FINAL REPORT: SPECIAL EDUCATION REVENUE TRACKING PROJECT; PROGRAM COST DIFFERENTIALS; AND CONCENTRATIONS OF HANDICAPPED STUDENTS

Samuel T. Price
Ramesh B. Chaudhari
G. Alan Hickrod

Center for the Study of Educational Finance
Department of Educational Administration and Foundations
College of Education
Illinois State University
Normal, Illinois 61761

November 1981

An Appendix to this report, containing technical data processing information, is available upon request from:
Center for the Study of Education Finance
DeGarmo 331
Illinois State University
Normal, Illinois 61761

Support for this report came from a grant from the Illinois State Board of Education. Matters of fact or opinion contained herein are solely the responsibility of the authors and in no way reflect the official policy of the Illinois State Board of Education or Illinois State University.

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I. Statement of the Problem

Research in the subject-matter area of special education finance is inhibited by the inability of researchers to track special education revenues from their sources to the districts of residence of students who receive the educational benefits of the funds. Because most research methods in educational finance depend upon the availability of data about funding which is organized on a per-pupil basis; the inability to track special education revenues is crucial. It is not currently feasible in Illinois to attempt to quantify the effects of state special education funding efforts unless this difficulty can be overcome. Previous research (Peary, Hickrod, Price, 1980) clearly indicates that special education revenues need to be identifiable by handicapped student and by school district of residence. Improved automated data systems which will enable workers to track federal and state special education appropriations from their sources to the district of residence of students who receive the educational benefits of the funds are badly needed.

This project attempted to develop data tables which depicted the amount of state reimbursement received by each local school district in each special education program category. The effort utilized State of Illinois data tapes for the 1979-1980 school year. The tapes used were: Funding and Child Tracking System—FACTS (ISBE Form 30-34); Personnel Reimbursement (ISBE Form 50-49); and Pre-Approval (ISBE Form 50-44). Part II of this report describes the methods and procedures used to develop the data tables.

II. Development of Special Education Revenue Tracking Tables

The plan consisted of the following steps:

1. Develop tables organized by school district showing the numbers of handicapped students served in each of the special education program categories recognized by ISBE. The raw data for these tables is included as part of the Illinois Funding and Child Tracking System—FACTS. In the original project design these tables were to be used as the basis for prorating special education reimbursements received by joint agreements among their members. For example: reimbursement received by a joint agreement for its EMH staff members would be apportioned among the membership according to a rule. The rule being that each district will be credited with an amount equal to the ratio which its child count for EMH bears to the total EMH child count for all of the members

of the joint agreement; multiplied by the EMH reimbursement received by the joint agreement. This relationship may be expressed by the following formula.

$$\text{LEA Share of EMH Reimbursement} = \frac{\text{LEA EMH Child Count}}{\text{JA EMH Child Count}} \times \text{\$ Reimbursement for EMH Program}$$

The formula may be modified to accommodate any type of special education program reimbursement by changing the child count elements and the reimbursement element.

2. Develop tables organized by joint agreement showing the amount of special education reimbursement received by the joint agreement in each type of program it operates. In the original project design the raw data for these tables was contained on the Personnel Reimbursement Tape (ISBE Form 50-49) and a new data tape devised at ISU which listed the membership of each joint agreement. The tables were to be transitional tables between ISBE reimbursement to the joint agreements and the final tables showing LEA special education reimbursement by program category.

3. Develop new tables organized by joint agreement in which the reimbursement received by joint agreements is distributed among the member LEA's according to the rule stated in reference to Tables 1 (above). These three steps would be repeated for each type of special education reimbursement.

III. The Results of the Original Project

The results of the original project plan are described in the following paragraphs in the order in which the data tables are explained above.

1. The Child Count Tables—The child count tables which are organized by special education program category and by LEA were successfully developed. Some data processing problems emerged, but on the whole the results were as planned. See Table 1 (Illinois Child Count) for a summary of numbers of handicapped students served on a statewide basis.

2. The Personnel Reimbursement Tables—A problem emerged which effectively prevented the personnel reimbursement tables from being developed. In its sharpest focus this problem consisted of the inability to separate special education personnel reimbursements received by joint agreements according to the special education programs the funds supported. For example: personnel reimbursement funds received by Peoria were not separable according to whether the funds received were utilized to support MCA activities; or, whether they were used

TABLE 1

NUMBERS OF HANDICAPPED STUDENTS LISTED ON THE 94-142 FACTS TAPE AND THE 89-313 FACTS TAPE FOR THE 1979-1980 SCHOOL YEAR IN ILLINOIS - CHILD COUNT ORGANIZED BY SPECIAL EDUCATION PROGRAM CATEGORIES

PROGRAM	FACTS CODE	NUMBER OF HANDICAPPED STUDENTS		
		94-142	89-313	TOTAL
Uncoded	---	71	6	77
TMH	A	2,656	7,091	9,747
EMH	B	32,054	1,334	33,388
PH	C	1,050	2,652	3,702
LD	D	76,230	2,404	78,634
VI	E	666	689	1,355
HH	F	727	1,105	1,832
D	G	137	1,232	1,369
DB	H	39	66	105
SP	I	70,293	1,433	71,726
EH	J	9,480	501	9,981
BD	K	11,749	5,949	17,698
OHI	L	1,865	294	2,159
MH	M	677	21	698
Unauthorized Codes	O-Y	29	0	29
Total		207,723	24,777	232,500
Total (Adjusted)*		207,623	24,771	232,394

*106 students deleted because their disability was uncoded; or because an unauthorized code was used.

to support Peoria's own special education programs. The only way to separate these funds with confidence of complete accuracy is to peruse the Peoria payroll records. This is not to be construed as a criticism of Peoria's bookkeeping system. The cause lies elsewhere. This problem has been explored in greater detail in a document included in this report as Appendix A.

3. The Tables Showing Reimbursements Prorated to LEAs—Given the inability to develop Table 2, it is clear that Table 3 must also be delayed. The implication is that any studies of individual school districts must also be postponed. Thus, studies to determine the effects of various state strategies to improve special education funding formulas must use aggregate state data. Further improvements in data management will greatly enhance the ability of planners and administrators to study the educational effects of various fiscal policies. Specific improvements being studied are:

   3.1 the development of data processing links between the handicapped student and the special education cost center where he/she attends school

   3.2 the development of data processing links between state reimbursement dollars and the various special education cost centers

   3.3 the development of a consistent set of codes between Illinois special education program categories and FACTS (see Appendix A).

Although the special education revenue tracking project did not accomplish all of its original objectives, the staff is confident that the results are useful. As is so often the case in research, projects which are less than successful frequently point the way to other experiments which compensate for a previous lack of success. So it has been with the revenue tracking project. Even though the organization and content of existing special education data files will not permit the construction of data tables depicting each school district's total special education reimbursements from the state, it was possible to make estimates of special education personnel costs on a statewide basis. So far as is known this has not previously been accomplished. There have been previous special education program cost studies conducted by Rossmiller (1970) and Sorenson (1973), but these studies were done using cost accounting methods on limited samples of school districts. Part IV of this report describes the revised research plan which grew out of the original work.

IV. The Revised Research Plan

The data tables which resulted from the original study were used to study special education funding problems which the findings suggested. The research questions which were analyzed were ones which could not have been easily studied without the data available in the new tables. These research questions were:

1. What is the per pupil personnel cost of each type of special education program in Illinois; and, what relationship do these costs bear to the average per pupil personnel cost of educating students enrolled in regular classes in Illinois for the 1979-1980 school year?

2. What is the comparative concentration of handicapped students, by special education category, in the school districts of the state; and, what relationship do these concentrations bear to measures of school district wealth such as assessed valuation per pupil or median family income?

The research results of question 1 may prove useful in establishing financial benchmarks for determining the relative costs of the various types of special education programs currently being provided for handicapped students in Illinois. So far as is known, such benchmarks have not previously been available on an aggregate statewide basis.

The results of question 2 may prove to be useful in determining whether the fiscal burden imposed by mandated special education programs on local school districts is the same for all districts.

The remainder of this report is organized so as to first show the details of the development of the new data tables, and then to explain the procedures used to analyze the research questions. A final section will present the findings of the research and their implications for the field.

V. The Data Tables Needed to Answer the Questions of the Research

Two newly developed data tables are needed to analyze the research questions. These are: Table 1 (Child Count Tables for 1979-1980) and Table 4 (Special Education Personnel Expenditures by Program in Illinois for 1979-1980). Table 1 was included as part of the original design of this research project. It is therefore included as part of the discussion of the original project results on page 3. Table 4 is included on page 17. However, transitional steps are needed before Table 4 may be generated. Transitional tables (Table 2 and Table 3) are required to explain data generation for columns 4 and 5 in Table 4. The remainder of this section of the report describes the data processing procedures used to develop the tables.

1. The Special Education Program Codes Used in This Report—The special education program codes used in this report are those listed on pages 6, 7, and 8 of the 1979-1980 FACTS Instruction Book which accompanies ISBE Form 34-30. The codes and their definitions are included here. Two new codes are also included in order to accommodate types of expenditures not covered by the FACTS codes. These are: GEN, meaning general special education programs; and, ADM, meaning administrative programs.

UNITED STATES DEPARTMENT OF EDUCATION LIST OF SPECIAL EDUCATION PROGRAM CODES—PLUS TWO ADDITIONAL NEEDED CODES

Code	Definition
A	TRAINABLE MENTALLY HANDICAPPED: Mentally retarded individuals who are capable of only limited meaningful achievement in traditional basic academic skills, but who are capable of profiting from programs of training in self-care and simple job or vocational skills.
B	EDUCABLE MENTALLY HANDICAPPED: The child's intellectual development, mental capacity, adaptive behavior and academic achievement are impaired. Such mental impairment may be mild and/or moderate.
C	PHYSICALLY HANDICAPPED: The child exhibits a physical impairment, either temporary or permanent, which interferes with his/her learning and/or which requires adaptation of the physical plant.
D	LEARNING DISABLED: The child exhibits one or more deficits in the essential learning processes of perception, conceptualization, language, memory, attention, impulse control or motor function.
E	VISUALLY IMPAIRED: The child's visual impairment is such that he/she cannot develop his/her educational potential without special services and materials.
F	HARD OF HEARING: The child's residual hearing is not sufficient to enable him/her to understand the spoken word and to develop language, thus causing extreme deprivation in learning and communication. He/she may also exhibit a hearing loss which prevents full awareness of environmental sounds and spoken language, limiting normal language acquisition and learning achievement.
G	DEAF: Deaf persons whose sense of hearing is non-functional for the ordinary purposes of life (inability to hear connected language with or without the use of amplification).

Code	Definition
H	DEAF/BLIND: The child has concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that he/she cannot be accommodated in special education programs solely for deaf or blind children.
I	SPEECH AND LANGUAGE IMPAIRED: The child exhibits deviations of speech or language processes which are outside the range of acceptable variation within a given environment and which prevent full social or educational development.
J	EDUCATIONALLY HANDICAPPED: The child exhibits educational maladjustment related to social or cultural circumstances. Children who are identified as educationally handicapped are designated seriously emotionally disturbed for P.L. 94-142 count purposes.
K	BEHAVIOR DISORDERED: The child exhibits an affective disorder and/or adaptive behavior which significantly interferes with his/her learning and/or social function. Autistic and autistic-like children should be included in this category.
L	OTHER HEALTH IMPAIRED: The child exhibits a health impairment, either temporary or permanent, which interferes with his/her learning.
M	MULTI-HANDICAPPED: The child has concomitant impairments (such as mentally retarded-blind, mentally retarded-orthopedically impaired, etc.), the combination of which causes such severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf/blind.
GEN	GENERAL SPECIAL EDUCATION: A program where the employee works with all types of handicapped students.
ADM	ADMINISTRATION: Administrative activities related to management of special education.

2. The Special Education Work Assignment Codes—ISBE uses 52 alpha codes to designate work assignments of special education personnel. These codes are listed on pages 4 and 6 of the 1980 edition of Instructions for Completing Request for Approval of Special Education Personnel (ISBE Form 50-44). All 52 work assignment codes were merged into a single alphabetically arranged list for convenience of data processing. The complete list and definitions, or explanations of the work assignments, follows.

ISBE LIST OF SPECIAL EDUCATION WORK ASSIGNMENT
CODES WITH DEFINITIONS

	Code	Definition
1.	A	Administrator of a special school
2.	AD	Assistant Director of joint agreement/district. Use AD for all general special education general administrators except DIRECTOR.
3.	ART	Art therapy
4.	AUD	Audiologist
5.	B	Blind
6.	BD	Behavior Disordered
7.	BKP	Bookkeeper
8.	CC	Cross-Categorical
9.	CUS	Custodian
10.	D	Deaf
11.	DE	Driver Education
12.	DIR	Director (State Approved)
13.	ECT	Early Childhood Teacher
14.	EH	Educationally Handicapped
15.	EMH	Educable Mentally Handicapped
16.	HE	Home Economics
17.	HH	Hard of Hearing
18.	HHI	Home/Hospital Instruction
19.	HVS	Hearing/Vision Screener
20.	I	Interpreter
21.	ID	Interpreter for Deaf
22.	LD	Learning Disabled
23.	LGA	Lunchroom/Playground Aide

	Code	Definition
24.	MH	Multiply Handicapped
25.	NHA	Non-Certified Health Aide
26.	MUS	Music Therapy
27.	NEU	Neurologist
28.	OMS	Orientation/Mobility Specialist
29.	OPT	Optometrist
30.	OT	Occupational Therapist
31.	OTA	Occupational Therapy Assistant
32.	OTH	Other Workers
33.	PA	Program Assistant
34.	PE	Adapted Physical Education
35.	PH	Physically Handicapped
36.	PS	Partially Sighted
37.	PSD	Preschool Deaf
38.	PSY	Psychiatrist
39.	PT	Physical Therapist
40.	PTA	Physical Therapy Assistant
41.	PVC	Prevocational Coordinator
42.	PY	Physician
43.	RBP	Reader for Blind/Partially Sighted
44.	SEC	Secretary
45.	SL	Speech/Language Impaired
46.	SNI	School Nurse Intern
47.	SP	School Psychologist
48.	SPI	School Psychologist Intern
49.	SSW	School Social Worker

	Code	Definition
50.	STN	School Nurse
51.	SUP	Supervisor
52.	SWI	School Social Worker Intern
53.	TCO	Teacher Coordinator
54.	TMH	Trainable Mentally Handicapped

Note: Not all 54 codes were used during 1979-80 school year.

3. A Dictionary of Formulas for Allocation of Special Education Funds--The dictionary of formulas specifies how both personnel salary amounts and personnel reimbursement amounts were to be allocated to the special education program categories. The work assignment codes used in the dictionary are the same codes listed in section 2 above. The special education program categories used are those listed in section 1 above. The dictionary was needed to develop Table 2 (Sums of Salaries by Program Categories) and Table 3 (Sums of Reimbursements by Program Categories). Tables 2 and 3 were transitional tables needed to provide data for Table 4. The dictionary of formulas follows on pages 11 and 12.

DICTIONARY OF FORMULAS TO ALLOCATE PERSONNEL SALARIES AND/OR REIMBURSEMENT AMOUNTS TO SPECIAL EDUCATION PROGRAM CATEGORIES

WORK CODES	ALLOCATION FORMULA - BY PROGRAM AND BY PERCENT OF TIME ALLOCATED TO EACH PROGRAM					
	Program	%	Program	%	Program	%
A	School type	50	ADM	50		
AD	ADM	100				
ART	GEN	100				
AUD	G	25	GEN	25	ADM	50
B	E	100				
BD	K	100				
BKP	ADM	100				
CC	B	*	D	**	K	***
CUS	GEN	100				
D	G	100				
DE	GEN	100				
DIR	ADM	100				
ECT	B	*	D	**	K	***
EH	J	100				
EMH	B	100				
HE	GEN	100				
HH	F	100				
HHI	C	100				
HVS	ADM	100				
I	G	100				
ID	G	100				
LD	D	100				
LGA	GEN	100				
MH	M	100				
MUS	GEN	100				
NEU	GEN	100				
NHA	GEN	100				

WORK CODES	ALLOCATION FORMULA - BY PROGRAM AND BY PERCENT OF TIME ALLOCATED TO EACH PROGRAM					
	Program	%	Program	%	Program	%
OMS	E	100				
OPT	GEN	100				
OT	GEN	100				
OTA	GEN	100				
OTH	GEN	100				
PA	Program aides allocated same as their supervisor-linked by SSN					
PE	GEN	100				
PH	C	100				
PS	E	100				
PSD	G	100				
PSY	GEN	100				
PT	C	100				
PTA	C	100				
PVC	B	*	D	**	K	***
PY	GEN	100				
RBP	E	100				
SEC	ADM	100				
SL	I	100				
SP	GEN	50	ADM	50		
SSW	GEN	50	ADM	50		
SNI	GEN	100				
SUP	GEN	25	ADM	25	(50% in category supervised)	
STN	GEN	50	ADM	50		
SWI	GEN	100				
TCO	GEN	100				
TMH	GEN	100				

* Proportion of salary, Reimbursement in B = $\frac{\text{Sum of students in B}}{\text{Sum of stud. in B+D+K}}$ X Amount of salary or reimb.

** Proportion of salary, Reimbursement in D = $\frac{\text{Sum of students in D}}{\text{Sum of stud. in B+D+K}}$ X Amount of salary or reimb.

*** Proportion of salary, Reimbursement in K = $\frac{\text{Sum of students in K}}{\text{Sum of stud. in B+D+K}}$ X Amount of salary or reimb.

Sum of (*) + (**) + (***) = Total salary/reimb. accrued in program category; i.e., CC or ECT or PVC

4. Procedure for Generating Data for Tables 2 and 3--Tables 2 and 3 are transitional tables needed to generate data for Table 4. Table 2 (Sums of Salaries by Program Categories) is shown on page 14. Table 3 (Sums of Reimbursements by Program Categories) is shown on page 15. The data needed to generate tables 2 and 3 is contained in the previously described lists and dictionary, and also ISBE special education data tapes for the 1979-1980 school year. The tapes used were: Funding and Child Tracking System--FACTS (ISBE Form 30-34); Personnel Reimbursement (ISBE Form 50-49); and Pre-Approval (ISBE Form 50-44). The procedure followed for developing the tables are described and explained in the following pages.

4.1 Read a special educators record from Personnel Reimbursement tape. Read: salary, reimbursement.

4.2 Read same person's record on the Pre-Approval tape. Read: Work Assignment Code

4.3 Look up formula for allocating that code's salary and/or reimbursement in the dictionary.

For example: A person's record indicates that he/she is an EMH Supervisor who earns $20,000 per year and is reimbursed in the amount of $5,937.50 ($6,250 prorated at 95%). The Work Assignment Code is SUP. The Formula Dictionary says:

Code	Program %		Program %		Program %	Program %
SUP	EMH	50	GEN	25	ADM	25

Thus, the person's salary and/or reimbursement will be allocated fifty percent to the EMH program, twenty-five percent to the GEN program, and twenty-five percent to the ADM program.

4.4 Allocate salary to Table 2. Do this by:

4.4.1 Add .5 × $20,000. = $10,000. to EMH total in Table 2
4.4.2 Add .25 × $20,000. = $5,000. to GEN total in Table 2
4.4.3 Add .25 × $20,000. = $5,000. to ADM total in Table 2

Thus the worker's salary is allocated in a rational and reasonable manner to the statewide program totals of the programs served.

4.5 Allocate reimbursements to Table 3. Do this by:

4.5.1 Add .5 × $5,937.50 = $2,968.75 to EMH total in Table 3
4.5.2 Add .25 × $5,937.50 = $1,484.375 to GEN total in Table 3
4.5.3 Add .25 × $5,937.50 = $1,484.375 to ADM total in Table 3

TABLE 2

SUMS OF SPECIAL EDUCATION SALARIES IN ILLINOIS FOR 1979-1980
PRORATED BY FACTS PROGRAM CATEGORIES

PROGRAM	FACTS CODE	PROGRAM TOTAL
TMH	A	$ 15,046,434
EMH	B	60,235,833
PH	C	7,596,121
LD	D	102,707,742
VI	E	4,183,463
HH	F	3,867,690
D	G	6,162,487
DB	H	34,900
SP	I	49,796,814
EH	J	10,085,565
BD	K	32,154,808
OHI	L	717,624
MH	M	443,916
ADM		37,428,217
TOTAL		$ 330,461,614

TABLE 3

SUMS OF SPECIAL EDUCATION PERSONNEL REIMBURSEMENTS IN ILLINOIS FOR 1979-1980 PRORATED BY FACTS PROGRAM CATEGORIES

PROGRAM	FACTS CODE	PROGRAM TOTAL
TMH	A	$ 6,008,309
EMH	B	23,172,237
PH	C	2,913,391
LD	D	40,505,021
VI	E	1,639,640
HH	F	1,705,272
D	G	2,229,436
DB	H	12,330
SP	I	19,266,884
EH	J	3,790,054
BD	K	12,391,688
OHI	L	253,545
MH	M	196,167
ADM		11,451,848
TOTAL		$125,535,822

This completes the allocation of both salary and reimbursement to Tables 2 and 3 for that worker.

4.6 Go back to 4.1 and read the next worker's record. When the last record has been processed, Tables 2 and 3 will be complete and ready for use in developing Table 4.

5. Procedure for Developing Table 4—Table 4 is the final data table needed to analyze the questions of the revised research plan. Table 4 (Special Education Personnel Expenditures by Program in Illinois for 1979-1980) is shown in page 17. Table 4 is explained in the following paragraphs.

The special education programs which are depicted in Table 4 are the same programs used throughout this report and are referred to as the FACTS programs. The ADM program code is maintained in Table 4, but the GEN program disappears. The reason for this will be explained later.

Table 4 consists of nine columns of data which explain the special education personnel expenditures in Illinois for the 1979-1980 school year. Table 4 is explained in the order in which each column of data appears in the table.

Column 1

Column 1 contains thirteen alpha codes which identify the special education programs, the costs of which are the object of concern of this study. They are the same codes contained in the list of special education programs listed on pages 6-7 of this report. The program codes are ordered to correspond to the alphabetical arrangement of the FACTS codes in column 2. ADM (administration) and GEN (general special education) were not used in Table 4. The reasons for this decision are given in the following paragraphs.

The GEN code is not included in the final table because funds which were assigned to the category when Tables 2 and 3 were being generated were later distributed among the thirteen FACTS programs. The GEN monies were allocated to the FACTS categories according to the ratio of the Child Count Category to the Total Illinois Child Count, multiplied by the dollar amount in the GEN total. This is best expressed by the formula:

$$\text{Each FACTS Program Amount} = \frac{\text{That FACTS Child Count}}{\text{Total Illinois Count}} \times \text{Amount in GEN Account}$$

Thus there is no need for the GEN category in Table 4 because there are no longer any funds allocated to it.

TABLE 4

SPECIAL EDUCATION PERSONNEL EXPENDITURES BY PROGRAM IN ILLINOIS FOR 1979-1980

PROGRAM (1)	FACTS CODE (2)	CHILD COUNT (3)	SUMS SALARIES (4)	SUMS REIMBURSEMENT (5)	SALARY PER HK STUD. (Col4/3) (6)	REIMBURSE PER HK STUD. (Col5/3) (7)	DIFFERENCE (Col6-7) (8)	RATIO TO REG ED (Col6/$\bar{X}$) (9)
TMH	A	9,747	$ 15,046,434	$ 6,008,309	$1,543.70	$ 616.43	$ 927.27	1.64*
EMH	B	33,388	60,235,833	23,172,237	1,804.12	694.02	1,110,10	1.92
PH	C	3,702	7,596,121	2,913,391	2,051.90	786.98	1,264.92	2.18
LD	D	78,634	102,707,742	40,505,021	1,306.15	515.11	791.04	1.39
VI	E	1,355	4,183,463	1,639,640	3,087.43	1,210.07	1,877.36	3.29
HH	F	1,832	3,867,690	1,705,272	2,111.18	930.83	1,180.35	2.25
D	G	1,369	6,162,487	2,229,436	4,501.45	1,628.51	2,872.94	4.79
DB	H	105	34,900	12,330	332.38	117.43	214.95	0.35
SP	I	71,726	49,796,814	19,266,884	694.26	268.62	425.64	0.74
EH	J	9,981	10,085,565	3,790,054	1,010.48	379.73	630.75	1.08
BD	K	17,698	32,154,808	12,391,688	1,816.86	700.17	1,116.69	1.94
OHI	L	2,159	717,624	253,545	332.39	117.44	214.95	0.35
MH	M	698	443,916	196,167	635.98	281.04	354.94	0.68
TOTAL		232,394	$293,033,397	$114,083,974	$1,260.93	$ 490.91	$ 770.02	1.34

*$\bar{X}$ state personnel cost = $\frac{\text{sum of personnel costs in regular educ for 1979-1980}}{\text{number regular pupils enrolled on 6th day of 1979-1980 school year}}$

Data supplied by ISBE. $\bar{X}$ state personnel cost = $938.83 (constant).
ADM salaries = $37,428,217 (See Table 2)
ADM reimbursement = $11,451,848 (See Table 3)

The ADM code is not included in Table 4 for a different reason. In special education joint agreements administrative costs are billed to member school districts in two ways: (1) as a part of the tuition which a district pays for a handicapped student and (2) as a part of membership fees which member districts pay to the joint agreement. On page 13 it was explained how a special education EMH Supervisor might have his salary apportioned. It was noted there that fifty percent of the salary might be assigned to the EMH category, twenty-five percent to GEN special education, and twenty-five percent to ADM. Thus the EMH program (FACTS code B) would be credited with fifty percent of the supervisor's salary. This allocation would become part of the EMH program costs which would later be billed to member districts in the form of tuition. The twenty-five percent of the supervisor's salary assigned to GEN would be allocated as explained above. These GEN costs would then be recovered by the joint agreement in the form of tuition payments made by member districts. Tuition payments are based on audited per pupil costs of special education programs. Pure administrative costs are excluded from these program costs. The twenty-five percent of the EMH supervisor's salary which was allocated to the ADM code represent administrative costs to the joint agreement which must be recovered by the joint agreement in some way from its membership. The typical joint agreement recovers these costs from its membership in the form of membership fees. Membership fees are typically computed according to the ratio which each member's average daily attendance bears to the sum of the average daily attendance of all members. This may be expressed by the formula:

$$\text{Each member's proportionate liability} = \frac{\text{That member's ADA}}{\text{Sum of ADA for all members}}$$

Each member district will have its own ratio which is used as a multiplier to determine the amount of administrative cost, or membership fees, which the district must pay to the joint agreement. One of the results of this method is that larger school districts pay a greater amount of administrative costs than do small ones.

With respect to Table 4, the administrative costs accrued under the ADM category have been defined as pure administrative costs which would be recovered from member districts in the form of membership fees and not tuition. Therefore, the administrative costs depicted in Tables 2 and 3 are included in Table 4 as a footnote.

Column 2

Column 2 contains thirteen single letter alpha codes which are used throughout the Illinois handicapped-child tracking system to identify all types of handicapped pupils. The

codes consist of the first thirteen letters (A-M) of the English alphabet. The codes are used by local school districts to report the various types of handicapped pupils to ISBE. The codes are used here to designate special education programs for these same pupils.

Column 3

Column 3 reports the actual count of handicapped students in Illinois for the 1979-1980 school year. The data were obtained from the Funding and Child Tracking System tape for that year. The count is arranged to depict the numbers of handicapped students assigned to each FACTS category and the total number assigned to all categories. Table 1 on page 3 details the derivation of the child count data entries.

Column 4

The data entries in Column 4 represent the total amount of salary paid to personnel who were employed in special education during the 1979-1980 school year. The data processing procedures used to accomplish this were explained when the development of Table 2 was discussed (see page 13).

Each entry for a FACTS program represents the total of all salaries allocated to that particular program. The sum of all special education salaries is included as a total. The source for all information in Column 4 was the 1979-1980 special education Pre-Approval Tape. ADM salaries are included as a footnote.

Column 5

The data entries in Column 5 represent the total amount of personal reimbursement paid to local districts, by FACTS category for the 1979-1980 school year. The data processing procedures used to accomplish this were explained when the development of Table 3 was discussed (page 13). The sum of all personnel reimbursements is included as a column total. The source of information in the column was the Personnel Reimbursement Tape for 1979-1980. ADM reimbursements are included as a footnote.

Column 6

The data entries in Column 6 are computed. They represent the cost of special education personnel for the 1979-1980 year organized on a per pupil basis. The value for each entry is obtained by dividing the sums of salaries by the Child Count for the FACT category. For example: to find the Salary Per Handicapped Student for the TMH category,

divide $15,046,434 by 9747. The quotient ($1543.70) is entered in the first row of column 6. Other entries are similarly obtained.

Column 7

The data entries in Column 7 are also computed. They represent the personnel reimbursements for the 1979-1980 school year organized on a per pupil basis. The value for each entry is obtained by dividing the Sums of Reimbursements by the Child Count for that FACT category. For example: to find the Personnel Reimbursement Per Handicapped Student for the TMH category, divide $6,008,309 by 9747. The quotient ($616.43) is entered in the first row of Column 7. Other entries in the column are similarly obtained.

Column 8

The data entries in Column 8 are also computed. They represent the differences between the salaries per handicapped student and the personnel reimbursement per handicapped student for each FACTS category and the ADM program. This is better expressed by the formula:

Gross Personnel Cost Per Pupil - Personnel Reimbursement Per Pupil = Difference

The difference between the gross personnel cost and the personnel reimbursement is sometimes referred to as the net personnel cost. Literally the term net is interpreted to mean, net to district. To explain further, net to district alludes to the portion of special education program costs which are passed on to the local school district for payment after the state reimbursement has been subtracted. The data in Column 8 may be interpreted to have this meaning in a limited sense. There are instances, especially with respect to students having low prevalence handicaps, where the local district may utilize other state sources of funding to pay a portion of the excess cost of special education programs.

Column 9

The data entries in Column 9 are also computed. They represent the ratio of special education per pupil personnel costs by FACTS category, to the mean state per pupil regular education personnel cost. The mean state personnel cost for the 1979-1980 school year is a constant having the value of $938.83. The constant was computed as follows:

Total salaries paid to teachers and administrators in Illinois for the 1979-1980 year (ISBE supplied data).....	$1,880,829,408
Total salaries paid to special education administrators (see Table 2).....	37,428,215
TOTAL	$1,918,257,623
State enrollment of regular students on 6th day of 1979-1980 school year (ISBE supplied data).....	2,043,239

$$\text{State mean personnel cost} = \left[\begin{matrix}\text{regular personnel} \\ \text{cost}\end{matrix}\right] \Big/ \left[\begin{matrix}\text{regular} \\ \text{enrollment}\end{matrix}\right]$$

$$= \$1,918,257,623 \quad / \quad 2,043,239$$

$$= \$938.83$$

The entries in the column are obtained by dividing the values for salary per handicapped pupil (found in Column 6) by the mean state personnel cost ($938.83).

The data in Columns 6, 7, and 9 represent an estimate of special education personnel expenditures by program for the 1979-1980 school year. The estimates are believed to be the first which are based on aggregate state data for any given year.

VI. The Findings and Recommendations of the Study

Question 1

What is the per pupil personnel cost of each type of special education program in Illinois; and, what relationship do these costs bear to the average per pupil personnel cost of educating students enrolled in regular classes in Illinois for the 1979-1980 school year?

In answering question 1, aggregate data for the entire state of Illinois was used. Therefore, since the entire population of subjects was studied, it was not necessary to make inferences to general populations. Thus the statistical procedure which was used was simple ratio and proportion. The data in Columns 6 and 9 of Table 4 are required to respond to the research question. The technical description of Table 4 is provided in Section V of this report. The findings and recommendations with respect to Question 1 follow.

Findings

Column 6 lists the salary per handicapped student for each of thirteen special education program types. Each data entry is obtained by dividing the sums of salaries data entry found in Column 4, by the Child Count data entry found in Column 3. The child count for each program type was obtained from the FACTS tape for the 1979-1980 school year. The salary amounts for each program type were obtained from the Illinois Pre-Approval Tape for the same time period. Each salary amount listed on the Pre-Approval tale was apportioned to the thirteen program categories according to the formulas listed in the Dictionary of Formulas. Administrative apportionments were accrued separately. In ascending order the entries are: OHI—$332.79; DB—$332.38; MH—$635.98; SP—$694.26; EH—$1,010.48; LD—$1,306.15; TMH—$1,543.70; EMH—$1,804.12; BD—$1,816.86; PH—$2,051.90; HH—$2,111.18; VI—$3,087.43; and D—$4,501.45. By and large these per pupil amounts are not too unreasonable, but they require some explanation.

When an individual special education worker's name was read from the Pre-Approval Tape, her/his first work assignment was considered to be the major work assignment. That work assignment code, whatever it was, was considered to be the major work assignment of that person. The salary amount of that person was then distributed among the various special education programs according to the requirements of the Dictionary of Formulas. Some work assignment codes are used only rarely by special education administrators. Such would be the case with MH (multiply handicapped). MH pupils are known to require educational programs having very large excess costs. Even so, the computed per pupil cost according to this paradigm is only $635.98. Perhaps these pupils are in private facilities where their personnel costs would not appear in the reimbursement tape. Or perhaps the teachers of these students were given work assignment codes in keeping with their professional preparation, such as TMH or PH. The problems associated with work assignment codes are discussed more thoroughly in Appendix A.

Column 9 lists the ratios between salaries per handicapped student and the state average regular education personnel costs for 1979-1980. Each data entry is obtained by dividing the corresponding entry in Column 6 by a constant ($938.83). There are thirteen data entries, one for each of the FACTS categories. In ascending order the ratios are OHI—0.35; DB—0.35; MH—0.68; SP—0.74; EH—1.08; LD—1.39; EMH—1.92; TMH—1.64; BD—1.94; PH—2.18; HH—2.25; VI—3.29; and D—4.79. It has been reported (Sorenson, 1973) that the major variables influencing cost differences between special education programs are: (1) low teacher:pupil ratios in special education programs; and (2) extensive use of support services in special education. Some of the problems alluded to in the preceding paragraph reappear here. For example, the DB and MH codes are obviously underestimates of the true ratios needed for students in these categories. The most likely explanation for this apparent error is that the students included in those categories received their education in facilities other than the neighborhood school or in programs operated by special education joint

agreements. Privately operated facilities or state operated facilities would be a reasonable supposition about where these children received their schooling. The very low ratio obtained for the OHI category (other health impaired) may not be explained by this reasoning. OHI pupils do not generally require school programs which necessitate private or state placement. Therefore, the personnel costs for these students, 2159 of them, would be expected to appear on the pre-approval tape. They either did not or the data entries were miscoded. It is reasonable to assume that an unknown portion of the OHI reimbursement was assigned to the PH category. Appendix A explores this possibility in greater detail. Improved data processing procedures would greatly enhance the state's ability to generate on an as-needed basis lists of more accurate ratios. Other ratios on the list, with the exception of deaf ($r = 4.79$), do not appear to be unrealistic. Even the deaf ratio may be accurate because that program is known to be extremely labor intensive. Additional investigation is needed to make this determination.

It is therefore concluded that the methodology used here can be very useful. It is especially so when the programs being studied are those which are actually operated by local school districts or by special education joint agreements where the personnel costs appear on state data tapes such as the pre-approval tape. Programs included within this definition are: TMH; EMH; LD; VI; HH; D; SP; EH; BD; and OHI.

Recommendations

Recommendations regarding the findings for question 1 follow.

1. Efforts should be made to provide improved data processing links between handicapped students and the special education cost centers where they receive their education. This would entail some sort of numbering system for all special education cost centers. A suggested procedure is offered in Appendix A of this report.

2. Codes referred to in 1 above should be utilized to link state special education transfer of funds payments with the special education cost center which provides a service.

3. Efforts should be made to revise the list of special education work assignment codes. Suggestions are offered in Appendix A of this report.

4. Periodic and systematic analysis of the costs of operating special education programs in Illinois is badly needed. To be of maximum usefulness such studies need to be automated and use aggregate state data. Recommendations number 1-2-and 3 may be viewed as enabling objectives to this major recommendation.

5. The methodology devised for this study, or one similar to it, should be utilized on an annual basis to monitor state of Illinois personnel expenditures in special education.

Question 2

What is the comparative concentration of handicapped students being served by special education category, in the school districts of the state; and, what relationship do these concentrations bear to measures of school district wealth such as assessed valuation per pupil and median family income?

In responding to the research question, aggregate data for the entire state of Illinois were used. Handicapped child count data for each school district in the state were available on the 1979-1980 FACTS tape. Measures of school district wealth were available on data tapes for the 1979-1980 school year. The statistical procedure used to respond to the question was the Pearson Product Moment Correlation. The procedures was used to assess the relationship between three measures of school district wealth and the concentrations, in school districts, of thirteen categories of handicapped students. The independent variables were the three measures of school district wealth. They are: Wealth 1; Wealth 2; and MEDFDLRS. The measures are defined in the following statements.

Wealth 1 = District assessed tax valuation/average daily attendance
Wealth 2 = District assessed tax valuation/title weighted average daily attendance
MEDFDLRS = District median family income

The three measures of district wealth were available for all districts.

The dependent variables were the concentrations, in school districts, of thirteen categories of handicapped students. The concentrations of handicapped students consisted of each district's handicapped child count, expressed as a percent of its ADA, for the thirteen categories of special education enrollments. Each school district in the state was analyzed and the results of the analysis were assembled into data tables showing the concentrations of handicapped students. A sample District Analysis of Concentrations of Handicapped Students is provided here in order to illustrate the method used to define the dependent variables.

Sample District Analysis

District Code—106150022		ADA—513	TWADA—514
Program Category	*FACTS*	*Child Count*	*Percent ADA*
TMH	A	2	0.39
EMH	B	0	0.00
PH	C	2	0.39
LD	D	38	7.40
VI	E	0	0.00
HH	F	0	0.00
D	G	1	0.19
DB	H	0	0.00
SP	I	16	3.12
EH	J	0	0.00
BD	K	1	0.19
OHI	L	0	0.00
MH	M	0	0.00
TOTAL		60	11.68

A district analysis similar to the sample was performed for all Illinois school districts.

The correlations of the study were between the measures of district wealth and the concentrations of handicapped students. Separate analyses were provided for elementary districts, high school districts, and unit school districts. Table 5 depicts the results of the analysis for elementary districts. Table 6 depicts the results of the analysis for high school districts. Table 7 depicts the results of the analysis for unit districts.

In interpreting the tables a zero correlation between variables indicates a lack of any relationship between school district wealth and the concentrations of handicapped students. A negative correlation indicates that, for some reason, the concentrations of handicapped students are higher in poor school districts. A positive correlation indicates that, for some reason, the concentrations of handicapped students are higher in wealthy school districts.

The theory which explains the interpretation is that in the ideal situation handicapped students would be randomly distributed among the school districts. However, the ideal situation seldom prevails with respect to the prevalence of handicapped students enrolled in school districts. Political, social, psychological, economic, medical, and other types of events take place which tend to move the concentrations of handicapped students in either a negative or a positive direction. For example, we are familiar with the strong empirical link between poverty and lowered levels of cognitive functioning of school children. Thus we have tended to find larger numbers of EMH students in poor school districts. Despite massive efforts at the federal, state, and local levels, this situation persists. So we have come to understand, and even to anticipate, some small negative correlations between wealth and the concentration of handicapped students in schools. We may even utilize these trends to equalize educational opportunity for handicapped students in poorer school districts. Financial weightings for handicapped students based on the concentration of such students would be a possibility. The theoretical basis for positive shifts in the prevalence of handicapped students enrolled in schools is less clear. One commonly held notion is that parents of handicapped students tend to migrate away from districts having poor special education programs into districts having better ones. Such a tendency should appear as a positive correlation between wealth and the handicapped student count <u>in all programs</u>. It would not be reasonable to expect parents to migrate for one type of handicap but not for another. Degree of disability would be a reason but not type of handicap. Another explanation is provided in the case of the prevalence of deaf students. In the late 1950s an epidemic of German measles was responsible for a sharp increase in the number of deaf children in northern Illinois. Since, on the average, northern Illinois schools are wealthier than those in the southern part of the state, a positive shift in the correlation between wealth and the concentration of deaf students should have

appeared. If such a report appeared, it was not widely circulated. In any event time would eradicate the effects of the temporary condition. It is difficult, if possible at all, to rationalize positive correlations between school district wealth and concentrations of handicapped students. Therefore, the explanation is that: (1) negative correlations are anticipated and tolerable, even though we don't like them; (2) zero correlations are the ideal situation; and (3) positive correlations are to be eschewed.

Table 5 shows the Pearson correlation coefficients between the measures of school district wealth and the concentrations of handicapped students in Illinois elementary schools for the 1979-1980 year. The table provides forty-two correlations, three for each of the handicapped student concentrations. The results are interpreted in the order in which they appear in the table.

TMH results—W1 = -.044, W2 = -.046, MEDFDLRS = .009

These results approach the theoretical ideal situation. Wealth of Illinois elementary schools is almost unrelated to the concentrations of TMH students enrolled in the schools.

EMH results—W1 = -.133, W2 = -.145, MEDFDLRS = -.293

These results are identified as a small negative correlation between the wealth of Illinois elementary schools and the concentrations of EMH students enrolled in the schools. The results are anticipated by the theory base.

PH results—W1 = -.016, W2 = -.012, MEDFDLRS = -.008

These results approach the theoretical ideal situation. Wealth of Illinois elementary schools is almost unrelated to the concentrations of PH students enrolled in the schools.

LD results—W1 = -.036, W2 = -.024, MEDFDLRS = +.375

The income results depart sharply from the ideal of zero correlation. They are also in the positive direction.

VI results—W1 = -.007, W2 = -.003, MEDFDLRS = +.052

These results approach the theoretical ideal situation. Wealth of Illinois elementary schools is almost unrelated to the concentrations of VI students enrolled in the schools.

HH results—W1 = -.033, W2 = -.029, MEDFDLRS = +.075.

These results approach the theoretical ideal situation. Wealth of Illinois elementary schools is almost unrelated to the concentrations of HH students enrolled in the schools.

D results—W1 = -.043, W2 = -.051, MEDFDLRS = -.091

These results approach the theoretical ideal situation. Wealth of Illinois elementary schools is almost unrelated to the concentrations of D students enrolled in the schools.

DB results—W1 = +.033, W2 = +.037, MEDFDLRS = +.101

These results approach the theoretical ideal situation. Wealth of Illinois elementary schools is almost unrelated to the concentration of DB students enrolled in the schools.

SP results—W1 = +.354, W2 = +.310, MEDFDLRS = -.077

The property valuation results depart significantly in a positive direction from the ideal situation.

EH results—W1 = +.015, W2 = +.019, MEDFDLRS = -.032

These results approach the theoretical ideal situation. Wealth of Illinois elementary schools is almost unrelated to the concentrations of EH students enrolled in the schools.

BD results—W1 = +.067, W2 = +.075, MEDFDLRS = +.404

These results depart significantly in a positive direction from the ideal situation.

OHI results—W1 = +.105, W2 = +.111, MEDFDLRS = +.054

These results represent only moderate positive departures from the ideal situation. Although the deviations are positive, they are so small as to be insignificant.

MH results—W1 = +.022, W2 = +.015, MEDFDLRS = -.132

These results represent only small positive departures from the theoretical ideal. They are not significant.

TOTAL results—W1 = +.220, W2 = +.198, MEDFDLRS = +.153

The total results for all categories of handicapped students represents a small positive correlation between wealth and the concentration of all types of handicapped students in the elementary schools of the state. As was shown above, that result is misleading because four categories of handicapping conditions deviate significantly from the ideal of zero correlation. These are: EMH, LD, SP, and BD.

TABLE 5

PEARSON CORRELATION COEFFICIENTS BETWEEN THREE MEASURES OF SCHOOL DISTRICT WEALTH AND THIRTEEN HANDICAPPED CHILD COUNT PERCENTAGES FOR ILLINOIS ELEMENTARY SCHOOLS FOR THE 1979-1980 SCHOOL YEAR

PROGRAM	FACTS CODE	WEALTH 1	WEALTH 2	MEDFDLRS
TMH	PA	- .044	- .046	.009
EMH	PB	- .133	- .145	- .293
PH	PC	- .016	- .012	- .008
LD	PD	- .036	- .024	.375
VI	PE	- .007	- .003	.052
HH	PF	- .033	- .029	.075
D	PG	- .043	- .051	- .091
DB	PH	.033	.037	.101
SP	PI	.354	.310	- .077
EH	PJ	.015	.019	- .032
BD	PK	.067	.075	.404
OHI	PL	.105	.111	.054
MH	PM	.022	.015	- .132
Total	PT	.220	.198	.153

Table 6 shows the Pearson correlation coefficients between the measures of school district wealth and the concentrations of handicapped students in Illinois high schools for the 1979-1980 school year. The table provides forty-two correlations, three for each of the handicapped student concentrations. The results are interpreted in the order in which they appear in the table.

TMH results—W1 = -.027, W2 = -.053, MEDFDLRS = +.050

These results approach the theoretical ideal situation. Wealth of Illinois high schools is almost unrelated to the concentrations of TMH students enrolled in the schools.

EMH results—W1 = -.065, W2 = -.062, MEDFDLRS = -.379

These results are identified as a moderate negative correlation between the wealth of Illinois high schools and the concentrations of EMH students enrolled. The results are anticipated by the theory base and are small enough to be tolerable.

PH results—W1 = +.021, W2 = +.028, MEDFDLRS = +.169

These results approach the theoretical ideal situation. Wealth of Illinois high schools are almost unrelated to the concentrations of PH students enrolled.

LD results—W1 = -.048, W2 = -.049, MEDFDLRS = +.174

These results represent a very insignificant relationship. The results differ from those obtained for the Illinois elementary schools. They showed a moderate positive correlation while these do not. Thus high school districts more nearly approach the ideal situation than do elementary ones.

VI results—W1 = -.071, W2 = -.062, MEDFDLRS = +.180

These results approach the theoretical ideal situation. Wealth of Illinois high schools are almost unrelated to the concentrations of VI students enrolled.

HH results—W1 = -.071, W2 = -.068, MEDFDLRS = +.079

These results approach the theoretical ideal situation. Wealth of Illinois high schools are almost unrelated to the concentrations of HH students enrolled.

D results—W1 = +.294, W2 = +.209, MEDFDLRS = +.069

These results deviate significantly from the ideal correlation of zero. Moreover, the deviation is in the positive direction.

Perhaps the difference is explained by the fact that in recent years deaf high school students have been enrolled in state residential schools for the deaf instead of their home school districts in some cases. This data needs additional explanation.

DB results—W1 = +.041, W2 = +.043, MEDFDLRS = +.147

These results approach the theoretical ideal situation. Wealth of Illinois high schools is almost unrelated to the concentrations of DB students enrolled.

SP results—W1 = -.055, W2 = -.065, MEDFDLRS = -.066

These results approach the theoretical ideal situation. Wealth of Illinois high schools is almost unrelated to the concentrations of SP students enrolled. This was not so for elementary districts. In the elementary districts there was a high positive correlation between wealth (on the property valuation side) and concentration of SP students enrolled. The data for high school districts may reflect the fact that many developmental speech and language problems are largely eliminated at the elementary school level. However, such an explanation would be suspect because it would not explain the positive correlation at the elementary level. More information is needed.

EH results—W1 = -.031, W2 = -.026, MEDFDLRS = -.003

These results approach the theoretical ideal situation. Wealth of Illinois high schools is almost unrelated to concentrations of EH students enrolled.

BD results—W1 = -.036, W2 = -.021, MEDFDLRS = +.591

These results depart significantly in a positive direction from the ideal of zero correlation. This data requires further study.

OHI results—W1 = -.030, W2 = -.031, MEDFDLRS = +.035

These results approach the theoretical ideal situation. Wealth of high school districts is almost unrelated to concentrations of OHI students enrolled.

MH results—W1 = -.060, W2 = -.063, MEDFDLRS = -.111

These results approach the theoretical ideal situation. Wealth of high school districts is almost unrelated to the concentrations of MH students enrolled.

TOTAL results—W1 = -.089, W2 = -.092, MEDFDLRS = +.143

TABLE 6

PEARSON CORRELATION COEFFICIENTS BETWEEN THREE MEASURES OF SCHOOL DISTRICT WEALTH AND THIRTEEN HANDICAPPED CHILD COUNT PERCENTAGES FOR ILLINOIS HIGH SCHOOLS FOR THE 1979-1980 SCHOOL YEAR

PROGRAM	FACTS CODE	WEALTH 1	WEALTH 2	MEDFDLRS
TMH	PA	- .027	- .053	.050
EMH	PB	- .065	- .062	- .379
PH	PC	.021	.028	.169
LD	PD	- .048	- .049	.174
VI	PE	- .071	- .062	.180
HH	PF	- .071	- .068	.079
D	PG	.294	.209	.069
DB	PH	.041	.043	.147
SP	PI	- .055	- .065	- .066
EH	PJ	- .031	- .026	- .003
BD	PK	- .036	- .021	.591
OHI	PL	- .030	- .031	.035
MH	PM	- .060	- .063	- .111
Total	PT	- .089	- .092	.143

These results are the totals of all types of handicapped students. The results would indicate that, on the whole, measures of district wealth in Illinois high schools are unrelated to the concentrations of handicapped students enrolled in them. Such a conclusion would be misleading. As shown by the data above, the concentrations of four handicapping conditions differ significantly from the ideal zero correlation. These are: EMH; VI; D; and BD.

Table 7 shows the Pearson correlation coefficients between measures of school district wealth and concentrations of handicapped students in Illinois unit school districts for the 1979-1980 school year. The table provides forty-two correlations, three for each handicapped student concentration. The results are interpreted in the order they appear in the table.

TMH results—W1 = +.034, W2 = +.014, MEDFDLRS = +.003.

These results approach the theoretical ideal situation. Wealth of unit school districts in Illinois are almost unrelated to concentrations of TMH students enrolled.

EMH results—W1 = -.079, W2 = -.110, MEDFDLRS = -.237

These results are identified as a negative correlation of low degree between the wealth of unit districts and the concentrations of EMH students enrolled. The results were anticipated by the theory base.

PH results—W1 = +.009, W2 = +.027, MEDFDLRS = +.162

These results identify a small positive correlation between family income and the concentrations of PH students enrolled. The theory cannot account for this deviation.

LD results—W1 = -.005, W2 = +.020, MEDFDLRS = +.196

These results identify a small positive correlation between family income and the concentrations of LD students enrolled. The theory cannot account for this deviation.

VI results—W1 = -.099, W2 = -.102, MEDFDLRS = -.040

These results identify a small positive correlation between all measures of wealth and the concentrations of VI students enrolled. The theory cannot account for these deviations.

HH results—W1 = -.133, W2 = -.135, MEDFDLRS = -.053

These results identify a small positive correlation between property valuation and the concentrations of HH students enrolled. The theory cannot account for these deviations.

D results—W1 = -.066, W2 = -.062, MEDFDLRS = +.108

There is a small positive correlation between family income and the concentrations of D students in the unit school districts of Illinois.

DB results—W1 = -.030, W2 = -.025, MEDFDLRS = +.055

These results approach the theoretical ideal situation. Wealth of unit school district are almost unrelated to concentrations of DB students enrolled.

SP results—W1 = +.134, W2 = +.122, MEDFDLRS = -.108

These results depart significantly from the ideal zero correlation. The median family income correlation is negative. The district valuation correlation is positive. The negative correlation is explained by the theory base. The positive ones are not. Further study is indicated.

EH results—W1 = -.056, W2 = -.066, MEDFDLRS = -.082

These results approach the theoretical ideal situation. Wealth of unit school districts is almost unrelated to the concentrations of EH students enrolled.

BD results—W1 = -.172, W2 = -.157, MEDFDLRS = +.334

These results depart significantly from the ideal zero correlation. The median family income correlation is strongly positive. The district valuation correlations are negative. The negative correlations are explained by the theory base. The positive correlation is not. Further study is indicated.

OHI results—W1 = -.147, W2 = -.144, MEDFDLRS = +.193

These results depart significantly from the ideal zero correlation. The median family income correlation is positive. The district valuation correlations are negative. The negative correlations are anticipated by the theory. The positive one is not. Further study is indicated to explain these findings.

MH results—W1 = -.014, W2 = -.004, MEDFDLRS = -.013

These results approach the ideal situation. Wealth is almost unrelated to the concentrations of MH students in Illinois unit school districts.

TOTAL results—W1 = -.005, W2 = -.004, MEDFDLRS = +.038

These results would indicate that, on the whole, measures of district wealth in Illinois unit school districts are unrelated to the concentrations of handicapped students enrolled in them. Such a conclusion would be misleading. As shown by the above data, the concentrations of nine of thirteen categories are significantly correlated with district wealth.

TABLE 7

PEARSON CORRELATION COEFFICIENTS BETWEEN THREE MEASURES OF SCHOOL DISTRICT WEALTH AND THIRTEEN HANDICAPPED CHILD COUNT PERCENTAGES FOR ILLINOIS UNIT SCHOOL DISTRICTS FOR THE 1979-1980 SCHOOL YEAR

PROGRAM	FACTS CODE	WEALTH 1	WEALTH 2	MEDFDLRS
TMH	PA	.034	.014	.003
EMH	PB	- .079	- .110	- .237
PH	PC	.009	.027	.162
LD	PD	- .005	.020	.196
VI	PE	- .099	- .102	- .040
HH	PF	- .133	- .135	- .053
D	PG	- .066	- .062	.108
DB	PH	- .030	- .025	.055
SP	PI	.134	.122	- .108
EH	PJ	- .056	- .066	- .082
BD	PK	- .172	- .157	.334
OHI	PL	- .147	- .144	.193
MH	PM	- .014	- .004	- .013
Total	PT	- .005	- .004	.038

It is noted that there are differences between the results for elementary, high school, and unit school districts which require further study.

It was decided that an additional data table (Table 8) was needed to highlight the results of the research with respect to large unit school districts in Illinois. The table shows the concentrations of handicapped students, by special education categories, enrolled in the largest cities in the nine standard metropolitan statistical areas in Illinois. The concentrations are expressed as percentages of each district's average daily attendance for the 1979-1980 school year. Table 8 appears on page 36.

There are few surprises in the information in the table. The pattern of concentrations of handicapped students is similar in each of the nine districts except for East St. Louis. Even there, the FACTS categories having the largest concentrations of handicapped students are the same categories as the other eight districts. So the pattern for East St. Louis is the same as for other cities. It is the degree of the concentrations which differs markedly. This difference requires further study. The question may well be asked: What would the concentration percentages look like if they were arranged by grade level for each school district; and, how would the grade level concentrations correlate with district wealth?

One finding is clear. The state and federal prevalence ratios for the various categories of handicapped students in Illinois are no longer adequate.

Recommendations

Recommendations regarding the findings for Question 2 follow.

1. It is recommended that study of special education finance be continued in Illinois. A research plan is needed to guide future studies.

2. It is recommended that special education funding policies in Illinois be based on the results of the research in recommendation one.

3. It is recommended that specific efforts be made to explain why the concentrations of high prevalence categories of handicapped students tend to depart significantly from zero correlation.

4. Positive correlations between the concentrations and wealth especially need to be explained.

5. It is recommended that the ISBE published prevalence ratios for all FACTS categories be studied and updated.

TABLE 8

CONCENTRATION OF HANDICAPPED STUDENTS BY SPECIAL EDUCATION CATEGORY ENROLLED IN LARGEST CITY IN EACH STANDARD METROPOLITAN STATISTICAL AREA IN ILLINOIS

PRO-GRAM	FACTS	STATE AVERAGE PERCENT	CHAMPAIGN 010004	CHICAGO 016299	DECATUR 055061	BLOOMINGTON 064087	PEORIA 072150	ROCK ISL 081041	E. ST. LS 082189	SPRINGFLD 084186	ROCKFORD 101205
TMH	A	.48*	.71**	.80	.43	.73	.81	.64	.47	.74	.34
EMH	B	1.63	2.57	3.32	1.76	2.31	3.73	2.92	1.98	4.96	1.88
PH	C	.18	.48	.37	.04	.36	.43	.23	.25	.38	.39
LD	D	3.85	2.67	3.00	2.90	4.34	2.51	3.58	1.75	4.49	5.60
VI	E	.07	.11	.15	.05	.04	.07	.11	.01	.10	.09
HH	F	.09	.11	.13	.06	.13	.06	.14	.01	.04	.12
D	G	.07	.20	.12	.05	.04	.15	.04	.03	.14	.05
DB	H	.01	.00	.01	.00	.00	.01	.00	.00	.03	.00
SP	I	3.51	5.58	2.02	4.80	6.47	5.78	5.81	3.27	4.13	3.55
EH	J	.49	3.50	.42	.02	.11	1.47	1.62	.01	.00	.56
BD	K	.87	.47	1.11	.71	1.57	.64	1.49	.29	.72	.82
OHI	L	.11	.01	.14	.00	.00	.24	.09	.00	.24	.02
MH	M	.03	.00	.00	.40	.00	.00	.05	.00	.00	.13
TOTAL	-	11.39	16.41	11.59	11.22	16.10	15.90	16.72	8.07	15.97	13.55

*State average = (Number TMH in Illinois)/(Illinois ADA for 1979-80) X 100
**Data entry = (Champaign TMH child count)/(Champaign ADA) X 100

6. It is recommended that a specific study be made to show the grade level distributions of each of the thirteen categories of FACTS students enrolled in the Illinois public schools. Such a study would highlight suspected discrepancies between elementary and secondary school enrollments of handicapped students.

POLICY IMPLICATIONS OF THE STUDY

The special education policy issues studied during the course of this project are discussed in the following paragraphs.

A major policy issue in Illinois is that of establishing a system of special education funding based on financial weightings for concentrations of handicapped students. It has been assumed that a system of weightings similar to that used for Title I students would also be appropriate for handicapped students. In practice, such a system would be designed to earmark more state special education funds for school districts having higher concentrations of handicapped students. The proposal has appeal because it is believed that it would result in additional special education monies being transferred to the large cities of the state. This belief is based usually on the assumption that there are more handicapped students in large cities than there are in other areas. Table 8 shows the concentrations of handicapped students in eight large cities in Illinois. It is noted that not all of the large cities would benefit from a system of weightings. Even those who would on an overall basis would experience difficulties in some FACTS categories. The finding of positive correlations between district wealth and concentrations of some types of handicapped students casts a measure of doubt on this belief. The possibility must now be considered that a special education funding policy based on financial weightings for concentrations of handicapped students may not serve the purpose of transferring special education monies to the large cities. Of even greater immediate concern is the thought that the positive correlations found in this study lead to the conclusion that the current funding procedures for special education are disequalizing. This conclusion is justified by the fact that in some FACTS categories, wealthy districts receive a disproportionate share of special education reimbursements. This finding requires additional study. A suspicion exists that higher concentrations of handicapped students are found in some wealthy districts simply because such districts have the local wealth to pick up the local district portion of the special education costs. Other districts which are poorer in district wealth do not identify the handicapped students and thus avoid paying the local district portion of the program costs. This situation would, if shown to be true, argue for the state to assume a greater portion of the necessary costs of educating handicapped students. Currently the state pays approximately forty percent of the personnel costs of special education programs. This estimate is derived from Table 4 and is for the 1979-1980 school year. Table 8 does not take into account the enrollment of non-public school pupils. This condition requires additional study.

Other policy options emerge from the correlational studies. One such option would be for the state to resolve the problems associated with the positive correlations between wealth and concentrations of handicapped students by providing case finding grants for districts having less than the state average concentrations of handicapped students in the FACTS categories. Standards could be established for these grants based on degree of deviation below state average for child count and degree of deviation below some standard amount for district wealth. The intended effect of child find grants would be to stimulate handicapped child case finding in poorer school districts. The actual result of such grants could be counterproductive to their purpose. Poor districts may not want to find more handicapped students because of the additional costs which each new pupil would place on the district's resources. Other factors could also influence the outcome of child find grants; not the least of these would be the insistence of state and federal levels of government that all handicapped school-aged children are entitled to a free appropriate public education (FAPE).

One other policy problem was brought to light during the process of compiling data for Tables 2 and 3. A disproportionate number of handicapped students are enrolled at the elementary level of instruction. The actual percentages for elementary school districts and for high school districts are: elementary = 15.54 percent; and high school = 6.46 percent. It is suspected that at least part of this disparity is caused by the fact that the teacher certification patterns in the field of special education do not match the special education program patterns found in the public schools of Illinois. This problem is especially pressing in the high prevalence special education programs, and in programs at the secondary school level. The trend in the state toward decategorization of low prevalence programs and the concurrent growth of Cross Categorical classrooms causes part of the problem. Another aspect of the problem is that there is no way for a regular high school teacher to be certificated to teach handicapped students short of full credentialling through a university program. What is needed is either a special education endorsement to a Type 9 Certification (not now lawful), or the authorizing of universities to prepare special education teachers at the secondary-only level. This option is not currently possible because the Type 10 Certificate required for special education teachers is valid K-12. If this problem were to be solved, it would permit teacher education programs to retrain regular high school teachers to work with handicapped students within their own subject matter areas. Such programs could be attractive to young teachers who wish to extend their employability in the face of imminent staff reductions caused by declining enrollments. This strategy would also assist small school districts, having a single high school, to extend their curricular offerings without adding additional staff.

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