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ABSTRACT

The Michigan Educational Assessment Program (MEAP) staff developed strategies to train teachers and principals to use state assessment results for improving academic achievement in their schools. Two local uses of the state assessment results are (1) using the results of grades 4, 7, and 10 with the students tested, and (2) using the results to review curricula in the previous grade levels. Samples of materials developed for each type of use are appended, and include instructional support materials for mathematics, pamphlets for preparing school staffs to provide individual student results to provide individual student results to parents, plans for preparing for a utilization of MEAP test results workshop, and a model for utilization of MEAP test results. Presentation of the utilization model is planned for three sessions: Session I examines the test results and identifies present needs; Session II deals with curriculum and instructional planning; and Session III is devoted to decision making and setting goals. Because these methods were developed by observation of what does work in schools and because the techniques were geared to the resource restraints of local schools, they can be applied in a variety of settings. (RL)

DEVELOPMENT OF SIMPLE WAYS FOR USING STATE ASSESSMENT RESULTS

Edward D. Roeber

Introduction and Background

In 1974, the Michigan Educational Assessment Program (MEAP) staff was challenged by then Superintendent John W. Porter. The challenge was quite simple: prove that the statewide assessment results could be used in local school districts. While we all had a good idea that state assessment results should be used by local educators and that they could be used, we had precious little evidence that they were being used. After all, MEAP staff had been training district level staff of local districts (and in a special project, had trained intermediate district level coordinators in rural, out-state areas) to tell teachers how to use the results. Certainly, gathering the information about the use of test results would be a simple matter. Almost every district sent representatives to be trained each year, so test use must be widespread.

What staff found was unexpected. MEAP staff developed a list of districts who we felt had 1) a positive attitude about MEAP, 2) who had sent people to be trained each year, and 3) who had indicated a commitment on using the test scores. Each of these districts was visited and the district-level and some of the school-level individuals were asked about the use of results. What we found was to change the dissemination and training strategy of MEAP profoundly.

Staff found that even in the districts with the most qualified and positively-inclined individuals (e.g., directors of research or testing), there were wide differences in the use of the results and attitudes toward the program. Some buildings felt the program was useful (or could be useful). These buildings were more likely to have had sessions for teachers on using the results.

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Teachers and principals were also more likely to know about the Assessment Program. In other buildings, principals and teachers did little or nothing with the results; scores were quickly filed and forgotten. These buildings were more likely not to know factual information about the Program (e.g., grades, subject areas tested), its purposes, uses or limitations. The key to each building's use of the results was not the district-level individuals knowledge or attitude; instead, it appeared to rest on the level of understanding and commitment of the building principal.

One reason why the district-level individuals had such little impact is that only the positively-inclined, knowledgeable individual was likely to ask the district level person for assistance. The others probably figured that the less they had to do about the program the better. Because they did not understand or misunderstood the Program, they were less likely to ask for assistance. They were more likely to ignore the test information. Incidentally, this phenomenon was universal: it made little difference if the building scored high or low, whether it was located in an urban, suburban or rural community, or in downstate or outstate areas.

The Building-Level Approach

Beginning in 1975, staff of the Assessment Program began to design materials and information directly for the building principal. Our aim was to make this individual the most knowledgeable about the Assessment Program. If the building principal understood the program, we assumed he/she would be able to answer teacher questions and concerns about it. Certainly, the principal would be more inclined to see that the results were used. Therefore, our task was before us. First, develop communication techniques to allow us to work directly with building level individuals. Second, conduct training

for each of the 3,800 elementary, junior high/middle, and senior high schools in the state. Third, do this with limited staff and resources!

We quickly realized that with four staff and 3,800 buildings, it would take nearly a decade to cover each building individually. Certainly direct and individual contact was out. Second, coercion would not be possible. Although our scores might threaten a principal or teachers we couldn't (despite the insistence of a state legislator) force them to use the results. Therefore, we settled on a strategy of enticing the building level people to use the results.

Staff of the Department began, in 1976, to offer workshops on using the results. Initially, the experience was not that good. We had overestimated the local educators' knowledge of testing and of MEAP. Because many teachers and principals have never had a course on testing, they did not have experience using other test results which could be transferred to using state assessment results. In fact, their previous experience of not using the results was something which had to be overcome, since many felt that tests just were not useful in classroom instruction. (Cautiously, most agreed that good schools administer tests, though).

Whereas originally we covered the topic of test utilization in general terms, we soon learned that this was not sufficient to motivate many people to use the results. A later example of general utilization hints is shown in Attachment 1; earlier versions were more extensive and included rather complex flow charts. Certainly, if a school took the steps described (if they know how to do it), they would be using the results. The problem was that many of us had not seen anyone use the results, so we could not teach others how to use them either.

In 1977, this began to change. MEAP staff went looking for school districts which used the results. These examples would serve to teach us about how local schools use the results, as well as what features of our program were okay and which needed modification. As a result, MEAP staff learned of districts using the results (Clarkston, Haslett, Detroit, Lansing, for example) and were able to follow how they used the results.

From this examination, a number of small modifications to the program were made. For example, classroom summaries showed the objectives students did not attain rather than the ones they did attain. Individual student reports of results were sent to the building principal rather than to the classroom teachers. The individual student reports were rather bulky and this tended to discourage teachers from using the results.

More importantly, though, MEAP staff were able to document the ways these districts and others used the results. What resulted was a series of "how to do it" guidelines which MEAP staff could provide to other schools. Because tnese methods were generated by teachers and principals, there is some likelihood that they will work and, perhaps more importantly, that they will be accepted and implemented by principals and teachers.

School Use of State Assessment Results

There are two major uses of the state assessment results which MEAP staff work on with local schools. The first is to use the results of the fourth, seventh and tenth grade assessments with the students tested. The second is to use the results to review (or at least, initiate a review) of the curricula in the previous grade levels. MEAP staff saw that materials were developed for each type of use.

In order to assist teachers look at individual student results and teach skills which students lacked or were weak in, instructional support materials for mathematics and reading (and other subject areas tested on a sampling basis) were developed. A sample of the mathematics support materials is shown in Attachment 2. Before support materials were developed, the statewide mathematics education professional group had also done a series of monographs of the results and instructional implications.

Our major unmet need until recently was helping local schools share results with parents. Many schools wanted to share results with parents, but found that the reports which MEAP provided were too detailed. Therefore, a special report was prepared. However, then the special report generated questions in some school districts because school staffs were not prepared to answer parent questions. Attachment 3 shows the materials which were developed to prepare school staffs to provide individual student results to parents, as well as a copy of the Parent Pamphlet.

The second major use of the Assessment results is to review the curricula of the previous grade levels. While the State assessment results can be used to initiate this process, schools that engage in this process are encouraged to bring other test (or non-test) results to the process. This allows generalizing the process of using test results to the other tests which schools use.

The process of using the test results to examine curricula needs is relatively simple. First, at least some teachers from each grade level should be represented. Also, the building principal <u>should</u> participate. Second, the emphasis of the team should be on determining needs, <u>not</u> fixing blame or finding fault. This positive approach is needed to assure that changes agreed upon are implemented with care and concern for improvement. Third, team members should

try to learn what each does to teach the skills, what needs each perceives, and finally, how each team member can help the others. Finally, this process is an iterative one. After the process is used, it can be repeated on other results at a later time or to review changes which may or may not have occurred at a later time.

The first step in the process is to pick the skills to be concerned about. This can be done by determining a criterion level to use for all (or some) of the objectives. Or, it can be done by asking team members to rate the importance of each skill and an expected level of student achievement. Then, objectives selected are those which were rated highest in importance and which the obtained results are most discrepant from expected results. This latter technique is preferable when team members are first exposed to a set of skills, while the first technique can be used when teachers have had more experience with the skills tested.

The second step in the process is to determine the priority given in the building to each skill. This requires team members to determine how much instructional time is given on each skill (or enabling skill for the skill tested). This can be expressed in minutes, hours, class hours or any convenient unit. It is also important to note <u>when</u> instruction is given (e.g., end of the school year) and what materials were used. The purpose of this exercise is to determine whether anyone teaches the skill and/or if the skill is over-taught. This step alone may be the most valuable in the process, because team members are taking the first steps in building an articulated curriculum. By having the principal involved, he or she is able to learn what is taught and when. Usually what results from this process is that skills that students do poorly on are ones which teachers have not taught. Occasionally, too, other skills are "overtaught" because individual teachers are not aware that other teachers are teaching the same skills.

The final step in the process is to make decisions about the curriculum. Team members need to decide which skills to emphasize further and which skills not to emphasize as much. For skills which team members determine need greater emphasis, the team needs to determine at what grade level(s) this greater emphasis will occur. The team will need to determine also how this greater emphasis will be accomplished. The team will need to determine how the skills will be taught and what materials are needed to teach the skills. This search may uncover materials which team members have already located or developed, or the team may need to search for the needed materials among commercial vendors, specialists in the field, other school districts, or even the state department of education.

Once this process has been used (and it might take two or three meetings to run through completely), the building team should have begun teaching the skills that they have determined are highest priority. Because the process is simple to use, it does not rely on using testing experts or curriculum experts, except perhaps as consultants after the process has begun. Because the process involves team involvement, it capitalizes on the enthusiasm and spirit of working together to accomplish a common goal and the affective results of the process can affect school operation in other areas. Finally, because teachers and the principal work together to set common goals, the principal becomes more involved in the instructional process. The principal knows what ought to be taught, when and how. The principal may become an instructional leader and this may help improve student achievement in the building. Teachers begin to feel more enthusiastic about their work, since they have had input on what is important/less important, as well as how the important skills will be accomplished. They feel more in control of what is done and how it is done.

Conclusion

The point of this paper has been to show that there are simple ways to help teachers and principals use test results, including state assessment scores. Because these methods were developed by observation of what does work in schools and because the techniques were geared to the resource restraints of local schools, they can be applied in a variety of settings. Whether they will be applied remains the prerogative of the building principal and building staff. The task of the state assessment staff is to encourage schools to use the techniques to improve school achievement.

"MAKING A DIFFERENCE"—Using the Assessment Results

Importance of Interpretations. The educational assessment program provides a large amount of information. Teachers, principals, and other district personnel should reach an understanding of what the assessment data mean to them. In the absence of an "official" interpretation, newspaper reporters, citizens, parents, or students will provide their own meanings of the data. If these interpretations are improper or based on limited information, they may be difficult for school personnel to correct.

At the building and district levels, principals and other administrators should provide public interpretive reports of the data. Ideally, interpretations should be made with the involvement of teachers and other staff members who are capable of contributing experience and expertise to any interpretive effort. The meanings of the data should then be reported to the media and the public as soon as possible.

> **"The Parent Pamphlet can help teachers more easily explain the assessment test results to parents."**

Teachers should study the classroom data carefully and attempt to relate this information to their instructional practices. Teachers are also advised to make an effort to interpret the test results to students and parents and discuss the test with them. The **Parent Pamphlet** can help teachers more easily explain the assessment test results to parents. In addition to answering questions often asked by parents, each pamphlet presents the test results, by skill area, for an individual student. This enables the teacher to have summary information on each student in a form readily understandable by parents. The **Parent Pamphlet,** in conjunction with this **Handbook** and teacher explanations, will help to create the home-school partnership for building better basics.

"Getting Them Out"—District Use

- Most important: Distribute assessment results to principals and teachers **promptly.**

> **"Your assessment results have the potential for an excellent public information opportunity."**

- Encourage principals and teachers to distribute **Parent Pamphlet** to parents, preferably during parent-teacher conferences; or space has been provided on the pamphlet for mailing address and postage. As you know, young students usually will carry things home. Often, older students "lose" papers on the way.

Because of the recent attention given to "declining test scores" in the news media, educational news is of interest to a larger population than has been the case in the past. Your assessment results have the potential for an excellent public information opportunity. The Michigan Department of Education urges you to take advantage of the opportunity by letting the public know how you are doing with regard to assessment results and what you are

doing in your schools to bring about quality education for your students.

You may wish to consider the following steps in planning your communications program:

1. Determine the audiences whom you wish to receive the information. These will probably include administrative staff, teachers, the school board, parents, and the community-at-large.

2. Choose a presentation for each audience which will be meaningful and clear to that audience. For example, complicated graphs and charts are not helpful to most lay people. Often, they only confuse or intimidate people.

3. Prepare a complete report of the assessment results which could be made available to anyone, including news media representatives, who wishes to understand or study the results in depth. Since this will probably be prepared for the school board, having additional copies available in the central office should present no problem.

> **"Prepare a brief, clear release which can be used by the news media."**

4. Prepare a brief, clear release which can be used by the news media. If possible, meet with media representatives to discuss the release, tell them of the larger report which is available, and clarify what the schools are trying to do. Maintain this relationship during the course of the year with further communications about what is going on in the district.

5. Be positive and honest in presenting results. Even if the results are less than "glowing," acknowledge needs openly and indicate the plans for improvement or the steps that are already underway to correct deficiencies. Over time, have there been areas of improvement? Use this opportunity to generate parent interest in their children's educational progress. Do not attach blame to socioeconomic status for low test results.

6. Finally, request the film "Building Better Basics: The Home-School Partnership" from your area Regional Educational Media Center (REMC). This 12-minute film was designed for parents to encourage them to take an interest in their children's education. It should be useful in any parent-teacher meeting, school board meeting or other community meetings your district has planned.

"The Building Team"—School Use

The school unit is a key element in the utilization of assessment data. The school principal and her or his staff form a team which can make instructional changes most easily.

The steps listed in the previous section set the stage for the suggestions outlined below. As before, the emphasis is on having people pull together in an agreed upon direction. The suggestions are as follows:

- Establish realistic criteria by which objective attainment can be judged as acceptable, encouraging, low, or unacceptable. Staff, curriculum specialists, and administrators should all be involved in determining the criteria.

- Categorize objective attainment according to your established criteria for acceptable, encouraging, low, or unacceptable levels of attainment. (The State has established suggested criteria for categorizing objective attainment. See **The Status of Basic Skills Attainment in Michigan Public Schools,** 1978 for further information.)

• Conduct a study to determine where the MEAP objectives are currently being presented in the instructional sequence in the building. Determine if there are objectives which staff are not teaching at this time.

> **"Teachers in K-3, 4-6, and 7-9 should all be familiar with students' performance on the assessment tests."**

• Having identified objectives with low or unacceptable attainment rates, staff can then develop instructional plans or programs to address these needs. (Classroom teachers and curriculum specialists for your building should also address the needs of students not attaining objectives categorized on a building level as acceptable or encouraging.)

• Because the assessment test results reflect skills and knowledge acquired by students over time, all teachers should be aware of the test results—not just fourth, seventh, and tenth grade teachers. Teachers in K-3, 4-6, and 7-9 should all be familiar with students' performance on the assessment Tests. (The Feeder School Reports present information of interest to teachers at all levels.)

• Inservice activities should be planned to assist staff in the implementation of an objective-based instructional system.

• Review the Proportions Report to determine attainment trends. Compare these trends to the trends visible in other types of achievement results.

• Give each family the child's "Parent Pamphlet" and provide the opportunity to discuss this information with the classroom teacher or counselor.

• Individual student attainment should be documented as part of the student's cumulative achievement record.

• Additional educational experiences should be provided for those students not meeting minimal educational expectations (i.e. enrichment course-work, summer study programs, and supplemental home-study opportunities.)

• Obtain copies of the Michigan Reading Association (MRA) and the Michigan Council of Teachers of Mathematics (MCTM) monographs which offer suggestions for educators in utilizing the assessment results.*

"Where It Counts"—Classroom Use

With a minimum amount of effort, an individual teacher can begin to use MEAP results to focus attention on specific minimal skill needs of students. An excellent beginning place is the Classroom Listing Report. Other reports provided by the Program will appear more useful as you become more familiar with them as instructional tools.

> **"Be sure to give parents their copy of the Parent Pamphlet."**

The following list suggests some steps which may be used to incorporate the use of test results in your instructional planning.

• Look at the Classroom Listing Report for reading (mathematics).

*The reader should contact a member of these organizations for copies of the booklets.

- At the bottom of the page is the percentage of students in your classroom who attained each objective. Circle any objective which many of your students did not attain.

  a) Do you need to review the skills?

  b) Do you need to group some students to work on the skill?

  c) Can the students "brush up" on the skill by being reminded of it in their regular, daily work?

  d) Do you think the students have the skill and the test didn't show it?

- You should know if the tested objectives are part of the curriculum in earlier grades.

- You may need to obtain additional classroom resources to address the problem areas you find.

- You should know which objectives you and the other teachers are responsible for teaching and/or reviewing.

- Be sure to give parents their copy of the **Parent Pamphlet.** Parent cooperation in encouraging student effort can help your teaching endeavors.

If you have further questions about using your classroom's assessment results, please call an Assessment staff member at (517) 373-8393 or write to Michigan Educational Assessment Program, Michigan Department of Education, P.O. Box 30008, Lansing, Michigan 48909.

Michigan Department of Education

MEAP SUPPORT MATERIALS FOR MATHEMATICS

DECIMALS

MEANING

RESULTS OF MEAP TESTING

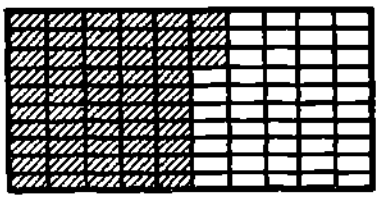
Five objectives are tested on the MEAP. Two of the objectives are tested at 7th grade and three are tested at 10th grade.

7TH GRADE MEAP

Objective 1: Identify illustrated decimal fraction.

sample test item

Choose the decimal that names the shaded part of each whole figure.



(a) .29
(b) .37
(c) .47
(d) .53

error analysis: Students did very well on this objective. Item scores ranged from 77%-86% of the students selecting the correct response.

Objective 2: Name place values of decimal fractions.

sample test item

In .923, the 3 means

(a) 3 thousand
(b) 3 thousandths
(c) 3 hundred
(d) 3 hundredths

error analysis: Item achievement ranged from 39%-43%. This is significantly above objective achievement which indicates a great deal of guessing. It appears that many students determine decimal place value by starting from the right — neglect the decimal points and add a "ths" to the whole number place value.

10TH GRADE MEAP

Objective 1: Round to the nearest whole number, tenths, or hundredths.

sample test item

100.89 rounded to the nearest tenth is:

(a) 100
(b) 101
(c) 100.8
(d) 100.9

error analysis: Achievement is above 80% on those items requesting rounding to the nearest whole number, 50% on those items requesting rounding to tenths and hundredths. On the latter items students continue to round to the nearest whole number.

Objective 2: Rename common fractions as decimal fractions.

sample test item

What decimal is equivalent to $\frac{2}{5}$?

(a) .40
(b) .25
(c) .20
(d) 2.5

error analysis: Item achievement ranged from 37%-61%. The most commonly selected foils were obtained by using the two digits from the fraction with a decimal point inserted somewhere.

Objective 3: Arrange fractions in ascending or descending order.

sample test item

Which set of fractions is in order from least to greatest?

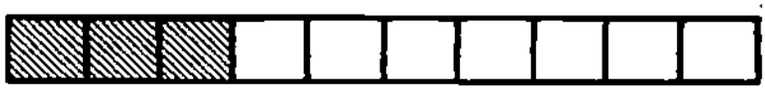
(a) 0.66, 0.64, 0.65, 0.63
(b) 0.65, 0.66, 0.64, 0.63
(c) 0.63, 0.64, 0.65, 0.66
(d) 0.63, 0.66, 0.64, 0.65

error analysis: The errors increased directly with the increase in the numbers of digits which changed, and with the introduction of nonconsecutive numbers.

DIAGNOSTIC TEST

For items 1-4, choose the decimal that names the shaded part of the figure.

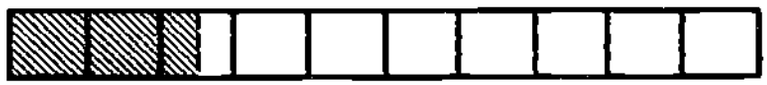
1.



1 meter

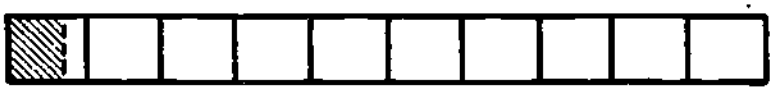
(a) 3.0
(b) 0.3
(c) 0.7
(d) 7

2.



1 meter

(a) .25
(b) .2
(c) 7.5
(d) 2.5

3. 

1 meter

(a) .7
(b) 9.3
(c) .93
(d) .07

4. 

1 meter

(a) .74
(b) .26
(c) .7
(d) 2.6

for items 5-8. choose the correct *word* answer.

5. In .2, the 2 means:
   (a) 2 ones
   (b) 2 tens
   (c) 2 tenths
   (d) 2 twos

6. In .04, the 4 means:
   (a) 4 tentha
   (b) 4 hundredths
   (c) 4 hundreds
   (d) 4 ones

7. In .673, the 3 means:
   (a) 3 hundreds
   (b) 3 tenths
   (c) 3 thousandths
   (d) 3 ones

8. In 3.527, the 2 means:
   (a) 2 tens
   (b) 2 thousandths
   (c) 2 hundredths
   (d) 2 thousands

9. 3.2 rounded to the nearest whole number is:
   (a) 3
   (b) 3.2
   (c) 4
   (d) 3.3

10. 64.8 rounded to the nearest whole number is:
    (a) 64
    (b) 64.9
    (c) 65
    (d) 64.8

11. 3.79 rounded to the nearest tenth is:
    (a) 3
    (b) 3.8
    (c) 3.70
    (d) 4

12. 2.474 rounded to the nearest hundredth is:
    (a) 2.47
    (b) 2.474
    (c) 2.5
    (d) 2

13. Which decimal is equal to $\frac{1}{2}$?
    (a) 1.2
    (b) 0.12
    (c) 0.5
    (d) 5

14. Which decimal is equal to $\frac{3}{4}$?
    (a) 0.75
    (b) 3.4
    (c) 0.34
    (d) 7.5

15. Which decimal is equal to $\frac{4}{1000}$?
    (a) 0.0004
    (b) 0.004
    (c) 0.04
    (d) 0.4

16. What is another name for $\frac{3}{5}$?
    (a) 0.60
    (b) 0.35
    (c) 3.5
    (d) .15

17. Which set of decimal fractions is in order from *least* to *greatest*?
    (a) 0.35 0.34 0.36 0.37
    (b) 0.34 0.35 0.36 0.37
    (c) 0.37 0.36 0.35 0.34
    (d) 0.36 0.37 0.34 0.35

18. Which set of decimal fractions is in order from *least* to *greatest*?
    (a) 37.8 37.9 38.0 38.1
    (b) 38.1 38.0 37.9 37.8
    (c) 37.9 38.0 37.8 38.1
    (d) 38.1 37.8 37.9 38.0

19. Which set of decimal fractions is in order from *least* to *greatest*?

(a) 3.01 2.11 2.10 2.01
(b) 2.11 3.01 2.01 2.10
(c) 2.01 3.01 2.10 2.11
(d) 2.01 2.10 2.11 3.01

20. Which set of decimal fractions is in order from *least* to *greatest*?

(a) 0.47 0.8 0.17 0.9
(b) 0.17 0.8 0.9 0.47
(c) 0.17 0.47 0.8 0.9
(d) 0.8 0.9 0.17 0.47

TEST USE AND TEACHING SUGGESTIONS

Suggestion 1. Approach the meaning of decimals through actual experiences in measurement with a meter tape or a centimeter ruler.

Suggestion 2. Develop understanding of decimal numeration through the linear model suggested above and constant reference to the "grouping of tens" principle which continues across the decimal point. Emphasize that place value relationships in decimal numeration are the same as in whole number numeration: each place value is 10 times the value of the place to its right, and $\frac{1}{10}$ the value of the place to its left. (Only the *names* appear to reverse.)

Suggestion 3. Develop the "rounding" concept from visual observation of the meter model and from the experience of *approximate* measurement.

Suggestion 4. Develop the concept of renaming initially through decimal equivalents (e.g. .5 = .50 = .500) using comparative meter-number lines.

Suggestion 5. Extend the concept of renaming common fractions to decimal fractions. Using paper folding techniques and paper strips of meter and decimeter length, fold in appropriate parts, mark, fold, observe metric measurement, record decimal numeration.

Suggestion 6.

(a) Develop the concept of order in decimals through *counting* with various metric units and subunits, writing, reading, and comparing these units and subunits on appropriately marked meter models.

(b) Repeated comparisons to counting, grouping, and order in the whole number system should facilitate this extension of the order concept.

(c) Exercises of the "more than" and "less than" type with decimal fractions should precede requiring the order sequence of more than two decimal numbers.

Items 1-4. (Identify illustrated decimal fraction.)

probable errors: Students will name the *unshaded* part.

suggestion	problem	activity
Emphasize the *shaded* part by measuring and shading in actual measurements. Become familiar with a linear model through use of meter, decimeter, etc.	 (a) 1.0 (b) 0.1 (c) 0.9 (d) 9.0	Measure objects with marked meter strips of paper. Mark and shade in the actual length of objects. Label answers with the correct decimal name.

Items 5-8. (Name the place value of decimal fractions.)

probable errors: Students will select either the whole number place value without regard to the decimal or the correct place value without the "ths".

suggestion	problem	activity
Use the meter model which demonstrates dramatically the reality of tenths, hundredths and thousandths as successively *smaller* parts of one whole unit.	In .673 the 3 means: 3 hundreds 3 tenths 3 thousandths 3 ones	• Measure many objects in meters, then decimeters, centimeters and millimeters. • The move from approximate measurement to increasingly more accurate measurement demonstrates the comparative value of these subunits. • Recording the results necessitates decimal numeration. Recording in different ways teaches equivalence: (2 dm + 3 cm) or (23 cm).

Items 9-12. (Round to the nearest whole number, tenths or hundredths.)

probable errors: Students will most likely choose the nearest *whole number* instead of the nearest tenths or hundredths as requested. Students may also select a whole number which is *not* the nearest.

suggestion	problem	activity
Use the metric linear model with its various subunits to visually recognize which is the nearest tenth, hundredth, or whole number.	Round to nearest whole number: 1.3	• Begin with a 2 meter model. • Mark location of 1 m, 2 m. • Mark location of 1.3 m. • Observe and record whether it is closer to 1 m or 2 m.
	Round to nearest tenths: .27	• Begin with a meter model marked in cm and dm. • Mark location of 2 dm and 3 dm. • Locate .27 m and observe whether it is closer to 2 dm or 3 dm.
	Round to nearest hundredths: .341	• Begin with a meter model marked in dm, cm, mm. • Mark location of 34 cm and 35 cm. • Locate .341 m and observe whether it is closer to .34 m or .35 m.

Items 13-16. (Rename common fraction as decimal fraction.)

probable errors: Students who do not recognize that the given common fraction is less than one may choose 1.2, while those who do recognize that concept but don't understand decimal place value, will choose .12.

suggestion	problem	activity
Use paper folding and comparative linear models. Limit experiences to halfs, fifths, and tenths initially. Then develop with fourths and thirds.	$\frac{1}{2} = ?$ (a) 1.2 (b) 0.12 (c) 0.5 (d) 5	Fold a paper strip marked in decimeters in half. Unfold and count the decimeters in each part. Record: $\frac{1}{2}$ of the meter = 5 dm = 5 tenths of a meter = 0.5 m.
	$\frac{1}{4} = ?$	Fold a paper strip marked in decimeters and centimeters into fourths. Unfold and count the decimeters and centimeters. Record: $\frac{1}{4}$ of the meter = 2 dm and 5 cm = 25 cm = 25 hundredths of a meter = .25 m.

Items 17-20. (Arrange decimal fractions in order from *least* to *greatest*.)

probable errors: Students will be confused by nonconsecutive numbers and by changes in more than one place value position.

suggestion	problem	activity
Use the metric model to locate, compare and count.	Teaching sequence: 1. Within tenths .3, .4, .5, .6 2. Whole number and tenths 2.6, 2.7, 2.8, 2.9, 1.8, 1.9, 2.0, 2.1 3. Tenths and hundredths .22, .23, .24, .25, .47, .48, .49, .50 4. Whole number and hundredths 1.06, 1.07, 1.08, 1.09, 6.08, 6.09, 6.10, 6.11 5. Whole number and hundredths 7.98, 7.99, 8.00, 8.01	Teach students to compare by whole number first, then by hundredths. Order by place value *first*, then *within* place value.

Reporting MEAP Results to Parents

School Preparation

I. Complete School Staff

A. Review school results, total school staff, a team approach.

B. Implement the "Model for Utilization of MEAP Test Results" to:

1. Determine if curriculum or instructional changes are needed.

2. Formulate a plan of action--short term and long term--to share with the parent(s)--not necessarily operational at the time of sharing school-wide, grade level, classroom, individual.

II. Classroom Teacher of Students Tested

A. Be familiar with what is tested, why it is tested and how the results are reported.

B. Review each student's results--highlight strengths and weaknesses for discussion with the parent(s).

C. Develop plans for needed remediation. Focus on ways to involve the parent(s), if possible.

D. Review Classroom Listing Report.

E. Select one/several priority objectives for the class and prepare list (including why these skills were selected--objective attainment rates).

F. Develop brief statement of instructional plans and goals as these relate to the selected priority objectives and other relevant information.

Reporting MEAP Results to Parents

Model A

Individual Parent/Teacher Conferences
(MDE Recommended Method of Distribution)

Goals:

1. To provide the parent(s) with a better understanding of their child's strengths and weaknesses in the basic skills of Reading and Mathematics.

2. To provide the parent(s) with a "Plan of Action" designed to address the identified weaknesses.

3. To solicit the assistance of the parent(s) in helping their child learn the skills needed.

Materials:

Classroom Listing Report (maintain confidentiality of other student's results)
Individual Student Report
Plan of Action (Class/Group/Individual)
Individualized Parent Pamphlet
MEAP Handbook
List of Priority Objectives

Time: Approximately 20-30 minutes

Participants:

1. Classroom Teacher
2. Parents

Process:

1. Give a brief overview of the MEAP test:
   a. what is tested (R & M)
   b. why the test is given
   c. how the results are reported (i.e. by specific skills/objectives)
   d. what the results mean (i.e. identification of strengths and needs)

2. Use information in the Parent Pamphlet to explain a child's specific strengths and weaknesses in skill areas tested.

3. Use Individual Student Report, only if necessary, to further explain strengths and problems.

4. Use MEAP Handbook to give examples of test items and objectives.

5. Indicate plans to remediate weaknesses (involve parent(s), if possible or desirable):
   a. indicate remediation teacher will provide in class.
   b. suggest plan of action parent can follow at home.

6. Give overview of areas of strengths and weaknesses of entire class/groups within class and related instructional plans.

7. Indicate follow-up teacher will provide to update the parent(s) on their child's progress and performance.

Reporting MEAP Results to Parents

Model B

Group PTA Meeting

Goals:

1. To provide the parent(s) with a clear understanding of MEAP--why the MEAP tests are given, what is tested and how the results are reported.

2. To discuss the overall instructional plan and achievement goals for the school and specific grade levels as they relate to the MEAP test results (and other available information, if possible).

Materials:

Film (optional): "Building Better Basics--A Home/School Partnership" (available from local REMC)
Transparencies
1. State Summary
2. District Summary
3. School Summary
4. Parent Pamphlet

Handouts
Parent Pamphlet (Individual Student's)
List of Priority Objectives for Grade Levels

Time: Approximately 1-2 hours

Participants:

1. School Instructional Staff (Principal, Teachers, Support Staff)
2. Parents

Process:

1. Ask PTA to sponsor a Parents' Night (or have school host) with staff available to meet with the individual parent(s) after a general presentation.

2. Have school principal give overview of MEAP testing program:
   a. what is tested;
   b. why it's tested; and
   c. how the results are reported (for school & district, as well as classroom and individual). (Use transparencies #1, 2 and 3.)

3. Have teachers given overview of areas of strengths and weaknesses of entire grade level using List of Priority Objectives.

4. Have teachers discuss instructional plans and goals as they relate to Priority Objectives (and other available information)

5. Show parent film.

6. Answer general questions.

7. Explain Parent Pamphlet. (Transparency #4)

8. Distribute Parent Pamphlet.

9. Have staff present (both counselors and teachers) to discuss individual student results with the parent(s) as outlined in Model A, Individual Parent/Teacher Conference.

10. Mail Parent Pamphlet to the parent(s) who did not attend, as described in Model C.

Reporting MEAP Results to Parents

Model C

Mail to the Home or Send Home with Student
(Least Desirable Method of Distribution)

Goals:

1. To provide the parent(s) with a better understanding of their child's strengths and weaknesses in the basic skills of Reading and Mathematics.

2. To communicate the overall instructional plan and achievement goals for the school and specific grade levels as they relate to the MEAP test results (and other available information, if possible).

3. To encourage the parent(s) to come to the school to discuss their child's MEAP test results and instructional plans.

Materials:

Cover Letter
Parent Pamphlet

Time: Will vary depending upon preparation involved

Participants:

1. Will vary depending upon dissemination source (teacher, counselor, principal, central office, etc.)
2. Parents of Students Tested

Process:

1. Mail or send home with child, the Parent Pamphlet
   a. Prepare letter to accompany pamphlet
      1) brief statement of what is tested and why
      2) brief summary of child's strengths and weaknesses
      3) brief statement of remediation plans
         a) to be provided by teacher in classroom; and
         b) plan of action parent can follow to assist student at home.

      4) encourage the parent(s) to arrange a meeting with the teacher/ counselor to discuss their child's MEAP test results in greater depth.

      5) Indicate what follow-up will be provided to apprise the parent(s) of their child's progress and performance.

WHAT CAN I DO TO HELP MY CHILD WITH SKILLS HE/SHE DID NOT PASS?

You should discuss your child's test results with the classroom teacher or counselor. An individual program should then be developed to aid your child in learning the skills which have not been attained. Below is a list of some practical things you can do with your child to help him/her learn the basic skills in math and reading.

- Encourage your child to attend school regularly.
- Express interest in your child's assignments.
- Designate a place and plan a time for study at home.
- Show involvement and interest in the experiences your child has in school; such interest helps to show the importance of school.
- Encourage your child to do his/her best in school.
- Ask the teacher if there are activities you could carry out at home which would strengthen skill development.

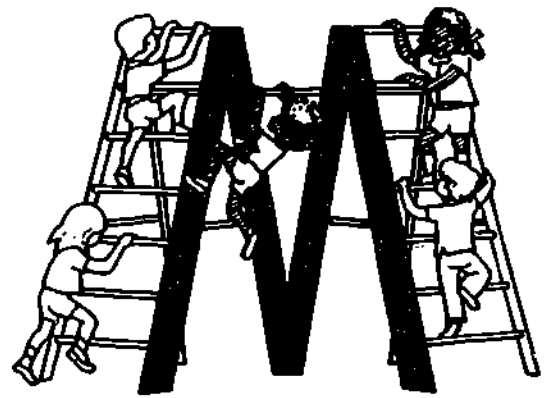
This pamphlet was written to help you better understand the Michigan assessment testing program. If you still have questions about your child's test results, please ask your child's teacher, counselor or principal for help. If you would like detailed information about the testing program, please contact Michigan Assessment Program staff at (517) 373—8393. Parent interest in the testing program helps your children, your school and education in the state.

Local School Dist. _____
Name _____
Address _____
City/State/Zip _____

A Pamphlet For . . .

PARENTS

On The Michigan Educational Assessment Program



Every educational philosophy, every teaching method, every school system has its passionate critics and equally passionate defenders.

"Quality Education" is a much discussed topic. Everyone is in favor of it, but no one knows for sure what it is. Yet, parents, citizens and educators must make decisions about schools, and accurate information is the necessary basis for good decisions.

Before 1970 there was no objective, reliable information available on the status of Michigan schools. Therefore, in 1970, the Michigan State Legislature and the State Board of Education initiated the Michigan Educational Assessment Program to provide information about education in the state.

WHERE ARE WE GOING?

If a family set out on a trip from Lansing to Detroit, but found themselves instead in Flint, they could not be said to have made progress, even though they may have had good gas mileage and many enjoyable experiences along the way. Progress is understood in relation to certain goals and objectives...with an understanding of where we are compared to where we wish to be. Thus, careful educational planning must begin with the identification of goals and objectives and an assessment of where we are now in relation to our goals and objectives.

GOALS

The Common Goals of Michigan Education were developed in 1971 by a task force composed of educators, students, and citizens. The goals deal with the areas of Citizenship and Morality, Democracy and Equal Opportunity, and Student Learning. The Common Goals are a general guide for quality education in Michigan. Basic skills goals are defined by specific minimum performance objectives.

OBJECTIVES

The development of these minimum objectives was and is a considerable undertaking. Educational specialists throughout the state developed and refined the objectives with the cooperation of parents and local board members. At the end of this process, the State Board of Education received and approved minimum objectives in Art, Communication Skills, Foreign Language, Health, Mathematics, Music, Physical Education, Pre-Primary, Science, and Social Studies. These objectives have been sent to all Michigan school districts so that they may be a resource for local program development.

MINIMUM

Of course, the performance objectives do not represent a complete curriculum. They represent some minimum basic skills which are essential to children's progress in school - from kindergarten through 9th grade. In addition, local school people design their own objectives based on the needs and abilities of the local children.

Your Child's Test Results 1979-1980 Mathematics

Student:

Grade:

SKILL AREA TESTED	# of Skills Tested	# Passed
Prenumber		
Non-Geometric Measurement		
Numeration		
Whole Number Addition, Subtraction		
Geometry		
Metrics		
Whole Number Multiplication		
Whole Number Division		
Fractions		
Decimals		
Ratio, Proportion, Percent		
Measurement		
Algebra		
Integers		
Geometric Measurement		
Probability and Statistics		

Number of math skills your child passed:
Number of math skills tested:

Your Child's Test Results 1979-1980 Reading

Student:

Grade:

SKILL AREA TESTED	# of Skills Tested	# Passed
Vocabulary Meaning		
Literal Comprehension		
Inferential Comprehension		
Study Skills		

Number of reading skills your child passed:
Number of reading skills tested:

SAMPLE OBJECTIVES AND TEST ITEMS

Math Objective: Given addition problems involving a two-digit number plus a one-digit number requiring no regrouping (carrying), the learner will find the sums.

Test Item Example: Add: 12 + 5

Answer Choices:
A 15 B 16 C 17 D 18

Reading Objective: Given a reading selection from a textbook appropriate to the third grade, the learner will match a series of words in the selection with appropriate definitions.

Test Item Example: When Jack fooled his friends, they thought he was as sly as a fox. In the sentence above, sly as a fox means:

Answer Choices:
A slow. B quiet. C tricky. D fast.

HOW DOES THE TEST HELP MY CHILD?

The test gives us information about which skills a child has learned and spots the skills in which the child needs help. The school provides extra instruction in the areas of weakness.

WHAT IS IN THE TEST?

The reading and mathematics tests measure minimum skills which a student should have learned by the time the tests are given. Each skill is tested with a set of 4 or 5 questions. If the student has no more than one wrong answer in the set, we say the skill has been attained.

WHY DOES MY CHILD NEED TO TAKE THE TEST?

The test helps you, the teachers, and your child see the minimum mathematics and reading skills which have or have not been learned. Children in Michigan are tested in the 4th, 7th, and 10th grades. The tests act as a yearly educational health check-up on Michigan education in reading and mathematics.

HOW CAN I TELL IF MY CHILD DID WELL ON THE TEST?

If a child has passed 75% or more of the skills, the child has done "acceptably well."

SCHOOL PREPARATION FOR A UTILIZATION OF MEAP TEST RESULTS WORKSHOP

I. Things to be Considered When Planning a Utilization Workshop

1. The school unit is a key element in the utilization of assessment data.
2. The emphasis is on having people pull together in an agreed upon direction.
3. Instructional changes can be made most easily when the school staff is involved in the changes.
4. Soliciting full staff participation however, is easier said than done.
5. The department has developed a MEAP test results utilization model which is adaptable to most situations, and certified MRA trainers are available to conduct workshops, upon request.
6. The MEAP utilization model can be put into operation in 3 sessions which involve from 2½ to 4 hours. Of course, it includes an uncalculated amount of individual effort.

II. Organizing a School Team

A. Size - will vary depending upon building size and/or method used to select team members.

B. Participants -
   (1) Should include at least a representative sample
   (2) If possible, the entire staff should be involved.

III. Things to be Considered in Organizing a MEAP Utilization School Team

1. Organizational structure of the school
2. Contractual agreements, as to meeting times and lengths
3. Preliminary information sessions with key support personnel (such as: administrators, department chairpersons, curriculum specialist, remedial specialist, assist principals, etc.)
4. Who will conduct meeting(s)
5. How the team membership will be determined--a) mandatory, b) voluntary, c) other
6. How many team members are needed? The school team should include at least a representative cross section of the staff (i.e., 1-administrator, 1-teacher, 1-curriculum specialist, etc.)
7. Staff-Faculty attitude toward testing--a) negative, b) positive, c) neutral, d) no knowledge
8. Brief description of proposed activity at total staff-faculty meeting.
9. Team meeting date, place and time.

IV. Materials Necessary (Provided by Requesting School)

1. Copies for each team member--a) School Summary, b) District Summary, c) State Summary
2. Classroom Listing Report for 4th, 7th and 10th grade teachers
3. MEAP Handbooks (for reference)

A MODEL FOR

UTILIZATION OF MEAP TEST RESULTS

Session I

Examining Results and Identifying Present Needs

Goals:

In terms of basic skills attainment in Reading and Math:

1. School teams will be able to read, understand and interpret MEAP test results forms.

2. School teams will be able to determine where the school stands in relation to their district and state.

3. School teams will be able to make a realistic criterion selection.

4. School teams will be able to identify school problem areas and determine present needs.

Materials: (Copies for Everyone)

School Summary Report
District Summary Report
State Summary Report

Time:

1-2 hours.

Group Size:

1. Will vary, dependent upon: staff size, method of selection.

2. Should include:
   (a) Total instructional staff (if possible).
   (b) Principal and 1 Teacher per grade (minimum).
   (c) A large Building Team could be subgrouped (K-3, 4-6, 7-9).

Process:

1. Introduce activity briefly, explaining goals of the activity. (These could be written on a chalkboard, on transparencies or on news print.)
2. Review types, format and content of report forms.
3. Compare to District Summary
4. Compare to State Summary

} for general information and to establish a frame of reference, not to establish needs in comparative terms.

5. Explain criteria for school attainment of objectivea. While going through each criterion:
   a. 80% "traditional" CRT criterion. Remember minimum objectives.
   b. 75% atate criterion for "low needs." Before aerioua work ia begun on the School Summary, atate and district attainment levels might be compared and briefly diacussed.
   c. District Summary Report (transparency uaeful).
   d. State attainment levels (transparency useful).
   e. Other possibilitiea--95%, 90%, etc.
   f. Expectationa important.

   Have participanta look at their School Summaries in terms of each criterion.
6. Remind the school teams that selection of a criterion for attainment impliea follow up action on those not attained at criterion level. Therefore realiatic criteria to be established.
   a. One criterion may be necesaary for long term action.
   b. A aecond criterion may be neceasary for short term activities.
7. The building team should select a working criterion which leaves a number of objectivea on which principal and teachers will be willing to put special attention in the short term.
8. List objectives falling at or below criterion level.
9. Group into skill areas.
10. Deaignate short and long term goala
11. Make arrangements for the preaent needs of 4th, 7th and 10th graders, aa well aa, the ahort and long term criterion levela to be aummarized and copiea made for the next meeting.

A MODEL FOR
UTILIZATION OF MEAP TEST RESULTS

Session II
Curriculum and Instructional Planning

Goals:

1. School teams will examine present school needs of 4th, 7th, and 10th graders, summarized from previous meeting.
2. Teachers will complete objective matrix to determine present status of building-wide curriculum and instructional program.
3. Building teams will identify which objectives are school-wide priority and which are individual classroom priority.

Materials: (copies for everyone)

Summary of Present Needs and School Criterion Levels

Blank matrix sheets for each participant (matrix for reproduction)

Classroom Listing Reports for 4th, 7th, and 10th grade teachers

MEAP Handbook (optional)

Time:

1-2 hours

Group Size:

Building Teams

Process:

1. Introduce activity briefly, explaining goals of the activity.
2. a. 4th, 7th, and 10th grade teachers examine Classroom Listing Report to find priority objectives.

   b. All other teachers complete objective matrix. Matrix multiple uses: 1)Hours per year taught 2)Prioritize 1-5 3)Introduce/teach/review 4)Reference text book, etc. There should be a correlation between time spent and attainment. Collect and make composite of results, examples: record all times and average each grade, make a composite for each grade, etc. Be sure to differenciate between teach/learn.
3. Chairperson collects objective matrices and assigns responsibility of completion and reproducing for next meeting.
4. Determine whether or not 4th, 7th, and 10th grade classroom priorities are the same as the school priorities.
5. If necessary, building team examines MEAP Handbook to determine whether or not students have appropriate skills to attain the objectives as measured by the specific items.
6. A decision must be made as to the allocation of special attention to be given to objectives in the school and in the classroom.
7. The building team may want to distribute the objectives across grade levels.

8. Team assignment: In preparation for the next meeting, principal and teachers will collect resource information on priority objectives; e.g. what textbook materials, supplementary materials, games, etc. are available for focused attention. Anything new, unique, or different on any priority objective.

9. The individual matrices must be collected, compiled into a composite, and copies of the composite picture made for each team member for the next meeting. This task should be definitely assigned. Separate composits for grades K-3, 4-6, or 7-9 may be helpful in schools with large grade spans.

A MODEL FOR
UTILIZATION OF MEAP TEST RESULTS

Session III
Decision Making - Setting Goals

Goals:

1. Building team will examine objective matrix composite to determine teaching priority devoted to various objectives.
2. Building team will make decision to change (or not change) school curriculum or instruction program.
3. Building team will form a plan of action for work on school and classroom objective priorities--short term and long term.
4. Building team will share findings about instructional sources and methods.
5. Building team will determine the need for "outside" assistance.

Materials:

Composite objectives matrix(s) (copies for everyone)

School Summary Reports (from Session I)

Time:

1 hour

Group Size:

Building team

Process:

1. Introduce activity briefly, explain goals.
2. Hand out the objective matrix(s), and note objectives which have high priority and low priority, in terms of amount of instructional time allocated, etc.
3. Have building team examine objectives previously selected as short term and long term priorities.
4. Building team should determine whether or not a change should be made in the instructional priorities, based on assessment results.
5. Building team should decide which objectives will be given special attention immediately with short term remediation goals.
6. Building team should decide which objectives will be given special attention as long term curriculum changes and instructional program changes.
7. Building team should share information about materials and sources. Are all priority objectives covered? (List where and how.) Are more resources needed?
8. School teams should know whether or not they need "outside" assistance and what changes in curriculum materials and so forth are needed.
9. Develop a plan to "evaluate" effectiveness of planned changes.
10. A timeline should be developed.
11. Follow-up reporting, as needed, should also be put on a timeline.

Teacher Name and Grade

OBJECTIVES
Grade 4 Reading Objectives

1.	Match words with definitions											
2.	Indicate phrases with same meanings											
3.	Choose word appropriate to blank spaces (Cloze procedure)											
4.	Identify method of arranging data											
5.	Alphabetize words through first three letters											
6.	Indicate factual selections											
7.	Indicate fictional selections											
8.	Indicate author's purpose											
9.	Indicate title most appropriate for selection											
10.	Indicate pictures best describing main idea in selection											
11.	Choose best summary of a selection											
12.	Match quotation from story with speaker											
13.	Choose answer best describing how character feels in story											
14.	Choose phrase best describing work in figurative language											
15.	Match causes with effects											
16.	Choose most appropriate conclusion for a story											
17.	Answer locational question about reference sources											
18.	Answer locational question about newspapers											
19.	Select meanings, generalizations, conclusions not expressed											

FEEDER SCHOOL REPORTS

I. Definition and Purposes

School districts may choose to have their 7th or 10th grade assessment results summarized by feeder school. A feeder school is considered to be any lower grade school that "feeds" students into the school where students are being tested. This option must be selected and the proper coding performed before testing occurs.

The Feeder School Report is a summary of students grouped according to the 4th or 7th grade school they attended. All Feeder School Reports are returned by the Scoring Service in the DISTRICT folder. They are provided at no cost to the district. The reports are to be used by the district and the feeder schools.

The Feeder School Reports are not intended for use by the schools in which the students are currently receiving instruction. These schools, instead, should use their School Summary Report which is the composite of all students tested, regardless of the feeder school attended. The Feeder School Reports are printed on the same form as the District and School Summary Reports.

II. Usage Suggestions

A. District Level

1. The district has access to all Feeder School Reports.

2. The district can use the Feeder School Reports to compare the effects of different types of input, used in different schools, upon student attainment in the basic skills.

    a. Basic Textbooks

    b. Teaching Styles

        (1) Open Classroom vs. Self-Contained

        (2) Classroom Teacher vs. Subject Area Specialist

        (3) Ungraded vs. Traditional

    c. Support Materials

    d. Curriculum

    e. Instructional Programs

        (1) Traditional Math vs. New Math

        (2) Phonics Approach vs. Word Recognition Approach

B. Feeder School Level

1. The Feeder School Reports give the feeder school information on how well the 4-6th or 7-9th grade curriculum and instructional programs are meeting the basic skills needs of their students.

2. The Feeder School Report provides information to assist in the decision making process.

   a. What strengths/weaknesses can be identified?

   b. Should something be changed?

      (1) Emphasis

      (2) Curriculum

      (3) Instructional Program

      (4) Textbook

      (5) Teaching Methods and/or Techniques

      (6) Priorities

III. Cautions

1. Feeder School Reports should not be used for teacher evaluation since the results reflect an accumulation of skills attained over several years with different teachers.

2. Do not compare 7th grade results with 4th grade Feeder School Results, nor 10th grade results with 7th grade Feeder School Results.

3. Rationale

   a. Current grade level reports and Feeder School Reports are based upon different tests and different student populations.

   b. The test results of different grades cannot be equated. Although each test may measure the same concept, each grade level measures different objectives and different skills.