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Some Principles and Practices of Evaluation.

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Descriptors-Behavioral Objectives, Bibliographies, *Educational Objectives, Educational Programs, *Evaluation Methods, *Program Evaluation

Evaluation is the process of determining the extent to which specified objectives have been reached. As a professional tool, it is used to (1) appraise the achievements of individual students; (2) diagnose the learning problems of an individual student or class in order to devise future teaching strategies; and (3) appraise the effectiveness of curricula, courses, instructional materials, and administrative and organizational structures. Product evaluation, measurement of the performance of students, holds the greatest promise for helping to improve the overall educational program. Steps in product evaluation include (1) definition of educational objectives to be achieved, (2) translation of the goals into descriptions of behavior, (3) identification of situations in which the behavior can be observed, (4) development of some measurement device, (5) application of the evaluation device to the educational program, (6) analysis of evidence obtained, and (7) statement of conclusions. Once evaluation has been expanded into performance terms, difficult tasks of data collection, organization, analysis, and interpretation arise. A bibliography listing 87 books, pamphlets, and articles is included to assist in further study of evaluation. (TT)

by Ernest Berty
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SOME PRINCIPLES AND PRACTICES OF EVALUATION

THE TITLE OF MY PAPER IS "SOME PRINCIPLES AND PRACTICES OF EVALUATION." ANY OF YOU AT ALL FAMILIAR WITH THIS TOPIC KNOW VERY WELL IT COULD COVER SEVERAL 2-3-HOUR CREDIT COURSES. OBVIOUSLY, THE TIME ALLOTTED MAKES IT MANDATORY THAT THE TOPIC BE DELIMITED. IN THE DEVELOPMENT OF THIS PAPER I WAS ALSO FACED WITH TWO OTHER CHARGES:

A. MAKE IT RELEVANT TO THE FOLLOWING ACTIVITY, AND

B. USE THE KISS TECHNIQUE--KEEP IT SIMPLE STUPID!

I HAVE TRIED TO ABIDE WITH ALL THREE CHARGES--THE TIME ELEMENT, THE RELEVANCY, AND THE SIMPLENESS.

MY PAPER HAS BEEN ORGANIZED AROUND A SERIES OF QUESTIONS, SUCH AS:

1. WHY EVALUATE EDUCATIONAL PROGRAMS?
2. WHAT IS EVALUATION?
3. WHAT METHOD OF EVALUATION SHOULD BE APPLIED?
4. HOW DO YOU PLAN FOR THE SO-CALLED "PRODUCT TYPE" OF EVALUATION?
5. WHEN SHOULD EVALUATION BE ATTEMPTED?
6. WHAT IS THE PRESENT TREND IN EVALUATION?

BEFORE I BEGIN TO ANSWER ANY OF THE QUESTIONS I WOULD LIKE TO REFER TO SOME TERMINOLOGY USUALLY ASSOCIATED WITH EVALUATION AND ATTEMPT TO APPLY SOME GROUND RULES. TERMS SUCH AS EVALUATION, ASSESSMENT, APPRAISAL, AND MEASUREMENT, ALL MEAN TO MEASURE SOMETHING. THUS, AS FAR AS I AM CONCERNED THEY CAN BE USED INTERCHANGEABLY. I'M PRETTY SAFE IN MAKING THIS STATEMENT BECAUSE THIS IS THE WAY THEY ARE USED IN THE LITERATURE. THE WORD SURVEY ALSO APPEARS TO BE USED BY SOME AUTHORS TO MEAN ABOUT THE SAME THING; HOWEVER, IT SIGNIFIES SOMETHING A LITTLE DIFFERENT TO ME. I USUALLY LIKE TO THINK OF A SURVEY BEING USED WHEN A PROJECT IS FIRST PLANNED. IT ASSISTS IN DETERMINING THE FEASIBILITY OF A PROPOSED PROGRAM BY DESCRIBING THE ENVIRONMENT AND IDENTIFYING SOME OF THE UNMET NEEDS.

THERE ARE OTHER TERMS I PROBABLY SHOULD ALSO DEFINE SUCH AS BEHAVIORAL OBJECTIVES, LEARNING OUTCOMES, PERFORMANCE TERMS AND OPERATIONAL TERMS; HOWEVER, THE ELEMENT OF TIME DOESN'T PERMIT US TO LINGER VERY LONG ON DEFINITIONS. WE MUST NOW MOVE INTO ANSWERING THE QUESTIONS RAISED.

WHY EVALUATE EDUCATIONAL PROGRAMS?

FOR MANY REASONS, EVALUATION HAS SUDDENLY ACHIEVED A NEW PROMINENCE. THE EDUCATION COMMUNITY AND THE LAY PUBLIC AS WELL HAVE SUDDENLY COME TO BELIEVE THAT EVALUATION IS NOT ONLY POSSIBLE, BUT IS ESSENTIAL. AS A MATTER OF FACT, WE HAVE BEEN TOLD THIS FOR YEARS, NOW THEY ARE LOOKING FOR US TO DELIVER. THIS PRESENTS US WITH AN UNPARALLELED OPPORTUNITY, BUT IT ALSO PRESENTS US WITH AN EXTRAORDINARILY MESSY SET OF PROBLEMS IN HOW TO GET IT DONE. THE JOB IS MUCH TOUGHER THAN MOST PEOPLE REALIZE.

COMMISSIONER OF EDUCATION, HAROLD HOWE, CITES ONE OF THE SIGNIFICANT REASONS IN THE FOLLOWING QUOTATION:

> ...EVALUATION HAS BECOME A SORT OF SACRED COW IN EDUCATION IN THE SENSE THAT EVERYONE, BOTH EDUCATORS AND LAYMEN, THEORETICALLY BELIEVE IN IT. NOT MANY PEOPLE KNOW WHAT IT IS OR WHAT TO DO WITH IT, BUT IT IS NEVERTHELESS WIDELY REGARDED AS 'A GOOD THING.' THE VAGUE NOTION IS THAT WE CAN FIND OUT THROUGH SOME PROCEDURE (SCIENTIFIC OR OTHERWIDE) WHAT WE ARE ACCOMPLISHING WITH ALL THESE FEDERAL DOLLARS SPENT ON EDUCATION.

BESIDES THE NEED TO SATISFY THE LEGAL REQUIREMENTS OF THE VARIOUS FEDERAL PROGRAMS AS WELL AS PUBLIC OPINION WHICH DETERMINES THE MORAL AND FINANCIAL SUPPORT GIVEN TO EDUCATIONAL POLICIES AND PRACTICES---EVALUATION IS A PROFESSIONAL TOOL WHICH SHOULD PROVIDE EDUCATORS WITH SOUND AND ADEQUATE INFORMATION ON EDUCATIONAL RESULTS.

AS A PROFESSIONAL TOOL, EVALUATION IS USED:

1. TO APPRAISE THE ACHIEVEMENTS OF INDIVIDUAL STUDENTS.
2. TO DIAGNOSE THE LEARNING DIFFICULTIES OF AN INDIVIDUAL STUDENT OR CLASS IN ORDER TO DEVISE FUTURE TEACHING STRATEGIES.
3. TO APPRAISE THE EFFECTIVENESS OF A CURRICULUM, OF A COURSE, OF INSTRUCTIONAL MATERIALS AND PROCEDURES, AND OF ADMINISTRATIVE AND ORGANIZATIONAL STRUCTURES AND PROCESSES.

IN SUMMARY, PROFESSIONALS USE EVALUATION AS A MEANS OF ENCOURAGING PROGRAM MODIFICATION AND REVISION, OR EVEN THE ABANDONMENT OF THE PROGRAM ALTOGETHER. IT CAN BE USED TO DETERMINE THE EFFECTIVENESS OF A PROGRAM OR PROJECT.

SINCE THE STATE DEPARTMENT USUALLY HAS THE RESPONSIBILITY OF COMBINING THE FINAL RESULTS OF PROJECTS AND PROGRAMS UNDER ITS AUSPICES, IT IS NECESSARY THAT THIS GROUP ADVOCATE EVALUATION PROCEDURES WHICH WILL GREATLY FACILITATE THE ASSESSMENT OF THE OVERALL IMPACT.

WHAT IS EVALUATION?

AS USED IN THIS PAPER, EVALUATION IS THE PROCESS OF DETERMINING THE EXTENT TO WHICH SPECIFIED OBJECTIVES HAVE BEEN REACHED. STATED IN ANOTHER WAY, EVALUATION IS THE PROCESS OF ASSESSING THE EXTENT AND DIRECTION RESULTING FROM AN EDUCATIONAL EXPERIENCE. OBVIOUSLY, BASELINE DATA IS REQUIRED TO MAKE THOSE DECISIONS WHICH DETERMINE THE DIRECTION OF THE CHANGE PROCESS. EVALUATION SHOULD ANSWER THIS QUESTION - HAVE THE EDUCATIONAL ATTAINMENTS OF CHILDREN PARTICIPATING IN THE PROGRAM BEEN RAISED?

RALPH TYLER, CHAIRMAN OF THE EXPLORATION COMMITTEE OF THE NATIONAL ASSESSMENT PROJECT STATED:

> ... "EVALUATION IS THE PROCESS FOR DETERMINING THE DEGREE TO WHICH CHANGES IN BEHAVIOR ARE ACTUALLY TAKING PLACE."

ROBERT TRAVERS IN HIS BOOK EDUCATIONAL MEASUREMENT POINTS OUT THAT EVALUATION IS MORE THAN MERELY DETERMINING THE OUTCOMES (I.E., CHANGES PRODUCED IN THE STUDENTS). HE STATES THAT EVALUATION ALSO INVOLVES A JUDGMENT OF THE DESIRABILITY OF WHATEVER OUTCOMES ARE DEMONSTRATED TO OCCUR.

WHAT METHOD OF EVALUATION SHOULD BE APPLIED?

THIS PAPER IS BASED UPON THE PREMISE THAT THE KIND OF EVALUATION WHICH HOLDS THE GREATEST PROMISE FOR HELPING TO IMPROVE THE OVERALL EDUCATIONAL PROGRAM IS PRODUCT EVALUATION. THIS APPROACH PRESENTS THE PROBLEM OF DEVISING PROCEDURES WHICH WILL YIELD TRUTHFUL AND ACCURATE APPRAISALS OF PRODUCTS THAT REPRESENT STUDENT OUTCOMES.

NOW I HAVE RAISED THE QUESTION IN YOUR MIND - JUST WHAT IS PRODUCT EVALUATION?

IN FORMULATING EDUCATIONAL OBJECTIVES, EDUCATORS HAVE DRAWN THEM FROM THREE DISTINCT DOMAINS, WHICH MAY BE DESIGNATED AS:

1. STRUCTURE OUTCOMES
2. PROCESS OUTCOMES
3. PRODUCT OUTCOMES

LET ME TRY TO DEFINE EACH OF THESE DOMAINS FOR YOU.

1. STRUCTURAL OUTCOME - REFERS TO SOME ASPECT OF SCHOOL PLANT, EQUIPMENT, OR ADMINISTRATIVE ORGANIZATION. EXAMPLES MAY BE STUDENT-TEACHER RATIOS, NUMBER OF CLASSROOMS, TEACHER SALARIES, TOTAL ENROLLMENT, AGE OF FACILITIES, ETC.
2. PROCESS OUTCOME - REFERS TO SOME ASPECT OF SCHOOL OR CLASSROOM PROCEDURE. EXAMPLES MAY BE: GUIDANCE COUNSELORS IN BOTH THE ELEMENTARY AND SECONDARY SCHOOLS, MODERN MATH, I.T.A., OPEN-COURT, ETC.

EVALUATION OF BOTH THE STRUCTURE AND PROCESS OUTCOME TYPES, GENERALLY CAN ONLY ASSUME A HIGH CORRELATION EXISTS WITH DESIRED OUTCOMES. THE INSTRUMENTS USED TO EVALUATE OBJECTIVES IN THESE DOMAINS TAKE THE FORM OF CHECKLISTS AND RATING SCALES. THESE ARE THE SO-CALLED "DO-IT-YOURSELF" EVALUATION DEVICES, SUCH AS:

A. EVALUATIVE CRITERIA OF THE COOPERATIVE STUDY OF SECONDARY SCHOOLS

B. CRITERIA FOR EVALUATING JUNIOR HIGH SCHOOLS

C. OTHERS

SUCH APPRAISALS INVOLVE A SERIES OF ASSUMPTIONS THAT CERTAIN STRUCTURES OR PROCESSES WILL IN FACT PRODUCE THE DESIRED END PRODUCT, ASSUMPTIONS WHICH ARE RARELY SUBJECTED TO TESTS.

NOW, WHAT IS PRODUCT EVALUATION? IT REFERS TO SOME PERFORMANCE EXHIBITED BY A STUDENT THROUGH WHICH HE SHOWS HIS ABILITY, INTEREST, ATTITUDE, OR ADJUSTMENT (I.E., WHEN THE STUDENT SPONTANEOUSLY ENGAGES IN A WIDE RANGE OF GOOD READING).

BECAUSE OF THE DIFFICULTIES IN MEASURING THE PRODUCTS OF EDUCATION, WHICH REPRESENT THE ULTIMATE OBJECTIVES OF THE EDUCATIONAL ENTERPRISE, THERE IS A STRONG TENDENCY BY EDUCATORS TO RETREAT TO APPRAISING THE STRUCTURE OF THE SCHOOL SYSTEM AND THE PROCESSES GOING ON WITHIN. NEVERTHELESS, IT IS THE PRODUCT OUTCOME TYPE OF EVALUATION WHICH WILL BE DISCUSSED FURTHER IN THIS PAPER.

HOW DO YOU PLAN FOR THE PRODUCT TYPE OF EVALUATION?

PROBABLY THE FIRST THING WE SHOULD DO IS TAKE A LOOK AT THE NECESSARY STEPS IN THE EVALUATION PROCESS, AND THEN GO BACK AND FOCUS ON ONE OR TWO OF THE MOST DIFFICULT STEPS AS TIME WILL PERMIT.

HOWEVER, BEFORE WE GET INTO THE "STEPS," I WOULD LIKE TO EMPHASIZE AT LEAST TWO POINTS. FIRST, THE DEVELOPMENT OF AN EVALUATION PLAN RELATIVE TO ANY EDUCATIONAL PROGRAM EITHER BEGINS WHEN YOU FIRST BEGIN TO THINK ABOUT THE PROGRAM OR EVEN BEFORE. (I.E., YOU MAY WANT TO CONDUCT A FEASIBILITY STUDY TO IDENTIFY THE UNMET NEEDS.)

THE SECOND POINT DEALS WITH OBJECTIVITY. AS WE THINK OF EVALUATION, WE SHOULD NOT ATTEMPT TO PROVE ANY PARTICULAR POINT OF VIEW. OUR EVALUATION PROCEDURES MUST BE CARRIED OUT HONESTLY AND WITH NO PRECONCEIVED NOTIONS OF EXACTLY WHAT THE END RESULT OUGHT TO BE OR MUST BE. ENOUGH OF THAT! NOW, LET'S TAKE A LOOK AT THE VARIOUS STEPS ONE GOES THROUGH IN USING THE PRODUCT OUTCOME TYPE OF EVALUATION.

STEP 1. DEFINE EDUCATIONAL OBJECTIVES (PREFERABLY IN TERMS OF SPECIFIC UNITS OF OUTPUT) TO BE ACHIEVED THROUGH THE EXPERIENCES BEING EVALUATED.

STEP 2. TRANSLATION OF THE EDUCATIONAL GOALS INTO DESCRIPTIONS OF BEHAVIOR WHICH WILL BE DISPLAYED IF THE OBJECTIVES ARE ACHIEVED.

STEP 3. IDENTIFICATION OF SITUATIONS IN WHICH THE PRESENCE OR ABSENCE OF THE DESIGNATED BEHAVIOR CAN BE OBSERVED AND RECORDED.

STEP 4. ESTABLISHMENT OF SOME TYPE OF INTERPRETIVE DEVICE (STANDARD OR NORM) WHICH CAN BE USED IN MEASURING DESIRED GROWTH.

STEP 5. APPLICATION OF THE EVALUATION METHODS DERIVED FROM STEPS 3 AND 4 TO ALL THOSE PARTICIPATING IN THE PROGRAM.

STEP 6. ANALYSIS OF EVIDENCE OBTAINED BY THE EVALUATION DEVICES IN TERMS OF PROGRESS TOWARD THE DEFINED OBJECTIVES.

STEP 7. STATEMENT OF CONCLUSIONS REGARDING EFFECTIVENESS IN TERMS OF THE EXTENT TO WHICH OBJECTIVES WERE ACHIEVED.

AT THIS TIME, I WOULD LIKE TO REFER BACK TO STEPS 1 AND 2: DEFINING GOALS AND TRANSLATING THEM INTO DESCRIPTIONS OF BEHAVIOR. THE PROCESS OF ENUMERATING THE GOALS OF THE PROPOSED PROGRAM IS PRIMARILY A RATIONALE AND JUDGMENTAL MATTER. JUDGMENTS MAY BE MADE BY VARIOUS GROUPS AND GATHERED BY VARIOUS MEANS. (I.E., CONFERENCE AND COMMITTEE DISCUSSION.)

AS A RULE, THE INITIAL GOALS WHICH EMERGE DO NOT PROVIDE A SUITABLE BASIS FOR A PROGRAM OF EVALUATION, SINCE THEY ARE USUALLY EXPRESSED IN VERY GENERAL TERMS. GOALS EXPRESSED IN GENERAL TERMS FREQUENTLY ARE VAGUE, CONVEY DIFFERENT MEANINGS TO DIFFERENT READERS, AND ARE FAR REMOVED FROM THE PRACTICAL OPERATION EITHER OF TEACHING OR APPRAISING.

THE DIFFICULT TASK IS THAT OF TRANSLATING BROAD, VAGUE GOALS INTO MORE SPECIFIC OBJECTIVES OR OUTCOMES. THE FOLLOWING QUALITIES ARE NEEDED IF THE OBJECTIVES ARE TO PROVIDE A USEFUL FRAMEWORK FOR APPRAISING THE RESULTS OF ANY EDUCATIONAL EXPERIENCE:

A. THE SPECIFIC OBJECTIVES ARE AGREED UPON AS REPRESENTING THE GENERAL GOALS.

B. THE SPECIFIC OBJECTIVES HAVE COMMON MEANING TO ALL READERS.

C. THE SPECIFIC OBJECTIVES ARE CLOSELY RELATED TO STUDENT BEHAVIOR.

THE GREATEST EXAMPLE OF THE PRODUCT EVALUATION APPROACH IS THE NATIONAL EDUCATIONAL ASSESSMENT PROJECT WHICH WAS UNDER THE DIRECTION OF RALPH TYLER. AS YOU PROBABLY KNOW, INSTRUMENTS ARE BEING OR HAVE BEEN CONSTRUCTED BY FOUR LEADING TEST DEVELOPMENT AGENCIES IN THE FIELDS OF:

A. READING AND THE LANGUAGE ARTS
B. SCIENCE
C. MATHEMATICS
D. SOCIAL STUDIES
E. CITIZENSHIP
F. FINE ARTS
G. VOCATIONAL EDUCATION

LET'S JUST FOCUS ON THE ASSESSMENT IN THE FIELD OF SCIENCE FOR THE PURPOSE OF THIS PAPER. THE DELINEATION OF THE MAJOR OBJECTIVES INTO PERFORMANCE TERMS HELPS TO ILLUSTRATE HOW IT CAN BE DONE. OF COURSE, THE WHOLE PROJECT IS AIMED AT REFLECTING THE CONTRIBUTIONS OF SCIENCE TO THE EDUCATION OF STUDENTS WHICH THE SCHOOLS ARE SERIOUSLY SEEKING TO ATTAIN. FOUR MAJOR GOALS OF SCIENCE EDUCATION WERE ARRIVED AT BY A DISTINGUISHED PANEL OF NATIONAL LEADERS IN THE FIELD.

THESE FOUR GOALS ARE THAT STUDENTS SHOULD COME TO:

I. KNOW THE FUNDAMENTAL FACTS AND PRINCIPLES OF SCIENCE.

II. POSSESS THE ABILITIES AND SKILLS NEEDED TO ENGAGE IN THE PROCESS OF SCIENCE.

III. UNDERSTAND THE INVESTIGATIVE NATURE OF SCIENCE.

IV. HAVE ATTITUDES ABOUT AND APPRECIATIONS OF SCIENTISTS, SCIENCE, AND THE CONSEQUENCES OF SCIENCE THAT STEM FROM ADEQUATE UNDERSTANDING.

LET US SEE, FOR INSTANCE, HOW GOAL II WAS TRANSLATED INTO BEHAVIORAL TERMS. NOTICE THEY HAVE IDENTIFIED FOR DEMONSTRATION, TEN ABILITIES AND SKILLS NECESSARY TO ENGAGE IN THE PROCESSES OF SCIENCE.

<u>GOAL II. POSSESS THE ABILITIES AND SKILLS NEEDED TO ENGAGE IN THE PROCESS OF SCIENCE.</u>

1. ABILITY TO IDENTIFY AND DEFINE A SCIENTIFIC PROBLEM.
2. ABILITY TO SUGGEST OR RECOGNIZE A SCIENTIFIC HYPOTHESIS.
3. ABILITY TO PROPOSE OR SELECT VALIDATING PROCEDURES, BOTH LOGICAL AND EMPIRICAL.
4. ABILITY TO OBTAIN REQUISITE DATA.
5. ABILITY TO INTERPRET DATA.
6. ABILITY TO CHECK THE LOGICAL CONSISTENCY OF HYPOTHESES WITH RELEVANT LAWS, FACTS, OBSERVATIONS, OR EXPERIMENTS.
7. ABILITY TO REASON QUANTITATIVELY AND SYMBOLICALLY.
8. ABILITY TO DISTINGUISH AMONG FACT, HYPOTHESIS, AND OPINION, THE RELEVANT FROM THE IRRELEVANT, AND THE MODEL FROM THE OBSERVATIONS THE MODEL WAS DEVISED TO DESCRIBE.
9. ABILITY TO READ SCIENTIFIC MATERIALS CRITICALLY.
10. ABILITY TO EMPLOY SCIENTIFIC LAWS AND PRINCIPLES IN FAMILIAR OR UNFAMILIAR TERMS.

WHAT DESIRABLE BEHAVIOR DID THEY ENUMERATE RELATIVE TO THE GOAL DEALING WITH ATTITUDES AND APPRECIATION? WELL, LET'S TAKE A LOOK.

GOAL IV. HAVE ATTITUDES ABOUT AND APPRECIATIONS OF SCIENTISTS, SCIENCE, AND THE CONSEQUENCES OF SCIENCE THAT STEM FROM ADEQUATE UNDERSTANDING.

1. RECOGNIZE THE DISTINCTION BETWEEN SCIENCE AND ITS APPLICATIONS.
2. HAVE ACCURATE ATTITUDES ABOUT SCIENTISTS.
3. UNDERSTAND THE RELATIONSHIP BETWEEN SCIENCE AND MISCONCEPTIONS OR SUPERSTITIONS.
4. BE READY AND WILLING KNOWINGLY TO APPLY AND UTILIZE BASIC SCIENTIFIC PRINCIPLES AND APPROACHES, WHERE APPROPRIATE IN EVERYDAY LIFE.
5. BE INDEPENDENTLY CURIOUS ABOUT AND PARTICIPATE IN SCIENTIFIC ACTIVITIES.

THE WHOLE POINT OF THE REFERENCE TO THE NATIONAL EDUCATIONAL ASSESSMENT PROJECT IS TO DEMONSTRATE HOW SOME PEOPLE HAVE TRANSLATED OR EXPANDED GOALS INTO A DEFINITE CHANGE RESULTING FROM AN EDUCATIONAL EXPERIENCE.

I AM NOT SUGGESTING THIS IS AN EASY TASK, BUT I AM SUGGESTING IT CAN BE DONE. WE CANNOT SIT BACK AND LET A FEW PEOPLE IN THE GRADUATE SCHOOLS AND UNIVERSITIES DO IT FOR US. NEITHER CAN WE DISREGARD OUR PROFESSIONAL RESPONSIBILITY BY SAYING WE DO NOT HAVE THE INSTRUMENTS TO MEASURE ALL OF THE QUALITATIVE CHANGES IN BEHAVIOR WHICH MAY OCCUR AMONG STUDENTS. THE ONLY WAY WE ARE GOING TO CRACK THIS "NUT" IS TO TRY IT.

WHEN SHOULD EVALUATION BE ATTEMPTED?

THERE ARE MANY SITUATIONS IN EDUCATION IN WHICH EVALUATION CAN BE USED. HOWEVER, I THINK THE MOST APPROPRIATE USE, FROM OUR POINT OF VIEW, IS ITS APPLICATION TO THE SO-CALLED PILOT PROGRAM. AS YOU WELL KNOW, THE PURPOSE OF

A PILOT PROGRAM IS TO DETERMINE WHETHER AN ACTIVITY WILL LEAD TO INCREASED KNOWLEDGE AND/OR SKILLS FOR THOSE EXPOSED TO THE PROGRAM. IF THOSE STUDENTS EXPOSED SHOW SIGNIFICANT GAINS AS A RESULT OF THE PROGRAM, THEN IT CAN BE INCORPORATED INTO THE OVERALL CURRICULUM ON A PERMANENT BASIS. IT ENABLES US TO TEST A PARTICULAR APPORACH WITHOUT MAKING A FULL-SCALE COMMITMENT.

THE PURPOSE OF ANY PILOT PROGRAM IS DEFEATED IF IT IS NOT ADEQUATELY EVALUATED. THE RESULT, OR OUTCOME, OF A PILOT PROGRAM MUST BE EVALUATED IN TERMS OF SPECIFIC CRITERIA BEFORE ONE CAN BE ASSURED OF ITS PERMANENT INCLUSION IN THE CURRICULUM.

THUS, EVALUATION MUST BE AN INTEGRAL PART OF A PILOT PROGRAM. IN DESIGNING THE PROGRAM, EVALUATION NEEDS TO BE DESIGNED IN. IT SHOULD NOT COME AS AN AFTER-THOUGHT TO AN ALREADY EXISTING PROGRAM, BUT AS A BASIC PART OF THE PROGRAM ITSELF.

WHAT IS THE PRESENT TREND IN EVALUATION?

THE WAY I WOULD LIKE TO ANSWER THIS QUESTION IS TO VERY BRIEFLY ENUMERATE SOME OF THE HIGH LIGHTS IN THE HISTORY OF EVALUATION.

EVALUATION OF EDUCATION HAS A HISTORY AS LONG AS THAT OF EDUCATION ITSELF.

1. APPRAISING HUMAN BEHAVIOR BECAME COMMON ONLY IN THE LATTER PART OF THE 19TH CENTURY.
2. ACCREDITATION OF SECONDARY SCHOOLS BY REGIONAL GROUPS OF COLLEGES BEGAN ABOUT 1900.
3. TEST AND MEASUREMENT MOVEMENT RECEIVED GREAT IMPETUS DURING 1920'S.
4. A PENNSYLVANIA STUDY CONDUCTED ABOUT 1928-38 BY WOOD AND LEARNED SET OUT TO REVIEW THE SYSTEM OF SCHOOLING IN THE LIGHT OF OBJECTIVE EVIDENCE. THE PROJECT SEEMED TO MEASURE SUPERFICIAL KNOWLEDGE OF FACTS RATHER THAN DEEP KNOWLEDGE AND THOUGHT PROCESSES. WOOD LATER ESTABLISHED THE COOPERATIVE TEST SERVICE, WHILE LEARNED ESTABLISHED THE GRADUATE RECORD EXAMINATION.

5. SINCE WORLD WAR II THE FOCUS OF INTEREST AND EFFORT APPEARS TO HAVE SHIFTED AWAY FROM A RESEARCH ORIENTED ATTEMPT TO DEVELOP NEW AND BETTER EVALUATION PROCEDURES TO AN ACTION RESEARCH ORIENTED TO INVOLVE SCHOOL PERSONNEL IN EVALUATING THEIR OWN PROGRAMS. THIS TYPE OF SELF EVALUATION HAS BEEN DEFENDED ON THE GROUND THAT THE EVALUATION EXPERIENCE WILL BE A VALUABLE LEARNING EXPERIENCE FOR THE TEACHERS WHO ENGAGE IN IT.
6. RECENT LITERATURE, HOWEVER, APPEARS TO INDICATE A STRONG RESURGENCE OF THE RESEARCH ORIENTATION TYPE OF EVALUATION WITH EMPHASIS ON THE PRODUCT.
7. APPEARING ON THE HORIZON IS THE CHALLENGE OF PROGRAM ANALYSIS OR SYSTEM ANALYSIS. THIS TYPE OF APPROACH HAS BEEN GIVEN IMPETUS BY ITS SUCCESSFUL USE IN INDUSTRY AND THE AVAILABILITY OF TOOLS, SUCH AS COMPUTERS. SYSTEMS ANALYSIS IS A COST-BENEFITED MANAGEMENT TYPE OF PROCESS. ATTACHING NEW PROGRAMS, ESPECIALLY THE FEDERAL PROGRAMS, TO THE ALREADY EXISTING SCHOOL ENTERPRISE IS LIKE HANGING CHRISTMAS BULBS ON A CHRISTMAS TREE. IT BECOMES VERY DIFFICULT TO MEASURE THE EFFECT OF ANY ONE OF THESE ATTACHED PROGRAMS ON THE EXISTING EDUCATIONAL ENTERPRISE. SYSTEMS ANALYSIS HOLDS PROMISE OF DOING THIS JOB. HOWEVER, IN ITS EMBRYOTIC STAGE IT TOO SEEMS TO BE CONCENTRATING ON STRUCTURES AND PROCESSES. WHAT IS EVENTUALLY HOPED FOR IS AN INTERFACING OF THE THREE DOMAINS: STRUCTURE, PROCESS, AND PRODUCT.

CONCLUSION

AS I SAID IN THE BEGINNING, EVALUATION IS A VERY BROAD TOPIC AND IT'S DIFFICULT TO COVER ALL OF ITS RAMIFICATIONS IN SUCH A SHORT LENGTH OF TIME. I HAD TRIED TO FOCUS ON THOSE AREAS WHICH I THOUGHT WOULD BE MOST PERTINENT TO YOUR WORK TODAY. I HAVE ATTEMPTED TO PIN-POINT SOME OF THE PRINCIPLES AND PRACTICES WHICH I THOUGHT WOULD BE OF THE GREATEST VALUE TO YOU. I TRIED TO CENTER ON THE TRANSLATION OR EXPANSION OF GOALS INTO PERFORMANCE TERMS AS THEY RELATE TO THE "PRODUCT TYPE" EVALUATION. HOWEVER, YOU MUST REMEMBER THERE ARE SEVERAL OTHER STEPS IN THE EVALUATION PROCESS WHICH WERE NOT TREATED AT ALL. THESE STEPS CAN ALSO BECOME QUITE STICKY. ONCE YOU HAVE EXPANDED YOUR GOALS INTO PERFORMANCE TERMS, THEN YOU WILL BE FACED WITH THE FOLLOWING TASKS:

A. THE SELECTION OR DEVELOPMENT OF INSTRUMENTS OR TESTS TO COLLECT YOUR DATA.

B. THE ORGANIZATION OF YOUR DATA.

C. THE ANALYSIS OF YOUR DATA.

D. THE INTERPRETATION OF THE RESULTS.

UNDOUBTEDLY, SOME OF THESE TASKS WILL PROBABLY CALL FOR SPECIAL COMPETENCIES WHICH NOT ALL OF US POSSESS. FOR THE BENEFIT OF THOSE OF YOU WHO WOULD LIKE TO PURSUE THIS TOPIC OF EVALUATION AT GREATER LENGTH, I HAVE PREPARED A BIBLIOGRAPHY TO DISTRIBUTE AMONG YOU. IT CAN BE USED AS A GUIDE-POST IN YOUR READING.

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TABLE VII

REAL PROPERTY ASSESSMENTS AS PER CENT OF TRUE VALUE AND LIBRARY EXPENDITURES PER PUPIL

Real Property Assessment as Per Cent of True Value*	Number of Schools	Percentages of Schools, Ranked According to Average Library Expenditures Per Pupil, 1966-67**									
		Less than $1.00	$1.00-1.99	$2.00-2.99	$3.00-3.99	$4.00-4.99	$5.00-5.99	$6.00-6.99	$7.00-7.99	$8.00-8.99	$9.00 and over
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Less than 5%	12	8	17	17	33	0	0	0	0	0	25
5% - 7%	27	4	30	22	30	7	0	0	0	0	7
8% - 10%	237	3	24	29	20	6	2	1	3	1	11
11% - 13%	350	6	23	21	18	8	2	1	2	1	18
14% - 16%	290	7	22	22	10	8	4	6	1	1	19
17% - 19%	191	6	26	30	8	3	1	3	5	1	17
20% - 22%	92	4	17	28	13	9	3	3	2	0	21
23% - 25%	7	29	43	14	14	0	0	0	0	0	0
26% - 28%	0	0	0	0	0	0	0	0	0	0	0
29% - 31%	29	14	17	14	21	8	3	10	3	3	7

*McKinney and Lowry, Mississippi Assessment-Sales Ratio Study, 1962.

**Data obtained from individual school reports to the Mississippi Accrediting Commission, and the State Accrediting Commission, 1966-67.

TABLE VIII

REAL PROPERTY ASSESSMENTS AS PER CENT OF TRUE VALUE AND TEACHER-PUPIL RATIO

Real Property Assessment as Per Cent of True Value*	Number of Schools	Percentages of Schools, Ranked According to the Average Ratio of Teachers to Pupils, 1966-67**									
		1 to less than 20	1 to 20-21	1 to 22-23	1 to 24-25	1 to 26-27	1 to 28-29	1 to 30-31	1 to 32-33	1 to 34-35	1 to 36 and over
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Less than 5%	12	0	17	0	8	8	33	9	8	0	17
5% - 7%	27	26	15	11	11	15	0	11	0	4	7
8% - 10%	237	23	8	12	16	15	8	7	6	1	4
11% - 13%	350	17	11	12	15	10	9	9	5	5	7
14% - 16%	290	23	10	7	12	10	11	9	7	4	7
17% - 19%	191	25	10	10	6	9	13	10	8	2	7
20% - 22%	92	28	12	5	9	8	11	7	7	6	7
23% - 25%	7	0	14	14	14	0	29	0	29	0	0
26% - 28%	0	0	0	0	0	0	0	0	0	0	0
29% - 31%	29	14	14	21	21	14	3	3	7	3	0

*McKinney and Lowry, Mississippi Assessment-Sales Ratio Study, 1962.

**Data obtained from individual school reports to the Mississippi Accrediting Commission, the State Accrediting Commission, and the Mississippi State Department of Education, 1966-67.

TABLE IX

REAL PROPERTY ASSESSMENTS AS PER CENT OF TRUE VALUE AND CURRICULAR OFFERINGS OF ACCREDITED SECONDARY SCHOOLS

Real Property Assessment as Per Cent of True Value*	Number of Schools	Percentages of Schools, Ranked According to Secondary Curricular Offerings (High School Units of Credit), 1966-67**									
		Less than 20	20-23	24-27	28-31	32-35	36-39	40-43	44-47	48-51	52 and over
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Less than 5%	12	0	0	0	25	0	0	0	0	0	75
5% - 7%	27	0	0	7	30	0	4	0	0	0	59
8% - 10%	237	3	4	6	9	4	5	1	1	1	66
11% - 13%	350	6	3	7	7	4	5	1	1	1	65
14% - 16%	290	3	4	8	7	5	3	2	1	1	66
17% - 19%	191	8	2	5	3	4	3	1	3	1	70
20% - 22%	92	4	5	3	5	8	3	2	1	1	68
23% - 25%	7	0	0	0	0	0	0	0	0	0	100
26% - 28%	0	0	0	0	0	0	0	0	0	0	0
29% - 31%	29	21	0	0	1	0	0	3	3	0	72

*McKinney and Lowry, Mississippi Assessment-Sales Ratio Study, 1962.

**Data obtained from individual secondary school reports to the Mississippi Accrediting Commission, and the State Accrediting Commission, 1966-67.

TABLE X

REAL PROPERTY ASSESSMENTS AS PER CENT OF TRUE VALUE AND PERCENTAGES OF PUBLIC SCHOOL DROPOUTS IN ONE YEAR

Real Property Assessment as Per Cent of True Value*	Number of Schools	Percentages of Schools, Ranked According to the Percentage of Dropouts in One Year, 1966-67**									
		Less than 1%	1.0%-1.49%	1.5%-1.99%	2.0%-2.49%	2.5%-2.99%	3.0%-3.49%	3.5%-3.99%	4.0%-4.49%	4.5%-4.99%	5% and over
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Less than 5%	12	25	17	17	0	0	8.	8	0	0	25
5% - 7%	27	30	7	11	0	4	0	7	0	4	37
8% - 10%	237	29	6	5	5	4	4.	5	1	5	36
11% - 13%	350	21	10	5	7	6	5	5	3	4	34
14% - 16%	290	24	7	4	5	6	7	3.	4	3	37
17% - 19%	191	24	5	8	7	9	3	3	4	1	36
20% - 22%	92	22	7	8	7	4	3	3	7	1	38
23% - 25%	7	0	42	0	29	0	0	0	0	0	29
26% - 28%	0	0	0	0	0	0	0	0	0	0	0
29% - 31%	29	14	10	3	3	0	0	7	7	3	53

*McKinney and Lowry, Mississippi Assessment-Sales Ratio Study, 1962.

**School Dropouts By Reason, 1966-67, A Report of the Division of Administration and Finance, Mississippi State Department of Education.

TABLE XI

REAL PROPERTY ASSESSMENTS AS PER CENT OF TRUE VALUE AND AVAILABILITY OF CERTAIN SPECIAL SERVICES TO STUDENTS

Real Property Assessment as Per Cent of True Value*	Number of Schools	Percentages of Schools, Ranked According to Availability of Certain Special Services to Students**																	
		Guidance		Vocal Music		Instrumental Music		School Health		Physical Education		Art		Foreign Language		Summer School		Special Education	
		yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Less than 5%	12	42	58	33	67	50	50	0	100	33	67	8	92	33	67	17	83	8	92
5% - 7%	27	70	30	48	52	74	26	7	93	56	44	15	85	33	67	44	56	15	85
8% - 10%	237	50	50	64	36	73	27	4	96	45	55	13	87	33	67	42	58	18	82
11% - 13%	350	58	42	57	43	55	45	7	93	49	51	20	80	30	70	30	70	8	92
14% - 16%	290	53	47	56	44	56	44	10	90	44	56	13	87	24	76	16	84	12	88
17% - 19%	191	49	51	70	30	47	53	8	92	37	63	35	65	26	74	39	61	21	79
20% - 22%	92	52	48	55	45	58	42	8	92	44	56	11	89	39	61	26	74	21	79
23% - 25%	7	14	86	86	14	57	43	0	100	57	43	0	100	14	86	86	14	0	100
26% - 28%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29% - 31%	29	34	66	79	21	69	31	0	100	83	17	34	66	21	79	62	38	28	72

*McKinney and Lowry, Mississippi Assessment-Sales Ratio Study, 1962.

**Data obtained from individual school reports to the Mississippi Accrediting Commission, and the State Accrediting Commission, 1966-67.

Table IX deals with curricular offerings of accredited secondary schools. No attempt was made to differentiate between secondary schools having three grades and those having four grades. Most senior high schools (grades 10-12) in the state offer those courses which are ordinarily applicable to the ninth grade, even though ninth grade students are not enrolled. This is necessary because of failures in junior high school and transfers from other schools. Consequently, the investigator determined that any differences in curricular offerings between senior high schools (grades 10-12) and high schools (grades 9-12) would be insignificant.

Table XI reports data relating to special services. Because psychological services and public kindergartens were found to be nonexistent in the public schools, they were omitted from Table XI. In addition, the category, Special Education, represents the summary of findings from the survey form (see Appendix).

II. ANALYSIS OF RESULTS

Correlations between the independent variable, real property assessments, and the quality education factors listed in Chapter II were computed through the use of the Pearson Product-Moment formula. Correlations between real property assessments and two of the dependent variables, teachers' professional training and special services, were not obtained because of insufficient data in these areas.

As indicated in Table XII, the correlations obtained are from low to substantial. A substantial correlation, .638, between real property assessments and per pupil expenditures was found. It would appear, then, that real property assessments best predict the per pupil expenditure level. Real property assessments would be a moderate predictor of instructional salaries, teachers' professional experience and curricular offerings and have slight relationship with library expenditures, teacher-pupil ratio and school dropouts.

Further analysis indicated to the researcher that there were several factors which might account partially for the low level of relationship between real property assessments and most of the nine quality education factors. First, wealthy school districts do not find it necessary to assess real property at a high percentage of true value in order to maintain schools at least as good as the average Mississippi school. On the other hand, less wealthy districts may be forced to assess real property at a higher percentage of true value in order to keep pace with wealthier districts. Second, some poor districts have a disproportionately high percentage of the total state school population, which places them in an extremely difficult financial position. Third, the minimum foundation program of education in Mississippi is designed to provide equal education opportunities for the youth of the state, regardless of the relative wealth of the individual school districts. Finally, federal funds have, in many districts, completely distorted the picture of local educational finance. For example, some extremely poor school districts spent much more for libraries than did other more wealthy districts. Since accrediting reports do not indicate how much federal money was involved, it is impossible to isolate these funds to get a true indication of local support.

TABLE XII

PEARSON PRODUCT-MOMENT CORRELATIONS OBTAINED BETWEEN REAL PROPERTY ASSESSMENTS AND EACH OF SEVEN QUALITY EDUCATION FACTORS

Selected Educational Factors	Correlations with Real Property Assessments
Expenditures Per Pupil	.638
Instructional Salaries	.562
Teachers' Professional Experience	.431
Library Expenditures	.368
Teacher-Pupil Ratio	.326
Curricular Offerings	.412
School Dropouts	.392

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

I. CONCLUSIONS

Two conclusions seem warranted as a result of the study. They are as follows:

1. The relationships between real property assessment practices and quality education as measured by the educational factors used in this study range from low to substantial.

2. The level of real property assessments is, at best, only a moderately valid predictor of quality education.

II. RECOMMENDATIONS

It is recommended that:

1. Real property assessments be equalized throughout the state at a considerably higher percentage of true value than is now practiced, making it possible for school districts to more adequately finance public education.

2. A study be made of the effects on public education of a statewide real property assessment at true value, as the state constitution and statutes require.

3. The level of real property assessments be considered in distributing state education funds, rewarding districts whose assessments are at a higher ratio to true value and penalizing districts whose assessments are at a lower ratio to true value.

APPENDIX

RELATIONSHIP OF REAL PROPERTY ASSESSMENT PRACTICES TO QUALITY EDUCATION

Survey Form

County_____

School District_____

School_____

1-7. Blank for program

School Identification

8	9	10	11	12
____	____	____	____	____

13. Type of school district

1. County
3. Municipal separate
5. Consolidated

14. Type of school

1. Elementary (grades 1-6)
2. Elementary (grades 1-8)
3. Junior High (grades 7-8)
4. Junior High (grades 7-9)
5. Junior-Senior High (grades 7-12)
6. High School (grades 9-12)
7. Senior High (grades 10-12)

Other_____
grades included

15. Is school accredited?

1. Yes
5. No

16. If accredited, by whom?

1. State only

5. State and regional

17. Independent variable (real property assessment level)

1. Less than 5%

2. 5% - 7%

3. 8% - 10%

4. 11% - 13%

5. 14% - 16%

6. 17% - 19%

7. 20% - 22%

8. 23% - 25%

9. 26% - 28%

10. 29% - 31%

18-20. For possible future use with other independent variables

21. Expenditures per pupil

1. Less than $175

2. $175 - $199

3. $200 - $224

4. $225 - $249

5. $250 - $274

6. $275 - $299

7. $300 - $324

8. $325 - $349

9. $350 - $374

10. $375 and over

22. Instructional salaries (average)

1. Less than $3,700
2. $3,700 - $3,899
3. $3,900 - $4,099
4. $4,100 - $4,299
5. $4,300 - $4,499
6. $4,500 - $4,699
7. $4,700 - $4,899
8. $4,900 - $5,099
9. $5,100 - $5,299
10. $5,300 and over

23. Teachers' professional training - 'AAA' certification _____ number

1. Less than 10%
2. 10% - 19%
3. 20% - 29%
4. 30% - 39%
5. 40% - 49%
6. 50% - 59%
7. 60% - 69%
8. 70% - 79%
9. 80% - 89%
10. 90% -100%

24. Teachers' professional training - 'AA' certification _____ number

1. Less than 10%
2. 10% - 19%
3. 20% - 29%
4. 30% - 39%
5. 40% - 49%
6. 50% - 59%
7. 60% - 69%
8. 70% - 79%
9. 80% - 89%
10. 90% -100%

25. Teachers' professional training - 'A' certification _____ number

1. Less than 10%
2. 10% - 19%
3. 20% - 29%
4. 30% - 39%
5. 40% - 49%
6. 50% - 59%
7. 60% - 69%
8. 70% - 79%
9. 80% - 89%
10. 90% -100%

26. Teachers' professional training - 'B' certification

number

1. Less than 10%
2. 10% - 19%
3. 20% - 29%
4. 30% - 39%
5. 40% - 49%
6. 50% - 59%
7. 60% - 69%
8. 70% - 79%
9. 80% - 89%
10. 90% -100%

27. Teachers' professional training - 'C' certification

number

1. Less than 10%
2. 10% - 19%
3. 20% - 29%
4. 30% - 39%
5. 40% - 49%
6. 50% - 59%
7. 60% - 69%
8. 70% - 79%
9. 80% - 89%
10. 90% -100%

28. Teachers' professional training - 'D' certification _____ number

1. Less than 10%
2. 10% - 19%
3. 20% - 29%
4. 30% - 39%
5. 40% - 49%
6. 50% - 59%
7. 60% - 69%
8. 70% - 79%
9. 80% - 89%
10. 90% -100%

29. Teachers' professional training - 'E' certification _____ number

1. Less than 10%
2. 10% - 19%
3. 20% - 29%
4. 30% - 39%
5. 40% - 49%
6. 50% - 59%
7. 60% - 69%
8. 70% - 79%
9. 80% - 89%
10. 90% -100%

30. Teachers' professional experience (average)

1. Less than 5 years
2. 5 - 6 years
3. 7 - 8 years
4. 9 -10 years
5. 11-12 years
6. 13-14 years
7. 15-16 years
8. 17-18 years
9. 19-20 years
10. 21 years and over

31. Library expenditures per pupil

1. Less than $1.00
2. $1.00 - $1.99
3. $2.00 - $2.99
4. $3.00 - $3.99
5. $4.00 - $4.99
6. $5.00 - $5.99
7. $6.00 - $6.99
8. $7.00 - $7.99
9. $8.00 - $8.99
10. $9.00 and over

32. Teacher-pupil ratio

1. Less than 20
2. 20 - 21
3. 22 - 23
4. 24 - 25
5. 26 - 27
6. 28 - 29
7. 30 - 31
8. 32 - 33
9. 34 - 35
10. 36 and over

33. Curricular offerings (high school units)

1. Less than 20
2. 20 - 23
3. 24 - 27
4. 28 - 31
5. 32 - 35
6. 36 - 39
7. 40 - 43
8. 44 - 47
9. 48 - 51
10. 52 and over

34. School dropouts (1966-67)

1. Less than 1%

2. 1.0% - 1.49%

3. 1.5% - 1.99%

4. 2.0% - 2.49%

5. 2.5% - 2.99%

6. 3.0% - 3.49%

7. 3.5% - 3.99%

8. 4.0% - 4.49%

9. 4.5% - 4.99%

10. 5% and over

Enrollment_____

35. Guidance services

1. Yes

5. No

36. If yes, ratio of guidance personnel to pupils

1. 1:100

2. 1:200

3. 1:300

4. 1:400

5. 1:500

6. 1:600

7. 1:700

8. 1:800

9. 1:900

10. 1:1,000 and over

37. Vocal music program

1. Yes

5. No

38. Instrumental music program

1. Yes

5. No

39. Psychological services

1. Yes

5. No

40. School health program (school nurse)

1. Yes

5. No

41. Physical education program

1. Yes

5. No

42. Art program

1. Yes

5. No

43. Foreign language program

1. Yes

5. No

44. Summer school program

1. Yes

5. No

45. Special education program (mental retardation)

1. Yes

5. No

46. Special education program (exceptional children)

1. Yes

5. No

47. Special education program (physically handicapped)

1. Yes

5. No

48. Public kindergarten

1. Yes

5. No