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RELEASED
**REPORT OF THE
COMPTROLLER GENERAL
OF THE UNITED STATES**

**Evaluation Of The
Migrant Student
Record Transfer System**

Office of Education
Department of Health, Education,
and Welfare

This report points out that the Migrant Student Record Transfer System provides a more reliable basis for allocating migrant program funds under title I of the Elementary and Secondary Education Act of 1965, as amended, than did the previously used method. The report also shows that the Office of Education did not provide funding for certain migrant children in fiscal year 1975, though required by the Education Amendments of 1974.

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-164031(1)

af
The Honorable Albert H. Quie
House of Representatives

Dear Mr. Quie:

This is our report on the Migrant Student Record Transfer System which is funded under title I of the Elementary and Secondary Education Act of 1965, as amended. Title I is administered by the Office of Education, Department of Health, Education, and Welfare.

The report was prepared pursuant to your request of August 1, 1974. Informal comments were obtained from agency officials and incorporated herein. Copies of the report will be provided to the Secretary of Health, Education, and Welfare 2 days after the date of the report.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Thomas R. Atkate".

Comptroller General
of the United States

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ABBREVIATIONS

GAO	General Accounting Office
HEW	Department of Health, Education, and Welfare
OE	Office of Education

COMPTROLLER GENERAL'S
REPORT TO THE
HONORABLE ALBERT H. QUIE
HOUSE OF REPRESENTATIVES

EVALUATION OF THE MIGRANT
STUDENT RECORD TRANSFER
SYSTEM

Office of Education
Department of Health,
Education, and Welfare

D I G E S T

GAO evaluated the adequacy of the Migrant Student Record Transfer System as a basis for allocating migrant program funds under title I of the Elementary and Secondary Education Act of 1965. The Arkansas State Department of Education operates the system under contract with HEW's Office of Education. (See p. 1.)

The Education Amendments of 1974 provide that, in determining the number of migrant children on which allocations to States are based, the Office of Education should use statistics generated by the system or another more reliable method.

In November 1974 it approved the use of the system, primarily because:

--Department of Labor data, which had been used in the past, was not accurate. (See p. 4.)

--A validation study of the system, completed in March 1974, indicated that it was more accurate. (See p. 5.)

Comparing the methodology used to derive estimates from Labor's data with that used for the system, GAO found the latter provides a more reliable basis for estimating migrant program allocations. The accuracy of the system, however, has not been established because the validation study did not provide an adequate basis for assessing it.

Allocations for title I migrant programs for fiscal year 1975 totaled about \$92 million. Using the system data resulted

in 15 States receiving about \$13 million more than they would have received had Labor's data been used. (See p. 12.)

The Education Amendments of 1974 provide that, in determining title I migrant allocations, the Office is to count migratory children of migratory fishermen and formerly migratory children. The latter are children who have ceased migrating but who, with the concurrence of their parents, are still eligible for program benefits up to 5 years.

According to the Office, migratory children of migratory fishermen and formerly migratory children were not counted for fiscal year 1975 because accurate estimates of their numbers and locations were not available.

The Office did have current estimates, however, which officials believed were conservative. These estimates showed a total of 275,000 formerly migratory children and 12,000 migratory children of migratory fishermen. (See pp. 13 and 15.)

GAO concluded that the Office should have included some estimate of the number of these migrants in the funding base for fiscal year 1975. For the fiscal year 1976 migrant program allocations, the Office did provide an estimate.

CHAPTER 1

INTRODUCTION

At the request of Congressman Albert H. Quie, we have reviewed selected aspects of the Migrant Student Record Transfer System. Mr. Quie asked us to determine the system's accuracy and efficiency, the degree of participation in the system, and other relevant information.

We particularly looked into the use of the system for determining the number of migratory children upon which fund allocations to the States and the District of Columbia ^{1/} are based under title I of the Elementary and Secondary Education Act of 1965, as amended (20 U.S.C. 241b). Under title I, grants are made to the States for programs and projects to meet the special educational needs of migratory children of migratory agricultural workers and migratory fishermen.

A BRIEF HISTORY OF THE SYSTEM

The Migrant Student Record Transfer System is a national automated telecommunication system which provides academic and other information on migrant children to participating schools on request. The system was developed to satisfy the need for providing timely academic and health information on migrant children to schools the children enter as they migrate. Previously, the school and health records of migrant children often arrived too late to be of any use to teachers and school nurses in the placement and health care of these children.

In fiscal year 1975, about 8,800 schools in 48 States had access to the national data bank through 140 computer terminals strategically located throughout the country. The data bank--which has on file the records of more than 500,000 migrant students--is located in Little Rock, Arkansas, where the system is maintained and operated by the Arkansas State Department of Education under contract to the Department of Health, Education, and Welfare's (HEW's) Office of Education (OE).

Essentially the system works as follows:

1. The State or local education agency recruits and enrolls a child in a local migrant education program.

^{1/}For allocation purposes the District of Columbia is treated as a State.

2. Key personal data on the child and academic and health data, if available, is transmitted to a terminal operator by telephone or mail.
3. The terminal operator transforms the information into a punched paper tape and transmits it to the national data bank in Little Rock via a teletype terminal.
4. If data on the child is already recorded in the system, his record is extracted from the data base and forwarded by mail to the school.
5. If it is determined that the child is being enrolled for the first time, he is assigned a permanent student number and the information is stored in the computer data base.
6. When the child moves on, the local education agency updates his academic and health data and he is withdrawn from the local program.
7. The updated information is transmitted to Little Rock via the terminal operator.
8. When the child enrolls in a different school, the cycle is repeated.

The system became fully operational in fiscal year 1972. Costs are covered under an arrangement using title I funds whereby the States provide a portion of their allocation for the migrant program to the Commissioner of Education for operating the system. Through fiscal year 1974, an average of \$1.4 million has been spent annually for developing and operating the system.

Impact of the Education Amendments of 1974

The Education Amendments of 1974 (Public Law 93-380, enacted August 21, 1974) amended title I to provide that in determining the number of migrant children on which allocations to the States are based:

"* * * the Commissioner [of Education] shall use statistics made available by the migrant student record transfer system or such other system as he may determine most accurately and fully reflects the actual number of migrant students."

Before the 1974 amendments were enacted, title I migrant funds were allocated to States on the basis of the number of (1) migratory children, aged 5 to 17, whose parents were migratory agricultural workers and who resided in the States full time and (2) the full-time equivalent of such children, who resided there part time. The amendments expanded coverage for allocation purposes to include migratory children of migratory fishermen and formerly migratory children. The latter children are those who have not migrated for at least a year but who, with the concurrence of their parents, are still deemed to be migrants and are eligible for title I benefits for up to 5 years after they cease migrating.

The 1974 amendments also provide for treating Puerto Rico as a State for the purpose of fund allocations. Additionally, for Guam, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands, an allocation is authorized of up to 1 percent of the total appropriated for migrant programs in the States and Puerto Rico.

On November 14, 1974, the Commissioner approved the use of the system for determining fiscal year 1975 allocations to the States. For this purpose, a migrant program allocation subsystem was developed which essentially extracts from the system's data base that information critical to computing the allocations.

SCOPE OF REVIEW

Our review was made primarily at OE headquarters. Additionally, we visited the system's center of operations in Little Rock. Our work there primarily involved discussions with Arkansas State Department of Education employees and a consultant whom OE relies on to monitor the system. Also, as agreed with Mr. Quie's office, much of our work involved evaluating a recent validation study of the system.

CHAPTER 2

ADEQUACY OF THE SYSTEM FOR ALLOCATION PURPOSES

OE's decision to use the system's data as a basis for allocating fiscal year 1975 title I migrant funds to the States was based to a large extent on

- the inadequacy of Department of Labor statistics which had been used in the past for this purpose and
- a recent validation study which indicates that the system would probably provide an adequate basis for estimating total funding under the title I migrant program.

We compared the methodology used to derive estimates from the system with that used for the Labor data and found that the system would probably provide a more reliable basis for estimating migrant program allocations. The accuracy of the system, however, has not been established because the validation study did not provide an adequate basis for assessing it.

The Arkansas State Department of Education recognizes that the system has inaccuracies and has taken steps to correct them.

ESTIMATES USING LABOR DATA

OE believed that estimates from Labor data were not accurate. For example, using system data, OE estimated the number of full-time equivalent migrant students, aged 5 to 17, to be about 212,000 for calendar year 1973. Conversely, using Labor data for the same period, OE estimated there were about 67,000 such students.

The Labor data is based on the monthly "In-Season Farm Labor Report" submitted by the States. These reports are compiled by reporting areas within the States and provide, among other things, estimates on the number of interstate and intrastate migratory farm workers. OE's reasons for believing that this data is not adequate for fund allocation purposes include:

- The reports provide data on farm workers rather than children.
- The procedures used to arrive at estimates are discretionary.

--State reporting areas are not required to report if the total number of migratory farm workers employed is less than 500.

--Farm workers living at home in their base State are not classified as migrants.

To convert migratory adult workers to children, OE applied a factor of three-quarters to the number of adult workers. The factor was estimated in part from statistics and comments of individuals from Labor and the Department of Agriculture. We did not evaluate the suitability of this factor, and an OE official told us that no such evaluation has been made since the factor was developed in 1966.

VALIDATION STUDY

An OE validation study, completed in March 1974, was a joint effort by OE migrant program personnel, State migrant program personnel, and an OE consultant. The study was made to determine the suitability of statistics generated by the system for allocating title I migrant funds. Specifically the study was to determine the degree to which the system's data represented actual migrant children at various schools throughout the country. The methodology of the study basically involved comparing a physical count of migrant children attending selected schools on a given date with the information in the system's data base. At the time of the study, only data on migratory children of migratory agricultural workers was permitted to be placed in the system.

The study covered 17 States and included a sample of 29 schools ^{1/} having a total of 1,865 migrant students. A summary comparison of the physical head count at these schools with the number of students shown by the system's data base follows.

^{1/}The term "school" as used in the study may refer to a school district, a school building, or some other classification.

Location	(1) Head count	(2) System count (note a)	(3) Differ- ence (2)-(1)	(4) Percent differ- ence (3)÷(1)	(5) Identical matches between head and system counts (note b)	(6) Head counts unmatched (1)-(5)	(7) System count unmatched (2)-(5)	(8) Percent unmatched (note c)
Idaho	60	60	-		60			
Missouri	60	60	-		60			
New Mexico	35	35	-		35			
Illinois	15	15	-		15			
Missouri	12	12	-		12			
Florida	4	4	-		4			
Florida	168	168	-		163	5	5	5.8
Mississippi	89	89	-		85	4	4	8.6
Florida	246	243	-3	-1.2	239	7	4	4.4
Texas	337	342	5	1.5	310	27	32	16.0
Arizona	64	63	-1	-1.6	59	5	4	13.2
Washington	100	103	3	3.0	99	1	4	4.8
Arizona	33	32	-1	-3.0	32	1	-	3.0
North Carolina	61	59	-2	-3.3	57	4	2	9.5
California	154	147	-7	-4.5	142	12	5	10.7
New York	61	56	-5	-8.2	52	9	4	20.0
Idaho	10	11	1	10.0	10	-	1	9.1
California	36	32	-4	-11.1	26	10	6	38.1
Texas	57	50	-7	-12.3	40	17	10	40.3
California	26	22	-4	-15.4	22	4	-	15.4
Maine	46	58	12	26.1	39	7	19	40.0
Alabama	58	45	-13	-22.4	44	14	1	25.4
Washington	13	10	-3	-23.1	8	5	2	46.7
New Mexico	20	27	7	35.0	19	1	8	32.1
West Virginia	23	17	-6	-26.1	17	6	-	26.1
Ohio	27	39	12	44.4	25	2	14	39.0
North Carolina	21	31	10	47.6	21	-	10	32.3
Florida	26	11	-15	-57.7	9	17	2	67.9
Wisconsin	3	7	4	133.3	-	3	7	100.0
Total	<u>1,865</u>	<u>1,848</u>	<u>-17</u>	<u>-0.9</u>	<u>1,704</u>	<u>161</u>	<u>144</u>	<u>15.2</u>

a/Adjusted by the study group for out-of-date records and inconsistencies in the survey's methodology at certain schools.

b/Identical matches are those where the children in the system and the children identified by the head count are the same. Columns (1) and (2) are a numerical comparison only.

c/ $((6) + (7)) \div ((5) + (6) + (7))$.

The average difference of -0.9 percent indicates that if the system were used for computing title I allocations, total program funding would probably be underestimated by a relatively small amount. For individual schools, however, the study showed that differences varied greatly between the head count and the system count. For example, one school in Florida showed a discrepancy of -57.7 percent, and a school in North Carolina showed a discrepancy of +47.6 percent.

Concerning the accuracy of these projections, the study recognized that the statistical samples taken in the States were too small to make a valid statement concerning the expected accuracy of allocations to individual States. For the -0.9 percent variance for the total program allocation, the study group felt that, statistically, a level of confidence could not be attached to the projection because of errors made by the survey teams during the head count.

The study showed that 84.8 percent (100-15.2) of the total number of students found during the head count and in the system's data base were identical matches. Although this analysis has no direct bearing on the accuracy of the system as a funding instrument, it does indicate the integrity and reliability of the system as a whole. That is, the -0.9 percent difference did not result from a chance numerical matching of different children.

The study group also made the following general observations or conclusions:

- No evidence was found during the survey which indicated the deliberate insertion of fictitious student records into the system. On the contrary, the survey indicated that many schools were not enrolling as many students as they could.
- No evidence was found that the computer system at Little Rock was responsible for inaccuracies in data handling. The cause of the inaccuracies in the data base sample can be traced back to the project schools and the terminal operators.
- Use of the system as a basis for allocating funds should improve its accuracy because inaccuracy would be a disadvantage to the States.

In addition to the errors made by the survey teams during the head count, the study's methodology was biased in several ways which had an indeterminate impact on the findings. OE recognized these biases and said they resulted primarily from funding and timing constraints. The biases included the following:

- Schools were excluded which had an expected enrollment of less than six children.
- The greatest number of schools were not expected to be open at the time the survey was taken; thus, the schools sampled might not be representative of the total migrant school population.
- The objectivity of the study is questionable because it was conducted by OE migrant program personnel, State migrant personnel, and OE's consultant for monitoring the system.

MIGRANT PROGRAM ALLOCATION SUBSYSTEM

This subsystem was developed to determine the number of migrant children in each State for use as a basis for fund allocations under title I. Basically, the subsystem consists of two computer programs--the first processes the system's data base and extracts the necessary enrollment information and the second prepares an allocation summary and other reports. Information critical to allocation includes (1) basic student identification data, including birth date, (2) dates enrolled in various schools, and (3) locations of the schools.

Essential to the usefulness of any computerized data base is the maintenance of accurate and current data. The Arkansas State Department of Education uses several methods to achieve this. Three of these methods are discussed below.

Data validation program

This computer program checks the correctness of student information before it is accepted into the system's data bank. Basically, the program provides two checks. First, each item that should contain numerical data is checked for such data and each item that should contain alphabetic data is likewise checked. Secondly, validity-range checks are made on data fields determined to be dates. For example, a month expressed in numbers must range between 01 and 12. Also, codes submitted in the student input data, such as "School ID," are validated by reference to a "School ID" table. Unless the code can be matched to an entry in the appropriate table the data field is rejected by the system. Error messages are prepared and transmitted back to the originating terminal for all input data items that fail the validation tests.

Duplicate record screening

The Arkansas State Department of Education has developed two basic methods to address the problem of duplicate records in the system. One method is essentially preventive and can be initiated routinely by the terminal operators. The other method is a special computer program which can be run periodically by the department of education.

The method which can be initiated by the terminal operators is used when a student identification number for a child enrolling at a particular school is not known. This could occur when a child is being enrolled for the first time or when a child already enrolled in the system (or his parents) does not know his student identification number.

To initiate a search of the system's data base for a particular child's record, the terminal operator would enter into the system certain key data describing the student. If the search cannot exactly match the supplied key data to an existing student record and thus determine a previously assigned identification number, it will supply several possible matches. After considering the possibilities, the terminal operator can (1) accept one as the correct record, (2) cause a new record with a new student identification number to be generated, or (3) reject the possibilities offered, change the critical data, and initiate another search. In all cases, the terminal operator decides on a course of action in cooperation with local school personnel.

In the other method for checking for duplicate records, which is initiated by the Arkansas State Department of Education, a special computer program searches the system's data base and lists all possible matches with pertinent key data. Where all key data for a given student record match the same data in another record, the likelihood of record duplication is very good. Conversely, where only some of the data match, there is less likelihood of record duplication. In either instance, a final determination of the existence of duplicate records is made through an investigation by the local education agency and the Arkansas State Department of Education.

The latter method was last applied in February 1973, when the system's data base contained approximately 375,000 student records. Of these records, 18,000 were identified as possible duplicates. Following a review by State department of education and local education agency personnel, about 4,500 true duplicates were identified and eliminated from the data base.

At the time of our visit to Little Rock, State education officials told us that the program for screening for duplicate records had not been used since February 1973 because in August 1973 the system's computer equipment underwent a change and the old computer program had to be adapted to the new equipment. This was accomplished after our visit and when the program was run on February 12, 1975, 2,610 additional records were identified as duplicates and eliminated from the data base. A State education official told us that the new program would be run periodically thereafter.

Terminal operator improvement program

To improve data input to the system, the Arkansas State Department of Education employs eight individuals to train project school personnel and terminal operators. Six of

the employees work with the terminal operators to improve their efficiency and accuracy in transmitting and receiving data. The contract between OE and the Arkansas State Department of Education requires that these employees make two onsite visits annually to each of the terminals. The other two employees train project school personnel routinely and upon request through State and regional conferences held throughout the year.

In conjunction with these training efforts, a computer program was developed to collect statistics on the number and types of errors made by the terminal operators as they enter data into the system. The error statistics are presented to the terminal operators as feedback information on their keystroking efficiency and accuracy.

The individuals who train the terminal operators said the reports generated on the operators were useful in identifying training needs. At the time of our visit to Little Rock, an Arkansas State Department of Education official told us that the computer program that generates the reports had not been used since 1973, when the computer equipment for the system was replaced. Later the program was converted and the new program was first run commencing on April 1, 1975. By letter dated May 5, 1975, the States were notified that the reports would be sent to them monthly.

CONCLUSIONS

Comparing the methods used to gather data on migrant children indicates that the Migrant Student Record Transfer System and the migrant program allocation subsystem provide a more reliable basis for allocating title I migrant funds to the States than do Labor statistics. The accuracy of the record transfer system, however, has not been established because the validation study did not provide an adequate basis for assessing it.

Using the system appears to be an equitable way to allocate funds to the States because the amount of funds so allocated largely depends on the States' aggressiveness in recruiting and enrolling migrant children in their schools. Further, we agree with the validation study group that the system's accuracy should improve because its use for fund allocation purposes should provide the States with an incentive to recruit and enroll all eligible children.

The Arkansas State Department of Education is aware of many of the problems causing inaccuracies and appears to be taking reasonable steps to correct them. The department

should continue its efforts in this regard to assure that States receive an equitable share of title I migrant funds and that the total migrant program allocation is as accurate as possible. It is unlikely that the system will achieve complete accuracy, however, because of the magnitude of the operation and the many variables involved.

CHAPTER 3

FISCAL YEAR 1975 MIGRANT PROGRAM ALLOCATIONS

The title I migrant program allocation for fiscal year 1975 was \$91,953,160 and was approved on November 14, 1974. Fund allocations to the States--with the exception of Alaska, Hawaii, and the District of Columbia, which did not receive an allocation--were made on the basis of data provided by the Migrant Student Record Transfer System. Puerto Rico received \$515,720 on the basis of Labor statistics. Guam, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands were allocated a total of \$195,867; however, these funds were reallocated to the States because these areas had not applied for funding.

In determining the fiscal year 1975 allocations, OE did not consider formerly migratory children or migratory children of migratory fishermen because accurate estimates of their numbers were not available. OE did have conservative data on their numbers, however, and should have included some estimate of these children in the funding base.

STATE ALLOCATIONS

Use of the system resulted in increased allocations to 15 States. The other States were not affected because the Education Amendments of 1974 provide that no State will receive, in any fiscal year prior to July 1, 1978, less than the amount received in fiscal year 1974. The table below compares, for the 15 States receiving increased allocations, the actual fiscal year 1975 allocation based on the system data with the amount they would have received had Labor statistics been used.

	<u>Labor data</u>	<u>System data</u>	<u>Increase</u>	<u>Percent increase</u>
Arkansas	\$ 751,595	\$ 1,539,915	\$ 788,320	104.9
California	10,076,838	17,365,908	7,289,070	72.3
Georgia	537,647	563,591	25,944	4.8
Idaho	909,509	1,670,527	761,018	83.7
Maine	64,833	242,522	177,689	274.1
Massachu- setts	292,850	616,578	323,728	110.5
Michigan	4,329,746	4,475,087	145,341	3.4
Minnesota	450,570	454,149	3,579	.8
Missouri	464,942	657,836	192,894	41.5
New Mexico	1,016,946	2,427,294	1,410,348	138.7
North Carolina	1,545,794	1,707,099	161,305	10.4
Vermont	6,483	10,958	4,475	69.0
Washington	2,095,331	3,419,499	1,324,168	63.2
Wisconsin	529,894	734,020	204,126	38.5
Wyoming	197,811	280,928	83,117	42.0
Total	<u>\$23,270,789</u>	<u>\$36,165,911</u>	<u>\$12,895,122</u>	<u>55.4</u>

Through fiscal year 1974, Alaska, Hawaii, and the District of Columbia had not received a title I migrant program allocation because there were no applicable Labor statistics available. Consequently, they have not participated in the system and did not receive an allocation for fiscal year 1975.^{1/}

FORMERLY MIGRATORY CHILDREN

OE officials told us that formerly migratory children were not included in the funding base for fiscal year 1975 allocations because accurate estimates of their numbers and locations were not available. The only estimates available were those obtained primarily from an OE telephone survey of the States and Puerto Rico made in October 1974. OE officials said that, although the estimates were not very accurate, they believed them to be conservative. The total estimated number of formerly migratory children was 275,246, distributed as shown below.

^{1/}On May 9, 1975, Alaska requested funds to recruit migrant children and to plan for a migrant program; OE provided \$64,400 for these purposes.

Alabama	200	Montana	200
Alaska	200	Nebraska	250
Arizona	2,250	Nevada	50
Arkansas	2,320	New Hampshire	20
California	64,500	New Jersey	4,050
Colorado	6,250	New Mexico	2,250
Connecticut	2,250	New York	4,950
Delaware	152	North Carolina	3,100
Florida	45,000	North Dakota	100
Georgia	300	Ohio	2,920
Hawaii	225	Oklahoma	400
Idaho	7,500	Oregon	2,005
Illinois	1,800	Pennsylvania	500
Indiana	2,700	Rhode Island	25
Iowa	62	South Carolina	300
Kansas	1,800	South Dakota	10
Kentucky	120	Tennessee	110
Louisiana	520	Texas	78,000
Maine	501	Utah	182
Maryland	200	Vermont	10
Massachusetts	2,250	Virginia	200
Michigan	15,000	Washington	12,000
Minnesota	561	West Virginia	50
Mississippi	820	Wisconsin	963
Missouri	800	Wyoming	320
		Puerto Rico	4,000

Note: OE officials said no estimates were available for the District of Columbia.

MIGRATORY CHILDREN OF MIGRATORY FISHERMEN

According to OE, comprehensive and accurate information on the number and location of these children was not available for inclusion in the fiscal year 1975 allocation base. Estimates available at the time were based on Department of Commerce statistics. As with the estimates of formerly migratory children, OE officials told us that, although these estimates were not accurate, they believed them to be conservative.

The Department of Commerce receives reports from the States on the estimated number of commercial fishermen (1) on vessels and (2) on boats and on shore. These two classifications are further categorized on the basis of full-time and