBERS
AR-1-B-40	8 CHOOSE APPROPRIATE NOMERAL FOR POINT ON A LINE
AR-1-B-43	9 CHOOSE GREATEST AND LEAST NUMBER
AR-1-B-44	10 CHOOSE NUMBER BETWEEN TWO NUMBERS
AR-1-B-45	11 CHOOSE NUMBER BEFORE OR AFTER A NUMBER
AR-1-B-64	12 IDENTIFY A NUMERAL LESS THAN 100
AR-1-B-65	13 INDICATE NUMBER BEFORE OR AFTER NUMBER WITHIN A DECADE
AR-1-B-67	14 INDICATE WHICH OF 2 NUMBERS IS GREATER OR LESS
AR-1-B-70	15 INDICATE THE VALUES OF A SET OF DIMES AND PENNIES
AR-1-B-81	16 CHOOSE LIST OF NUMBERS IN ASCENDING ORDER
AR-1-B-82	17 INDICATE GREATER OR LESS/SCRAMBLED POSITIONS
AR-1-B-84	18 INDICATE NEXT NUMBER IN A SEQUENCE
AR-1-B-85	19 INDICATE A NUMBER THAT IS A MULTIPLE OF 2
AR-1-B-86	20 SELECT SET WITH TWICE AS MANY MEMBERS AS ANOTHER
AR-11-A-10	21 ADD TWO-DIGIT AND ONE-DIGIT NUMBER/NO CARRYING

## CLASSROOM LISTING REPORT - GRADE FOUR OR SEVEN

The classroom listing report is used to summarize the information contained on the Individual Student Report for the entire classroom. It allows the local educator to examine quickly the status of all students in the classroom on each mathematics and reading objective. Attained objectives are indicated with a capital letter Y (for YES) and objectives not attained are indicated with a capital N (for NO).

The bottom line showing percent of students who attained the objective allows the local educator to assess quickly the status of the entire classroom on each objective.

By summarizing each students' status on each objective on one sheet, an educator can determine readily which students need additional help to attain certain performance objectives.

Seventh grade Classroom Listing Reports for mathematics results are reported for each mathematics teacher. The reading results are grouped according to the students' English teacher.



## INDIVIDUAL STUDENT REPORT - GRADE FOUR OR SEVEN

The Individual Student Report form is available to staff but is not included here because of the quantity. A sample form is therefore included in this handbook in place of the actual form.

This report presents a student's performance on each test item for all of the mathematics and reading performance objectives.

Section B indicates the objective number while section C gives a brief description of each.

Section D shows the "OBJECTIVE ATTAINED" line. This indicates whether or not the student attained each objective. The student must answer correctly at least four of the five test items measuring each objective in order to be scored as attaining the objective. If the "OBJECTIVE ATTAINED" line is left blank, this indicates the student did not attempt enough of the questions for his status on the objective to be determined.

Section E indicates the test items that measure each objective and whether the student's responses were correct or incorrect for each item. A correct response is indicated with a plus (+) sign. An incorrect response is shown by a letter indicating the student's incorrect choice. An asterisk (\*) is used to indicate that the student did not respond to an item.

Section F shows the total number of items the student correctly answered for each objective.

The "COMMENTS" section of the report, section H, is for the convenience of educators who receive and use the report. It can be used to make notations regarding the student's performance and to note highlights of the test report. Because of space limitations, this space was not provided on the seventh grade report forms.



Some possible reasons for low student attainment rates on the objectives are cited below:





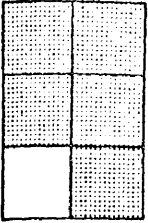
1. Students do not have the skill described by the objective.
  - a. Students cannot learn the skills.
  - b. Students have not been taught the skills.
    1. Skills are taught later.
    2. Skills are not taught at all.
    3. Classroom materials currently in use do not include these skills.
  - c. Instruction in the skills is ineffective.
    1. New teaching strategies are needed.
    2. Available instructional materials are inadequate.
    3. Staff skills need further development.
    4. Resources available are inadequate.
2. The objective is inappropriate for fourth (seventh) grade students.
  - a. The objective should not be taught.
  - b. The objective is not minimal.
  - c. The objective describes a skill which presently known teaching practices are unable to impart.
3. The test items are not adequate measures of the objective.
  - a. The test items may require an inappropriate level of mastery.
  - b. The reading level of test items may be too difficult for some students.
  - c. The mechanical aspects of the test may have confused students.

### SAMPLE WORKSHEET

This worksheet can be used by individual teachers and/or a committee seeking to compile a written record of evaluations and teaching suggestions for objectives not attained but considered minimal by staff members. There may reasonably be different interpretations of the phrase "objectives not attained". As expressed earlier, we assume that a class or school has not attained the objective if less than 80% of that class had three or less correct answers to the five questions covering the objective. Likewise, an individual student did not achieve the objective if he could not correctly answer at least four of the five questions concerning the objective. This type of worksheet enables a teacher to (1) record valid remarks concerning the objective and how students responded, (2) begin a written file of suggestions to improve the students' achievement of the objective, (3) enable teachers to share ideas on curriculum improvement, and (4) provides a written record of suggestions and remarks to refer to one year later for a self evaluation. New or additional suggestions may then have to be rewritten.

This provides a good guide especially for a committee working to improve the class percentage of attainment of the minimal objectives.

It would be advisable for individual teachers to complete such a worksheet prior to a curriculum committee meeting. The committee could then consolidate the most pertinent remarks and the appropriate teaching and curriculum suggestions that have been agreed upon. These could then be duplicated and distributed to the segment of the faculty involved in teaching the objective.

OBJECTIVE	RESULTS	REMARKS	TEACHING AND CURRICULUM SUGGESTIONS
<p>14. AR-III-A-1 (Grade 7) 65% Identify Congruent Parts Items 196-200</p> <p>Given several objects, some divided into congruent parts, some divided into noncongruent parts, the learner will identify congruent parts.</p> <p>SAMPLE: Item 196 pasted on camera ready copy.</p> <p>Which figure is divided into congruent parts?</p> <div style="display: flex; justify-content: space-around; align-items: center;">     </div> <p>F                      G                      H                      J</p> <p>15. AR-III-A-18 (Grade 7) 76% Identify Shaded Area of Figure with Fraction Items 111-115</p> <p>Given a diagram divided into congruent parts, with some parts shaded, the learner will identify the shaded area by identifying an appropriate fraction.</p> <p>SAMPLE: Choose the fraction that names the shaded part.</p> <div style="display: flex; align-items: center; margin-top: 10px;">  <div style="margin-left: 20px;"> <p>A <math>\frac{1}{3}</math></p> <p>B <math>\frac{1}{6}</math></p> <p>C <math>\frac{5}{6}</math></p> <p>D <math>\frac{7}{8}</math></p> </div> </div>		<ol style="list-style-type: none"> <li>1. The term congruent may have been unfamiliar to many students. Twelve percent of the students got zero correct answers.</li> <li>2. The fact that only 65% of the students had success with this objective is disappointing. The objective should be revised so that the emphasis is placed on recognition of equal size parts of unit regions. With revision in wording, the objective is minimal.</li> <li>3. The term congruent should receive more attention in the intermediate grades in connection with geometry topics.</li> </ol>	<ol style="list-style-type: none"> <li>1. Teach the term congruent in grades 4-6 by using activities like tracing plane figures with pencil and tracing paper.</li> <li>2. Emphasize activities which stress the identification of the unit region. For example, show a picture of part of a rectangular unit region and request that the student reconstruct (through drawing) the unit.</li> <li>3. Stress the interpretation of the fraction symbol <math>\frac{3}{5}</math> which means that the unit has been divided into 5 parts of the same size and three of these parts are being considered (shaded, pieces of pie eaten, etc.).</li> <li>4. Teach the meaning of the word "shaded" prior to the unit on fractions.</li> <li>5. Review the concept of order from least to greatest with whole numbers prior to working with fractional numbers.</li> <li>6. Use five 3 x 5 cards as unit regions and color <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{3}{5}</math>, <math>\frac{4}{5}</math>, and <math>\frac{5}{5}</math> of each card respectively. Have the students say how much is colored on each card and arrange the cards from least to greatest — left to right — on their desks.</li> </ol>



APPENDIX B

READING - GRADE 7: PERCENT OF OBJECTIVES ATTAINED: ACTUAL MEAN AND EXPECTED MEAN FOR EACH I.Q. LANE ON THE SCATTERGRAM.

I. Q. LANE	ACTUAL MEAN	EXPECTED MEAN	BELOW, AT, OR ABOVE EXPECTED MEAN
75-80	10	0	ABOVE
81-85	18	10	ABOVE
86-90	29	30	AT
91-95	62	50	ABOVE
96-100	63	70	BELOW
101-105	74	80	BELOW
106-110	80	80	AT
111-115	86	80	ABOVE
116-120	87	80	ABOVE
121-125	94	80	ABOVE
126-130	100	80	ABOVE
131-135	100	80	ABOVE
136-140	100	80	ABOVE

APPENDIX C

MATHEMATICS - GRADE 7: PERCENT OF OBJECTIVES ATTAINED: ACTUAL MEAN AND EXPECTED MEAN FOR EACH I. Q. LANE ON THE SCATTERGRAM.

I. Q. LANE	ACTUAL MEAN	EXPECTED MEAN	BELOW, AT, OR ABOVE EXPECTED MEAN
75-80	55	0	ABOVE
81-85	41	10	ABOVE
86-90	44	30	ABOVE
91-95	62	50	ABOVE
96-100	83	70	ABOVE
101-105	74	80	BELOW
106-110	80	80	AT
111-115	78	80	BELOW
116-120	82	80	ABOVE
121-125	87	80	ABOVE
126-130	89	80	ABOVE
131-135	85	80	ABOVE
136-140	95	80	ABOVE

APPENDIX D  
 READING OBJECTIVES  
 MEASURED IN THE 1974-75  
 MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM\*  
 Grade 4

Objective  
 Number

1. 2.1 Given a reading selection at the third grade level, the learner will match a series of words in the selection with appropriate definitions.
2. 2.2 Given a set of phrases, the student will indicate those phrases which have the same meaning.
3. 3.2 Given a reading selection at the third grade level in which every fifth word has been replaced with a blank, the learner will choose the exact word appropriate to the blank space at 50% accuracy.
4. 4.1 Given a method of arranging data, the learner will identify the method (e.g., color, size, importance, time, etc.)
5. 4.4 Given a series of randomly placed words, the learner will be able to alphabetize the words through the first three letters.
6. 5.1 Given a series of reading selections, the learner will indicate those which are factual.
7. 5.2 Given a series of reading selections, the learner will indicate those which are fictional.
8. 6.1-6.3 Given a reading selection, the learner will be able to identify the author's purpose (e.g., persuasion, entertainment, propaganda, etc.)
9. 7.1 Given a reading selection at the third grade level, the learner will select from a list of possible titles the one most appropriate as the title for that selection.
10. 7.2 Given a reading selection at the third grade level, the learner will select from a series of still pictures the one picture most appropriate in depicting the main idea of the selection.
11. 7.3 Given a reading selection at the third grade level, the learner will select from a number of short summaries the one which best summarizes the selection.
12. 8.4 Given a reading selection at the third grade level, the learner will match a series of direct quotations from the story with the character who is speaking.
13. 10.3 Given a reading selection at the third grade level, the learner will choose from a series of sentences that sentence which best describes how a given character feels in a story.
14. 10.6 Given a selection containing figurative language, the learner will identify from a series of descriptive phrases the phrase that most accurately describes the mood expressed in the selection.

\*This list contains only the objectives which are included in the every-pupil portion of the 1974-75 MEAP tests. A complete set of the objectives is available in *Minimal Performance Objectives for Communication Skills Education in Michigan*, Michigan Department of Education.

15. 11.1 Given a reading selection at the third grade level, the learner will correctly match a series of causes with a corresponding series of effects.
16. 11.2 Given a reading selection at the third grade level with the conclusion of the story deleted, the learner will select from a series of possible conclusions the one most appropriate to the selection.
17. 13.1 Given a locational question, the learner will choose from a series of reference sources where that item will be found.
18. 13.2 Given a locational question about newspapers, the learner will select the section where he would find the answer.
19. 14.1-14.3 Given a reading selection at the third grade level, the learner will answer correctly a series of multiple choice questions relating to meanings, generalizations, or conclusions not expressed in the selection itself.

APPENDIX E  
READING OBJECTIVES  
MEASURED IN THE 1974-75  
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM  
Grade 7

Objective  
Number

1. 18.1 Given a reading selection at the sixth grade level, the learner will match a series of words in the selection with appropriate definitions.
2. 18.2 Given a set of phrases, the learner will indicate those phrases which have the same meaning.
3. 20.1 Given a method of arranging data, the learner will identify the method (e.g., sequence, importance, etc.).
4. 21.1 Given a series of randomly placed words, the learner will be able to alphabetize the words through the first three letters.
5. 22.1 Given a series of reading selections, the learner will indicate those which are factual.
6. 22.2 Given a series of reading selections, the learner will indicate those which are fictional.
7. 23.1-23.3 Given a reading selection, the learner will be able to identify the author's purpose (e.g., persuasion, entertainment, propaganda, etc.).
8. 24.1 Given a reading selection at the sixth grade level, the learner will select from a list of possible titles the one most appropriate as the title for that selection.
9. 24.2 Given a reading selection at the sixth grade level, the learner will select from a series of still pictures the one picture most appropriate in depicting the main idea of the selection.
10. 24.3 Given a reading selection at the sixth grade level, the learner will select from a number of short summaries the one which best summarizes the selection.
11. 24.4 Given a series of three or more reading selections at the sixth grade level, the learner will indicate the two most alike in the ideas expressed.
12. 25.3 Given a reading selection at the sixth grade level, the learner will match a series of direct quotations from the story with the character who is speaking.
13. 26.3 Given a reading selection at the sixth grade level, the learner will correctly answer a series of multiple choice questions relating to the sequence of events or ideas presented in the selection.
14. 27.2 Given a reading selection at the sixth grade level, the learner will choose from a series of sentences that sentence which best describes how a given character feels in a story.
15. 28.1 Given a reading selection at the sixth grade level, the learner will choose from a series of sentences the one which best describes a motive for some action or activity.

16. 29.1 Given a reading selection at the sixth grade level, the learner will correctly match a series of causes with a corresponding series of effects.
17. 29.5 Given a reading selection at the sixth grade level, the learner will answer correctly a series of multiple choice questions relating to meanings, generalizations, or conclusions not expressed in the selection itself.
18. 31.1 Given a locational question, the learner will choose from a series of reference sources where that item will be found.
19. 31.2 Given a locational question about newspapers, the learner will select the section where he would find the answer.
20. 32.1 Given a reading selection at the sixth grade level with the conclusion of the story deleted, the learner will select from a series of possible conclusions the one most appropriate to the selection.

APPENDIX F  
MATHEMATICS OBJECTIVES  
MEASURED IN THE 1974-75  
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM\*  
Grade 4

Objective  
Number

1. AR-I-A-6 Given a set of objects, the learner will recognize objects that are the same size.
2. AR-I-A-8 Given an object shaped like a circle, triangle, square, or rectangle, the learner will choose the shape the object represents.
3. AR-I-A-16 Given a set of three containers, one full, one empty, and one half-filled, the learner will choose the containers that are arranged from full to empty.
4. AR-I-A-24 Given a collection of five objects of varying lengths, the learner will identify the longest or the shortest, as requested.
5. AR-I-A-39 Given five small toys in a line, the learner will identify the first toy and the last one.
6. AR-I-B-7 Given a set with less than ten objects, the learner will identify an equivalent set.
7. AR-I-B-32 Given a set of two to eight objects, the learner will identify a set having fewer members than the original set.
8. AR-I-B-40 Given a line marked with congruent segments and a set of number cards (0-10), the learner will choose the appropriate number card for the point on the line.
9. AR-I-B-43 Given any three numbers, 0-10, the learner will identify which number is the greatest and which is the least, on request.
10. AR-I-B-44 Given two consecutive even or odd numbers, 0-9, the learner will name the number that comes between the two given numbers.
11. AR-I-B-45 Given a number from 1 to 8, the learner will identify the number that comes before or after the given number.
12. AR-I-B-64 Given a set of tens and ones representing a number less than 100, the learner will identify the numeral.
13. AR-I-B-65 Given a set of sequentially ordered whole numbers within a decade less than 100, such as 31, 32, . . . 40, the learner will identify the number that comes immediately before or after a given number, as requested.

\*This list contains only the objectives which are included in the every-pupil portion of the 1974-75 MEAP tests. A complete set of the objectives is available in the *Minimal Performance Objectives for Mathematics in Michigan*, Michigan Department of Education, 1973. The wording of the objectives in this APPENDIX may be different from the original wording as contained in the publication cited above. These minor wording changes were necessitated by the group-administered nature of the items developed to measure the objectives.

14. AR-I-B-67 Given 2 two-digit numbers, the learner will tell which number is greater and which number is less.
15. AR-I-B-70 Given a set of dimes and pennies valued between 11 and 99 cents (one dime, one penny to nine dimes, nine pennies), the learner will state the value.
16. AR-I-B-81 Given a random list of two- or three-digit numbers, the learner will identify the list that is in ascending order.
17. AR-I-B-82 Given 2 three-digit numbers which have the same digits but in different positions, the learner will compare them to determine which is greater and which is less.
18. AR-I-B-84 Given a counting sequence of two or four numbers, the learner will write the next number in the sequence.
19. AR-I-B-85 Given the counting numbers 1-10, the learner will indicate those that are multiples of 2.
20. AR-I-B-86 Given a set of objects, the learner will select another set that will have twice as many objects.
21. AR-II-A-10 Given addition exercises involving a two-digit number plus a one-digit number requiring no regrouping (carrying), the learner will find the sums with or without the use of aids.
22. AR-II-B-9 Given a set of objects or pictures showing a subtraction relationship with combinations to 18, the learner will identify an appropriate number sentence.
23. AR-II-B-11 Given a subtraction word problem read by the teacher involving combinations to 18, the learner will: 1) identify the operation, 2) identify an appropriate number sentence, and 3) identify the answer.
24. AR-II-B-13 Given two sets of objects, one with more objects than the other, the learner will identify how many more members it has.
25. AR-II-B-15 Given a two-digit number, the learner will subtract one-digit numbers with no regrouping (borrowing) with or without the use of aids.
26. AR-II-B-16 Given a two-digit number, the learner will subtract a two-digit number with no regrouping (borrowing).
27. M-II-A-6 Given the reading "\_\_\_\_\_ o'clock" and a clock face, the learner will identify the clock showing the appropriate time.
28. M-II-B-3 Given three to five different amounts of money, all less than or equal to \$5.00, the learner will identify the greatest or the least.
29. M-II-C-1 Given a Fahrenheit or Centigrade thermometer, the learner will identify the temperature (above zero) to the nearest degree.
30. G-I-A-2 Given pictures of various shapes, the learner will identify circles, triangles, squares, and rectangles as requested.



APPENDIX G  
MATHEMATICS OBJECTIVES  
MEASURED IN THE 1974-75  
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM  
Grade 7

Objective  
Number

1. AR-I-B-87 Given any four-digit number, the learner will identify the number that is 100 or 1000 more or less than it is, without using formal addition or subtraction.
2. AR-I-B-89 Given a number orally, the learner will identify the arabic numeral.
3. AR-II-A-22 Given addition exercises involving a three-digit number plus a one-, two-, or three-digit addend, with or without regrouping (carrying), the learner will identify the sums, using any techniques.
4. AR-II-A-26 Given addition problems involving two or three addends with three, four, five, or six digits, with or without regrouping, the learner will find the sums, using any techniques.
5. AR-II-B-20 Given a three-digit number, the learner will subtract a two or three-digit number, with or without the use of aids.
6. AR-II-C-6 Given a repeated addition sentence, the learner will represent it as a multiplication sentence with its product.
7. AR-II-C-11 Given two numbers, the learner will demonstrate that the order in which they are multiplied does not change the product.
8. AR-II-C-13 Given a one-digit number and (10,20...), (100,200...), the learner will identify the product.
9. AR-II-C-15 Given a two-digit number to be multiplied by a one-digit number, the learner will identify the product, with or without aids.
10. AR-II-D-5 Given a sentence with one single digit, a missing factor, and a product (whole numbers), the learner will identify the missing factor.
11. AR-II-D-7 Given a division fact, the learner will identify it rewritten as a multiplication fact.
12. AR-II-D-9 Given a one-digit divisor (factor) and a dividend (product) of less than 100, the learner will identify the quotient (missing factor) if there is no remainder.
13. AR-II-D-15 Given an exercise with a dividend of four digits or less, and a one-digit divisor, the learner will identify the quotient.
14. AR-III-A-1 Given several objects, some divided into congruent parts, some divided into noncongruent parts, the learner will identify congruent parts.
15. AR-III-A-18 Given a diagram divided into congruent parts, with some parts shaded, the learner will identify the shaded area by identifying an appropriate fraction.

16. AR-III-A-19 Given any five fractions with like denominators, in random order, the learner will identify them in order (halves, thirds, fourths, fifths, sixths, eighths, tenths); with or without the use of aids.
17. AR-III-B-4 Given two common fractions with like denominators and a sum greater than 1, the learner will identify the sum, with or without the use of fractional cut-out parts.
18. AR-III-B-7 Given two mixed numbers with like denominators, the learner will identify the sum.
19. AR-III-C-4 Given a mixed number and a fraction with like denominators, of 2, 3, 4, 6, or 8, where no regrouping is necessary, the learner will find the difference.
20. AR-III-C-6 Given a whole number and a common fraction with a denominator of 2, 3, 4, 6, or 8, the learner will find the difference with or without the use of fractional parts.
21. AR-III-D-4 Given two unit fractions with denominators less than seven, the learner will identify the product with or without the use of a model.
22. AR-IV-A-3 Given a model of a fraction illustrating hundredths, the learner will identify the decimal fraction as illustrated.
23. AR-IV-A-7 Given a decimal fraction of no more than three places, the learner will name the place value of each digit, without aids.
24. AR-IV-B-3 Given a verbal problem involving addition and subtraction of decimal numbers involving only tenths, the learner will find the answer.
25. AR-IV-B-6 Given a verbal problem involving addition and subtraction of decimal numbers involving tenths and hundredths, the learner will find the answer.
26. AR-IV-B-9 Given an addition and subtraction decimal problem in horizontal or vertical form with no more than five (5) digits and no more than three (3) decimal places, the learner will find the sum or difference.
27. AR-VI-15 Given a picture of sets paired in (A) a one-to-one, (B) a many-to-one, or (C) a one-to-many ratio and part of another pair, the learner will identify the pair that keeps the ratio equivalent.
28. M-I-B-8 Given a polygon, the learner will estimate its area in square units.
29. M-I-C-7 Given a drawing of a rectangular solid divided into units (dimensions less than or equal to 5 units), the learner will name the number of units in it.
30. M-II-A-10 Given a clock face with hands on it, the learner will choose the correct time notation.
31. M-II-A-11 The learner will use A.M. and P.M. notation in writing time.
32. M-II-B-7 Given two money values, the learner will add or subtract using dollars and cents notation.

33. M-II-B-9 Given verbal problems consisting of one or two operations involving money values less than or equal to \$20, the learner will solve the problems.
34. M-II-C-3 Given a Fahrenheit or Centigrade thermometer the learner will identify temperatures to the nearest degree, using the degree [ $^{\circ}$ ] symbol.
35. G-I-A-4 Given a set of quadrilaterals, the learner will identify and name a parallelogram, a square, and a rectangle.
36. G-I-B-5 Given the description of a plane, and a part of a plane, the learner will identify surfaces which represent a plane or part of a plane.
37. AL-2 Given a statement of equality involving addition, subtraction, or multiplication facts and containing a placeholder or letter, the learner will identify the missing number.
38. AL-4 Given a pair of whole numbers or number phrases less than 1,000, the learner will identify the appropriate symbol of equality or inequality,  $<$  or  $=$  or  $>$ .
39. AL-5 Given an equation involving one or zero, the learner will complete the sentence.
40. AL-7 Given a numerical statement involving distributive property and a placeholder, the learner will insert the missing value.

APPENDIX H

TENTATIVE TIMETABLE FOR EXPANSION OF THE  
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM.

GRADE	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79
1		PILOT	PILOT	PILOT	X	X
4	X	X	X	X	X	X
7	X	X	X	X	X	X
10			PILOT	PILOT	X	X
12				PILOT	PILOT	X