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ABSTRACT

This paper presents findings of an analysis of the 1989-90 mathematics and reading portions of the Michigan Educational Assessment Program (MEAP) and of perceptions of special education teachers participating in the MEAP. Noted are the purpose of the MEAP and exclusion for students who: (1) receive more than half their reading/English instruction through special education; or (2) are non-English speaking, come from non-English speaking countries and have been enrolled in school in the United States for less than 1 year. Comparative information by disability category of the approximately 36,000 special education students (21 percent of the total number of such students) participating are presented in tabular form. Test results for these students are summarized by grade and disability and compared to general education students' results. It is noted that, overall, speech and language impaired students outperformed all other categories followed by students with hearing impairments, visual impairments, and emotional disturbances, respectively. The survey of 368 special education teachers indicated that teachers believed that students with autism, educable mental retardation, severe multiple impairments, severe mental impairments, and trainable mental retardation should not participate in the MEAP. Analysis also indicated that special education teachers tended not to use students' MEAP results. Appended are the exclusion criteria, standards for test setting, listings of special education personnel, the MEAP use questionnaire, and 10 references. (DB)

SPECIAL EDUCATION

AND THE

MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM (MEAP)

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Introduction

The purpose of this paper is to present the findings derived from an analysis of the 1989-90 mathematics and reading portions of the Michigan Educational Assessment Program (MEAP), and the perceptions of special education teachers toward their students participating in the MEAP.

"The purpose of the Michigan Educational Assessment Program (MEAP) is: to provide information on the status and progress of Michigan basic skills education to the State Board of Education, the Executive Office, the Legislature, local educators, teachers, students, and parents" (Michigan Educational Assessment Program Handbook, 1989, pg. 15). MEAP is initiated by the State Board of Education, supported by the Governor and funded by the Legislature (The Michigan State Board of Education, 1989).

The first MEAP tests were given during the 1969-70 school year in the areas of reading and mathematics. Over the succeeding years the test has been revised and the audience to be tested has been expanded. Each fall, fourth, seventh and tenth grade public school students take the reading and mathematics tests. The science test is given at this same time to fifth, eighth and eleventh grade students in public and non-public schools. The department establishes a three week testing period each fall. Four weeks prior to the beginning of the test period, the test booklets and related information are sent to the schools.

Who Participates?

Any student who attends a Michigan public or non-public school is entitled to participate in the MEAP testing process. Listed in Appendix A is the detailed information relating to student exclusion and the test setting. A special education student could have been excluded if the student was found eligible for special education through an IEP and received 51% or more of his or her reading/English instruction per day through Special Education programs and services.

If a student participates in the assessment tests and their score sheets are returned, their scores are treated as any other score that is received by the contracted vendor.

Related Literature

A literature search was conducted in the Educational Resources Information Center (ERIC) database, Resources in Vocational Education (RIVE) database and Dissertation Abstracts International database. The abstracts of the identified documents were reviewed to determine their relevance to this study. One document was found to specifically address this study. This document, "The Appropriateness of the Criteria for Inclusion of Special Education Students in the Michigan Educational Assessment Program at the Fourth Grade Level" (Shinsky, 1983), was secured from the author, John Shinsky, for review.

In addition to the database searches, the researchers consulted with individuals knowledgeable in the area of MEAP, Special Education and Special Education evaluation. One additional document, "Performance of Selected Categories of Special Education Students on the Fourth Grade Reading and Mathematics Test of the Michigan Educational Assessment Program," was identified for review (Ingham Intermediate School District, 1985).

Both of these studies reached the following conclusions:

* students of different handicapping categories score differently on the MEAP reading and math tests

* the MEAP was most appropriate for individuals in the Hearing Impairment (HI), Speech and Language Impairment (SLI), Physically or Otherwise Health Impaired (POHI), and Visual Impairment (VI) categories. Students who were categorized as being Learning Disabled (LD) and Emotionally Impaired (EI) may also find the MEAP test as appropriate

* students with higher levels of participation in general education score higher on the respective MEAP tests.

Although the other documents identified by the searches did not deal specifically with Michigan, they were reviewed to gain insight into potential uses of assessment data.

Limitations of the Study

This study presents information that is generalized to the students that participated in the 1989-90 MEAP and the special education personnel in approval areas listed in Appendix B for the State of Michigan. No further generalization should be made. The teacher respondent portion of the study is further limited to the extent that the respondents completed their questionnaire at a time and place of their own choosing.

Special Education Student Performance on the MEAP

During the 1989-90 school year, there were approximately 169,000 Special Education students in the state. Of this number, 154,000 were in categories that are identified on the MEAP (see Table 1). Although grade levels of special education students are not known, an estimate of the number of special education students in their respective grade levels for MEAP impairment categories was obtained by using the average age of nine for fourth grade, twelve for seventh grade, and fifteen for tenth grade. The respective special education student totals for these grades are 13,873 fourth graders, 11,950 seventh graders, and 10,292 tenth graders.

TABLE 1
1989-90 Student Count

	Number	Percent of Total*1
All Students (Fourth Friday)	1,567,092	100
General Education	1,398,392	89
Special Education (Special Education Unrevised Count)	168,700	11
Special Education (Categories for MEAP)	153,999	10
Estimated Special Education (Available for MEAP)	36,115	

MEAP Categories	Number	Percent of Total*2	Number	Percent of Total *3 In MEAP Grades
Educable Mentally Impaired (EMI)	13,957	9.1	3,067	8.5
Emotionally Impaired (EI)	19,310	12.5	5,348	14.8
Speech and Language Impaired (SLI)	42,131	27.4	6,582	18.2
Physically & Otherwise Health Impaired (POHI)	5,755	3.7	818	2.3
Visually Impaired (VI)	906	.6	163	.5
Learning Disabled (LD)	69,069	44.8	19,568	54.2
Hearing Impaired (HI)	2,871	1.9	569	1.5

*1N = 1,567,092
*2 N = 153,999
*3 N = 36,115

Presented in Table 2 are the average math and reading scores for fourth grade students. The number of special education students participating at the fourth grade is less than two percent of the total number of students at the fourth grade level and seventeen percent of potential fourth grade special education students.

TABLE 2
Fourth Grade Special Education Student Performance on the 1989-90 MEAP Mathematics & Reading

Group	Number	%	Average Math Score	sd	Average Reading Score	sd
All Students	113,348		25.04	3.75	595.65	56.48
General Education	111,171	98	25.10	3.68	597.09	51.70
Special Education	2,177	2	22.01	5.60	522.47	155.51
		%*				
EMI	24	1.1	18.63	7.27	527.21	119.19
EI	217	10.0	21.92	5.96	548.72	122.59
SLI	425	19.5	25.07	3.8	593.03	52.22
POHI	62	2.8	20.00	6.92	557.34	44.02
VI	19	.9	22.84	6.57	561.00	144.61
LD	1,402	64.4	21.20	5.58	493.91	176.76
HI	28	1.3	23.9	3.62	570.54	41.18

%* Following percentages based on N = 2,177

Special education students as a group scored lower on the mathematics and reading portion of the MEAP when compared to general education students. Within the group of fourth grade special education students, Speech & Language Impaired (SLI) students outperformed all other impairment categories. On both mathematics and reading, this group was followed by Hearing Impaired (HI), Visually Impaired (VI), and Emotionally Impaired (EI).

The results for the seventh grade special education students are similar to the fourth grade results (see Table 3). The number of special education students participating in the MEAP at this grade level is two percent of the total number of students and twenty percent of the potential number of seventh grade special education students in the seven MEAP identified impairment categories.

TABLE 3
Seventh Grade Special Education Student Performance on the 1989-90 MEAP Mathematics & Reading

Group	Number	%	Average Math Score	sd	Average Reading Score	sd
All Students	107,403		23.17	4.84	588.31	52.82
General Education	105,054	97.8	23.30	4.72	589.60	49.81
Special Education	2,349	2.2	17.39	6.47	530.52	114.99
		%*				
EMI	43	1.8	10.86	5.25	429.23	208.56
EI	417	17.8	17.42	6.87	532.41	123.34
SLI	83	3.5	21.01	5.65	559.21	73.77
POHI	35	1.5	19.03	7.79	575.43	45.87
VI	16	.7	21.81	4.15	591.63	51.36
LD	1,723	73.3	17.23	6.29	529.17	112.03
HI	32	1.4	20.91	5.06	560.44	39.17

%* Following percentages based on N = 2,349

Special education students in the seventh grade as a group scored lower on the mathematics and reading portion of the MEAP when compared to general education students. When taken as an intact group, Visually Impaired, Speech & Language Impaired, and Hearing Impaired students scored highest on the mathematics portion of the MEAP. The results of the reading portion reveal that Visually Impaired, Physically & Otherwise Health Impaired (POHI), Hearing Impaired, and Speech & Language Impaired scored higher than the other impairment categories.

The final grade included in the analysis was the tenth. In a similar pattern, there were less than two percent of all tenth grade participants having a special education impairment. The number of tenth grade special education MEAP participants is approximately one percent of the total number of special education students and nineteen percent of the potential number of tenth grade special education students.

The performance of the special education students followed a similar pattern as the fourth and seventh grades (see Table 4). Special education students tended to score lower than general education students. Within the special education group, Speech & Language Impaired, Hearing Impaired, Physically & Otherwise Health Impaired, and Visually Impaired outperformed all other impairment categories.

TABLE 4
Tenth Grade Special Education Student Performance on the 1989-90 MEAP Mathematics & Reading

Group	Number	%	Average Math Score	sd	Average Reading Score	sd
All Students	102,253		22.63	6.16	587.34	61.58
General Education	100,255	98	22.78	6.03	588.29	60.78
Special Education	1,998	2	15.06	7.48	539.53	80.05
		%*				
EMI	48	2.4	8.00	4.83	517.65	80.06
EI	393	19.6	15.78	7.82	546.35	81.86
SLI	22	1.1	20.55	6.52	564.73	35.03
POHI	47	2.4	19.15	8.17	553.00	100.24
VI	18	.9	12.94	8.18	555.17	33.45
LD	1,434	71.8	14.80	7.21	537.44	77.61
HI	36	1.8	19.50	7.65	536.39	137.00

%* Following percentages based on N = 1,998

Special Education Personnel Perceptions

Population and Sample

The population of interest was composed of special education teachers, teacher consultants, and support personnel. A panel of experts knowledgeable of Michigan areas of approval were used to select the most appropriate audience to receive the survey. Located in Appendix B are the areas of approval that were used to derive the population for the study. A proportional stratified random sample of these individuals was drawn to participate in the study. The individuals were selected by an SPSS-X sampling routine from the current special education personnel dataset provided by Special Education Services.

Instrumentation

Statements included in the survey instrument were based on information gathered from a literature review, personal correspondence with individuals who possess expertise in this area, and a panel of experts. The developed statements were combined with an existing instrument using the same population. The questionnaire was developed according to Dillman (1978).

Data Collection

Data were collected through a mailed questionnaire. The initial mailing consisted of a cover letter indicating the purpose of the study and a request for the individual to participate, the questionnaire, and a self-addressed, stamped envelope for them to return the survey.

Two weeks after the initial mail-out, a second packet was sent to those who had not responded. Non-respondent follow-up began the fourth week after the initial mail-out. Data collection ended after the sixth week.

Seventy percent (368) of the individuals responded to the survey. The respondents were grouped according to the length of time from the initial mailout until the questionnaire was received. Four response groups were identified: early, middle, late, and non-response. One-way analysis of variance indicated no significant differences between the responses of these response groups and their use of their students' MEAP results or the degree to which eleven impairment categories should participate in the MEAP. Based upon these findings, all data were pooled together for further analysis.

Validity and Reliability

Content (face) validity of the data collection instruments was established by a panel of experts. The questions that measured the perceptions of special education personnel toward their use of their students' MEAP results had a standardized Cronbach's Alpha reliability coefficient of .99.

FINDINGS

Who Should Participate

Presented in Table 5 are the teacher perceptions of the degree to which the various special education impairment categories should participate in the MEAP. The values could range from one (1), which means complete inclusion, to six (6), which means complete exclusion. The midpoint (neutral) value would be 3.5. Mean scores less than 3.5 are interpreted as including the impairment category in the MEAP. Mean scores greater than 3.5 are interpreted as excluding the impairment category from participating in the MEAP.

TABLE 5
Special Education Teachers' Perception Toward Impairment Categories Participation in the Michigan Educational Assessment Program

Impairment Category	$\bar{x}$	sd	mdn	mode	f	% of Response N=368
Autism Impaired (AI)	3.97	1.9	4	6	203	55.2
Emotionally Impaired (EI)	2.20	1.5	2	1	250	68.0
Educable Mentally Impaired (EMI)	3.76	1.9	4	6	246	66.8
Hearing Impaired (HI)	2.26	1.6	2	1	231	62.8
Learning Disabled (LD)	2.30	1.5	2	1	255	69.3
Physically or Otherwise Health Impaired (POHI)	2.24	1.6	2	1	238	64.7
Severally Multiply Impaired (SXI)	4.91	1.7	6	6	220	59.8
Speech & Language Impaired (SLI)	3.25	2.0	3	1	220	59.8
Severely Mentally Impaired (SMI)	5.18	1.6	6	6	225	61.1
Trainable Mentally Impaired (TMI)	4.92	1.7	6	6	229	62.2
Visually Impaired (VI)	2.58	1.9	2	1	220	59.8

Special education teachers generally believed that emotionally impaired, hearing impaired, learning disabled, physically or otherwise health impaired, speech and language impaired, and visually impaired should participate in the MEAP. The teachers were in general agreement among each other as illustrated by the standard deviation, median and modal scores.

In general, these teachers believed that autism impaired (AI), educable mentally impaired (EMI), severely multiply impaired (SXI), severely mentally impaired (SMI), and trainable mentally impaired (TMI) should not participate in the MEAP.

Exclusion of Special Education Students

Only students who are in either the 4th, 5th, 7th, 8th, 10th, or 11th grades participate in the reading and mathematics or science portion of the MEAP. Two hundred thirty-one (231) of the responding special education teachers indicated they had students in at least one of these grades. Since these teachers had students that were eligible to participate in the MEAP and would most likely use MEAP results, several additional questions were asked of these 231 teachers. Twenty percent of the teachers indicated that none of their students were excluded from the MEAP, twenty-two percent did not

know, and three percent of the teachers did not respond to the question. The remaining fifty-five percent of the teachers indicated that they had students who were excluded. The percentage breakdown of student exclusion is presented in Table 6.

TABLE 6
Percent of Special Education Student Exclusion from MEAP Participation

Percent Exclusion	f	%
None	46	19.9
1-20	23	10.0
21-40	9	3.9
41-60	6	2.6
61-80	14	6.1
81-100	75	32.4
Unknown	51	22.1
Missing	7	3.0
TOTAL	231	100.0

When asked why their students were excluded, the majority of the teachers indicated that either their students met the exclusion criteria, they didn't know, or that administrative staff decided to exclude the students (see Table 7).

TABLE 7
Percent of Special Education Student Exclusion From MEAP Participation

Reason for Exclusion	f	%*
Students met exclusion criteria	82	36.1
Special Education Administration	24	10.6
Non-Special Education Administration	37	16.3
Special Education Instructional Staff	24	10.6
Parents Request	3	1.3
Student Refusal	1	.4
Unknown	46	20.3
Other	10	4.4
Total	227	

*Percentage based on valid percent. Missing data = 58 (25.1%).

Use of MEAP Scores

In addition to the questions about exclusion, those teachers with students eligible to participate in the MEAP were asked six questions about their use of their students MEAP results (see Appendix C). These questions comprised the 'MEAP use' attitudinal domain (Cronbach's alpha = .99) and could range from strongly disagree (6) to strongly agree (24). A calculated mean score of 12.3 (sd=4.55), median of 12 and a mode of 6 are all below the scale midpoint value of 15 and indicates that the special education teachers tend not to use their students' MEAP results.

Summary

The number of special education students that participate in the MEAP appears to be a small percentage of the total number of the special education students. For these that do participate, their scores tend to be lower than general education students. When special education students are taken as an intact group, students with speech and language impairments, visual impairments, and hearing impairments outperformed the other impairment categories.

Twenty percent of the teachers indicated that none of their students were excluded while fifty-five percent indicated that some of their students were excluded. The main reasons for excluding these students were the meeting of exclusion criteria or administrative staff decision. As a whole, special education teachers tended not to use their students' MEAP results.

When asked which impairment categories should participate in the MEAP the teachers responded that Emotionally Impaired, Hearing Impaired, Physically & Otherwise Health Impaired, Speech & Language Impaired, and Visually Impaired should participate and that Autism Impaired, Educable Mentally Impaired, Severally Multiply Impaired, and Trainable Mentally Impaired should be excluded.

APPENDIX A

Students To Be Excluded

A student may be excluded from taking the Assessment tests only in two very specific instances:

1) The student has been found eligible for special education through an IEP *and* receives, during the current school year prior to October 20, 1989, 51% or more of his or her reading/English instruction per day through Special Education Programs and Services. Note: Mathematics and other content area instruction is not considered in this exclusion criteria. This may include students in all special education categories who are too physically, mentally, or emotionally impaired* to manage a testing situation.

2) The student is a non-English speaking student from a traditionally non-English speaking country and has been enrolled in a school in the United States for less than one year.

School Coordinators are responsible for reporting to the District Coordinator the total number of students enrolled, the number tested, and the number excluded from testing in their building by gridding these numbers on the School and Grade Identification Sheet. Care should be taken to enter these numbers accurately because these are the figures used to prepare the Test Exception Report sent to districts in the spring.

In addition, **each School Coordinator will be responsible for completing an Excluded Students Report.** The report requires recording the names of students excluded from MEAP testing, and gridding applicable factor responses for each student listed. A sample of the Excluded Students Report is shown near the back of this manual. Note: This is a machine-scannable document which contains specific completion instructions.

*Large print and Braille editions of the reading, mathematics and science tests are available from the Library of Michigan Services for the Blind and Physically Handicapped. Notify your district coordinator (before September 1) if these testing materials are needed in your school.

Test Setting

The tests may be given in the regular classroom or other group setting. Arrangements for rooms and seating should be completed well in advance of administering the tests. The Michigan Department of Education strongly recommends that testing take place in small groups no larger than regular classroom sizes. If it is planned to have more than thirty-five students in one room, the Assessment Administrator should have the assistance of a proctor(s). The proctor can help in distributing and collecting the materials, in ensuring that the students are on the right page and marking their responses properly, and in answering questions about the directions.

If a student who is receiving services in a Special Education program is to be tested, he/she may be tested by the Special Education teacher in that classroom to minimize the effects of testing. While attempting to maintain a standard procedure for test administration, the length and scheduling of test sessions may be adapted to the needs of individual students.

It is suggested that, if possible, it would be to the students' advantage for the tests to be administered by the person responsible for instruction in the subject area being tested. Additional information on arrangements for testing is in the *Assessment Administration Manual.*

Source: Michigan Educational Assessment Plan School Coordinator's Manual. Michigan State Board of Education. Fall 1989.

APPENDIX B

Instructional Personnel

Educable Mentally Impaired
Trainable Mentally Impaired
Severely Mentally Impaired
Emotionally Impaired
Learning Disabled
Hearing Impaired
Visually Impaired
Physically & Otherwise Health Impaired
Severely Multiply Impaired
Preprimary Impaired
Speech/Language Impaired
Autistic Impaired
Resource Room

Teacher Consultant Personnel

Mentally Impaired
Emotionally Impaired
Learning Disabled
Hearing Impaired
Visually Impaired
Physically & Otherwise Health Impaired
Preprimary Home Program/Ancillary Service Staff
Homebound/Hospitalized
Teacher of Speech/Language Impaired Nonclassroom Program
Physical Education for the Handicapped

Special Education Support Personnel

Curriculum Resource Consultant
Occupational Therapist
Physical Therapist
Registered Music Therapist
Orientation and Mobility Specialist
Registered Recreational Therapist
Work Study Coordinator
Registered Art Therapist

APPENDIX C

I review my special education students' MEAP results.

I help parents interpret their child's MEAP scores.

I help students interpret their MEAP scores.

I use the students' MEAP results as a diagnostic tool.

I use the students' MEAP results as a part of the IEP process.

The individual student's MEAP results are useful to me.

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