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ABSTRACT

This is the technical report of a national survey of approximately 10,000 teachers, principals, superintendents, and state and local district supervisors. The report includes a description of the sample design, instrument development, examples of the survey forms, data collection, file preparation, and analysis procedures used in the survey as well as the results of the study. Topics covered in the report include state and local supervision; course offerings; federally-funded curriculum development efforts; textbook usage; instructional materials and techniques; facilities and equipment; teachers' needs for assistance; information sources; and factors affecting science, mathematics, and social studies education. Among the findings: (1) The amount of time devoted to science and social studies instruction in the elementary grades is considerably less than that spent on reading and mathematics instruction; (2) Federally-funded science curriculum materials are being used in a majority of the nation's school districts, the usage of federally-funded mathematics and social studies curriculum materials is much lower; (3) Sizable numbers of teachers would like additional assistance in obtaining information about instructional materials, learning new teaching methods, implementing the discovery/inquiry approach, and using manipulative materials. (Author/MA)

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REPORT OF THE 1977

NATIONAL SURVEY OF SCIENCE, MATHEMATICS,

AND SOCIAL STUDIES EDUCATION

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Research Triangle Park, North Carolina

March, 1978

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Center for Educational Research and Evaluation

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FINAL REPORT

REPORT OF THE 1977 NATIONAL SURVEY OF SCIENCE, MATHEMATICS, AND SOCIAL STUDIES EDUCATION

by

Iris R. Weiss

Prepared for

National Science Foundation

under

Contract No. C7619848

ACKNOWLEDGMENTS

The 1977 National Survey of Science, Mathematics, and Social Studies Education was conducted by the Research Triangle Institute (RTI) under contract to the National Science Foundation (NSF). The survey involved substantial efforts from many people within RTI. Dr. Iris Weiss of RTI's Center for Educational Research and Evaluation was Project Director, and was responsible for instrument development, analysis, and reporting as well as general project administration. Ms. Jilene Weber was responsible for drawing the sample and Dr. David Myers coordinated data processing activities. Ms. Carol Place, Mr. Larry Conaway, Ms. Beverlie McGhee, Ms. Millie Sparks, Mr. Alan Murray, Ms. Lois Bressler, Mr. Jay Jaffee, Mr. Michael Kalt, and Ms. Karen Edmonds also contributed substantially to the conduct of the study. Secretarial support was provided by Ms. Celestine Ramsey and Ms. Judy Bolin.

Personnel from the National Science Foundation were actively involved in various aspects of the survey; these include Dr. Arlen Gullickson, Dr. Linda Ingison, Dr. Howard Jones, Dr. Al Buccino, and Dr. Charles Wallace. In addition, consultants to the project assisted in various aspects of the study. In particular, Dr. David Butts, Dr. Karen Cohen, Dr. Donald Dessart, Dr. Thomas Rowan, Dr. Phillip Schlechty, and Dr. Wayne Welch provided valuable input during the instrument development and reporting phases of the project.

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Chapter 1

Introduction

A. Background and Purpose of the Study

The National Science Foundation defined the areas of interest for the National Survey of Science, Mathematics and Social Studies by listing the following questions.[1]

1. What science courses are currently offered in schools?[2]

2. What local and state guidelines exist for the specification of minimal science experiences for students?

3. What texts, laboratory manuals, curriculum kits, modules, etc., are being used in science classrooms?

4. What share of the market is held by specific textbooks at the various grade levels and subject areas?

5. What regional patterns of curriculum usage are evident? What patterns exist with respect to urban, suburban, rural, and other geographic variables?

6. What "hands-on" materials, such as laboratory or activity centered materials, are being used? What is the extent and frequency of their use by grade level and subject matter?

7. What audio-visual materials (films, filmstrips/loops, models) are used? What is the extent, frequency and nature of their use by grade level and subject area?

8. By grade level, how much time (in comparison with other subjects) is spent on teaching science?

9. What is the role of the science teacher in working with students? How has this role changed in the past 15 years? What commonalities exist in the teaching styles/strategies/practices of science teachers throughout the United States?

10. What are the roles of science supervisory specialists at the local district and state levels? How are they selected? What are their qualifications?

11. How have science teachers throughout the United States been influenced in their use of materials by Federally-supported in-service training efforts in science?

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1 Survey of Materials Usage in Pre-College Education, National Science Foundation Request for Proposal, NSF 76-108, Enclosure 1, pages 2-3.

2 The National Science Foundation defines science to include the natural sciences, social sciences, and mathematics.

In April 1976, the National Science Foundation awarded a contract to the Research Triangle Institute to design and implement a national survey to answer those questions. The survey involved sample design, instrument development, data collection, file preparation, and analysis; these activities are described in the following sections. The final section of this chapter outlines the contents of the remainder of the report.

B. Sample Design

The National Survey of Science, Mathematics and Social Studies Education utilized a national probability sample of districts, schools and teachers. The sample was designed so that national estimates of curriculum usage, course offerings and enrollments, and classroom practices could be made from the sample data. The sample design also ensured that estimates could be made for various subpopulations such as those in a particular region or a particular type of community.

A probability sample requires that every member of the population being sampled must have a known positive chance of being selected. The sample design for this survey ensured that every superintendent, science, mathematics and social studies supervisor, principal, and teacher of science, mathematics and social studies in grades K-12 in the 50 states and the District of Columbia had a chance of being selected.

The samples of superintendents, supervisors, principals, and teachers to be contacted in this survey were selected using a multistage stratified cluster design. Figure 1 presents a brief diagram of the selection stages. A sample of approximately 400 public school districts was selected from 102 primary sampling units (PSU's) consisting of standard metropolitan statistical areas, counties, and groups of contiguous counties. In each district, one school with at least one of the grades 10-12 and one school with at least one of the grades 7-9 were selected. In a subsample of two of the four districts in each sample PSU four additional schools were selected--two with grades included in the grade range 4-6 and two with grades in the K-3 grade range.

All superintendents in the sample districts were asked to complete questionnaires. The superintendent was also asked to provide the names of the district K-6 and 7-12 science, mathematics, and social studies supervisors (or other persons who could answer questions about district programs in these subject areas); all of these supervisors were asked to complete questionnaires.

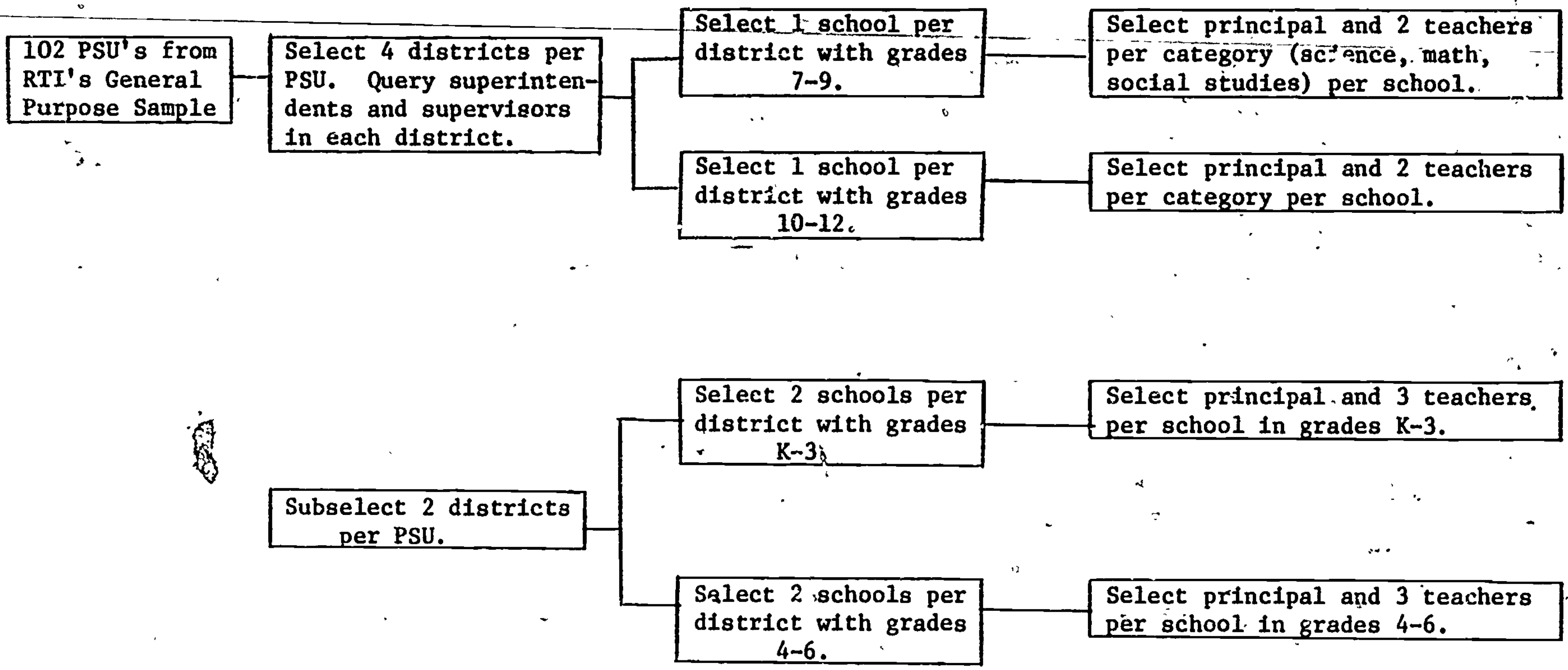

Figure 1: Sample Design

The principal of each sample school was asked to complete a questionnaire and to provide a list of the school's science, mathematics and social studies teachers and the number of classes of each subject the teacher taught. These lists were used to select 6 teachers (2 science, 2 mathematics, and 2 social studies) from each 7-9 and 10-12 sample school as well as a particular class to be studied in depth. The teacher lists from K-3 and 4-6 sample schools were used to select 3 teachers per school and a particular subject (and class, if applicable) to be studied in depth.

The remainder of Section B describes the selection of the primary sampling units, and sample districts, schools, and teachers in more detail. The general reader may wish to skip this detail and go directly to Section C, Instrument Development.

1. <u>Selection of the Primary Sampling Units</u>

RTI has developed a national general purpose sample designed for area sample surveys, list sample surveys, and mixed frame surveys. It consists of 100 primary sampling units (PSU's) selected from the 48 contiguous United States plus 2 PSU's selected from the states of Alaska and Hawaii. The procedures used in selecting the 102 PSU's are described below.

a. <u>Selection of the 100 PSU's from the 48 Contiguous States</u>

Sixteen of the 100 PSU's are large population standard metropolitan statistical areas (SMSA's) that were selected with certainty. The remaining SMSA's and nonmetropolitan counties in the 48 states were grouped into 42 primary strata according to the four census regions, nine census geographic divisions, metropolitan-nonmetropolitan characteristics, and size of community characteristics. Two sample PSU's were selected from each stratum with probabilities proportional to 1970 population counts.

Data from the 1970 Census First Count Summary Tapes were used to construct the sampling frame. The PSU's in the frame were defined as (a) entire SMSA's for those SMSA's, either self-representing or non-self-representing, which lie within a single census geographic division, (b) portions of SMSA's located within a single census geographic division, and (c) counties or groups of contiguous counties (or similarly defined units outside SMSA's). In five New England States (Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island), the metropolitan PSU's were defined as entire counties or groups of entire counties in which the predominant proportion of the population resides in SMSA's. Nonmetropolitan PSU's generally comprise several contiguous counties satisfying a minimum size requirement of 20,000 population in 1970.

The sampling frame contained a total of 1,675 primary sampling units, 16 of which were defined to be self-representing[1] and were included in the sample with certainty. The remaining 1,659 PSU's comprised the group that was stratified and sampled.

Two-way stratification and controlled ordering were used to ensure geographic dispersion of the sample and to maximize the homogeneity of PSU's within primary strata. The sampled PSU's were first stratified by the four geographic regions defined by the Bureau of the Census: Northeast, South, North Central, and West. Within each census geographic region, PSU's were additionally stratified as either metropolitan or nonmetropolitan. The metropolitan stratum consisted of the SMSA PSU's, and the nonmetropolitan stratum was composed of the non-SMSA PSU's.

The two-way stratification of PSU's by the four census regions and the metropolitan-nonmetropolitan categories comprised eight basic strata. The PSU's within each stratum were ordered in the manner described below before defining final approximately equal-size strata.

Within each of the four metropolitan-region strata, PSU's were grouped first by census division. Within the first census division, PSU's were ordered by 1970 total population from largest to smallest. The PSU's of the region's second division were then ordered from smallest to largest. In the South region, where three geographic divisions were defined, the PSU's of the third division were ordered from largest to smallest. The ordering of PSU's in this manner provided geographic control within regions and placed PSU's of similar size together in the frame listing. This method improves the frame when a systematic sample selection procedure is used.

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1 These 16 SMSA's are referred to as self-representing PSU's, because they would be included in all possible samples. The self-representing PSU's comprise the SMSA's of Boston, Newark, New York, Philadelphia, Pittsburgh, Washington, Baltimore, Dallas, Houston, Chicago, Detroit, Minneapolis-St. Paul, St. Louis, Cleveland, Los Angeles-Long Beach, and San Francisco-Oakland.

Within each of the four nonmetropolitan-region strata, PSU's were again grouped by census division. The PSU's of the first census division were ordered by the 1970 proportion of the population residing in rural areas, from least rural to most rural. The PSU's of the region's second division were then ordered from most rural to least rural. The PSU's in the third geographic division in the South region were ordered from least rural to most rural. This ordering afforded geographic control within regions and placed PSU's with similar urban/rural proportional composition together in the frame listing. Each of the eight basic strata was then divided into from two to eight final strata to form a total of 42 final primary strata of approximately three and one-third million 1970 population each.

Two sample PSU's were selected from each of the 42 final primary strata. A computer program was used to select the sample PSU's with probabilities proportional to 1970 populations and without replacement. Sixteen self-representing and 84 sample PSU's were selected in this manner.

b. Selection of the Two PSU's from Alaska and Hawaii

The procedures for defining PSU's in Alaska and Hawaii are the same as those used in defining the other 1,675 PSU's. There was only one metropolitan PSU, that of the Honolulu SMSA. The other 10 PSU's defined in the two states were nonmetropolitan PSU's. Because the total 1970 population in the two states was only approximately 1.6 million, the optimal allocation indicates only one sample PSU should be selected from these two states. However, to simplify variance estimation, two PSU's were selected. Instead of selecting 4 districts from each sample PSU, only 2 districts were selected from each PSU. In each of the 4 (2 per PSU) sample districts, one school was selected in each of the 7-9 and 10-12 grade categories. In a subsample of one district per PSU, two additional schools were selected in each of the grade range categories K-3 and 4-6.

2. Selection of Sample Districts Within Each of the 102 Sample PSU's

RTI obtained from Curriculum Information Center (CIC) in Denver a list of all public schools and their associated districts located in the sample PSU's as well as Catholic and private schools.

Districts having schools in more than one PSU were considered as belonging to the PSU in which the district superintendent's office is located. After the sample districts were selected, each sample district was checked to determine if it had any eligible schools in another county or PSU; all schools in the sample district were listed on the school sampling frame regardless of the PSU in which they were located. The following district and school information was obtained from CIC for the sample PSU's:

(1) State Code (Postal Service abbreviation), county code (FIPS), a district number, and for schools, a building number. All codes were in a nested format. (School number within district, district number within county, county number within State.)

(2) Grade span of the schools in the district and the district enrollment. For schools, the exact grades taught and the total school enrollment.

(3) District name, mailing address, (city, State, and zip code). For schools, school name and mailing address.

(4) District superintendent's name, office location, and telephone number. For schools, the principal's telephone number.

(5) County name.

(6) A code which indicates type of district (public, private, vocational-technical) and size of district category.

(7) Special-education only schools and districts were excluded from the frame. However, CIC does indicate special-education enrollment and whether the school is ungraded; the grade span of ungraded schools was indicated.

Districts which do not span the entire grade range (K-12) but which share administrative personnel were already grouped into one district unit by CIC. RTI combined other districts not spanning the entire grade range into one district sampling unit; geographic proximity was used to combine elementary and secondary school districts (including vocational-technical districts) into sampling units including all grades K-12. This procedure ensured that schools could be selected for each of the four grade range categories (K-3, 4-6, 7-9, and 10-12) from each sample unit.

Approximately four districts were selected "with replacement" in each PSU (except that 2 districts each were selected from the 2 PSU's in the

Alaska and Hawaii stratum) with probabilities proportional to the total district enrollment. Selecting districts "with replacement" means here that a given district can be selected more than once but only if it is large enough; that is, if its size exceeds the size of the sampling interval. District enrollment was accumulated and divided into eight equal sized parts. If a district had more students than one-eighth the total PSU enrollment, it was included in more than one part and had a chance of being selected more than once. Within each of the eight parts, one school district was selected with probability proportional to the district enrollment in that part. A maximum of eight different districts was selected. Whether or not the eight districts were physically different, an equal probability subsample of four districts was systematically selected for the sample and the other four were designated as backup districts. As will be described in Section D of this chapter, backup districts were included in the sample only after all efforts had failed to solicit cooperation from a sample district.

Note that neither the four sample districts nor the four backup districts were necessarily physically different districts. If the district was large enough, it could be selected more than once. When this occurred, more schools in each grade category were selected from the sample district. For example, if a PSU had only one district, that district was selected four times and four times as many schools were selected as were selected from a district selected only once. If there were fewer than four eligible schools in the grade range category, all eligible schools in the grade range category were selected.

3. Selection of Sample Schools Within Each of the Approximately 400 School Districts

Each private school in the sample PSU's was associated with one and only one public school district using the zip code of the private school. Private schools with zip codes defining areas at least half of which are included in the area defined by each of the 400 sample districts were considered as belonging to that district for school selection purposes. Two school sampling frames were constructed in each of the sample districts:

(1) all public and private schools in the sample district with any of the grades 7-9, and

(2) all public and private schools in the sample district with any of the grades 10-12.

One school was selected from each list with probability proportional to the estimated number of students in the eligible grades in each of the sample districts. The number of schools selected from each list was equal to the number of times the district was selected.

In many cases a school was included in both sampling frame lists since it contained eligible grades for both lists, for example a 9-12 high school. Since the number of eligible teachers was not known prior to selecting the schools, it was assumed that the selection probabilities of sample schools using estimated numbers of students in eligible grades were similar to using school selection probabilities proportional to estimated eligible science teachers. In addition, selecting schools with probabilities proportional to estimated students increases the precision of population estimates involving numbers of students (for example students using a particular science textbook or being taught using a given method).

A random subsample of at most two districts was selected from the four sample districts in each of the sample PSU's. In these approximately 200 sample districts two additional school sampling frame lists were constructed. The first list contained all public and private schools in each subsample district with any of the grades K-3, and the second list contained all public and private schools in each subsample district with any of the grades 4-6. Two schools were selected from each list in each of the subsample districts with probabilities proportional to the estimated number of students in the eligible grades.

4. Selection of Teachers from Each of the Sample Schools

Many studies attempt to contact a sample of teachers by asking the principal to select one or more teachers at random. There is evidence, however, that this method often results in a biased sample. To avoid this problem, a list of names of all science, mathematics, and social studies teachers in the appropriate grade range was obtained from the principal of each sample school. Prior to sample selection, teachers in the K-3 and 4-6 grade ranges were ordered by grade and a systematic equal probability sample of three teachers per school was selected. This method assured that the sample of teachers was distributed among the eligible grades in approximately the same proportion as the population of teachers is distributed by grade.

Science, mathematics and social studies teachers in sample schools in the 7-9 and 10-12 grade ranges were stratified according to subject most often taught and a sample of two teachers was selected from each stratum. Due to time constraints, schools that refused to provide lists of teachers were not replaced; instead additional teachers were selected from schools in the same strata as the refusal schools.

5. Selection of Sample Classes

The study design included obtaining in-depth information from each teacher about curriculum usage and teaching techniques in a single, randomly selected class. The majority of the K-3 and 4-6 teachers were reported by their principals to teach in self-contained classrooms, i.e., they are responsible for teaching all academic subjects to a single group of students. Each such sample teacher was randomly assigned to one of three groups--science, mathematics, or social studies--and received a questionnaire specific to that subject. Most 7-9 and 10-12 teachers and some K-3 and 4-6 teachers in the sample taught more than one group of students. Sometimes these teachers taught several classes of a single subject; other times they taught one or more classes of a number of different subjects. For each such teacher, one class was randomly selected. For example, a teacher who taught 2 classes of science and 3 classes of mathematics each day might have been asked to answer questions about his first or second science class or his first, second, or third mathematics class of the day.

Principals in sample 7-9 and 10-12 schools were asked to categorize social studies classes as either social science (anthropology, civics, economics, geography, government, political science, psychology, sociology, and similar courses) or "other social studies" (history and general social studies). To compensate for the fact that relatively few social studies classes are social science, social science classes were oversampled by giving each such class twice the probability of being selected.

6. Sampling Error Considerations

The results of any survey based on a sample of a population (rather than on the entire population) are subject to sampling variability. The sampling error (or standard error) provides a measure of the range within which a sample estimate can be expected to fall a certain proportion of the time. For example, it may be estimated that 10 percent of all mathematics teachers are using one of the federally-funded curriculum materials. If it is calculated that the sampling error for this estimate was 1 percent, then, according to the Central Limit Theorem, 95 percent of all possible samples of that same size selected in the same way would yield curriculum usage estimates between 8 percent and 12 percent (that is, 10 percent ± 2 standard error units).

The decision to obtain information from a sample rather than from the entire population is made in the interest of reducing costs, both in terms of money and the burden on the population to be surveyed. The particular sample design chosen is the one which is expected to yield the most accurate information for the least cost.

In this study, data to be collected from teachers were considered the most crucial; consequently the sample design is one which will maximize the accuracy of that information. As can be seen in Appendix C, Estimation and Sampling Error Computations, the estimates based on teacher data generally have smaller standard errors than those based on data collected at the school and district levels.

It is important to realize that, other things being equal, estimates based on small sample sizes are subject to larger standard errors than those based on large samples. Also, for the same sample design and sample size, the closer a percentage is to 0 or 100, the smaller the sampling error.

In general, this report points out only those differences which are substantial as well as statistically significant at the .05 level or beyond. The reader who wishes to determine if particular percentages shown in the tables differ significantly should refer to Appendix C for instructions for using the generalized tables of standard errors. It should be noted that, since all state supervisors in the 50 states and the District of Columbia were included in the survey, these results are not subject to sampling error and therefore all reported differences are statistically significant.

C. <u>Instrument Development</u>

RTI's study design involved collecting data from a national sample of teachers, principals, superintendents, and state and local supervisors. An initial review of the research literature was conducted to locate previous studies in these areas and to identify important variables. A preliminary set of research questions and data sources was developed, submitted to NSF, and revised based on NSF feedback. Questionnaire items which could be used to answer these research questions were written (or in some cases items appearing in earlier studies were revised) and preliminary drafts of the questionnaires were prepared.

Instrument development, including item construction, review, field testing, and revision began in June, 1976 and continued until February, 1977. The preliminary drafts of the questionnaires were reviewed by representatives of the Association of State Supervisors of Mathematics, the Council of State Science Supervisors, and the Council of State Social Studies Specialists. The major purpose of this review was to identify the information needs of state level personnel and to assess the degree to which the survey questionnaires met these needs. Based on state supervisors' feedback, and on the results of a 1974 survey of state data systems,[1] many items which gathered information that was already available were omitted; other items were added to fill existing gaps in coverage.

The preliminary drafts of the questionnaires were mailed to 18 consultants with expertise in science, mathematics, and social studies education. This group included a number of individuals employed in public school system positions as well as university-based personnel. Each consultant was asked to rate each questionnaire item in terms of the importance of the information being collected and the adequacy of the item format and structure for obtaining clear, unambiguous data. Representatives of a number of professional organizations, including the American Association for the Advancement of Science, the American Psychological Association, the Social Studies Education Consortium, the Educational Products Information Exchange, and national associations of district science, mathematics, and social studies supervisors were also given an opportunity to review the preliminary drafts of the questionnaires.

The questionnaires were revised based on feedback from the various reviewers, and an instrument review meeting was held at RTI on September 9, 1976. Discussions at this meeting, subsequent mail and telephone contacts with consultants, and the results of a number of small

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1 Data Utilization: A Key to Improved Science Education, Council of State Science Supervisors, 1974.

pretests were used to further refine the instruments. Finally, the instruments were reviewed by representatives of the Committee on Evaluation and Information Systems (CEIS) of the Council of Chief State School Officers. One of the major purposes of this committee is to reduce the burden of data collection efforts on local education agencies. CEIS discussed the instruments at their July 1976 meeting and indicated that the respondent burden was too great; the instruments were again considered at the October 1976 meeting of CEIS, and final CEIS approval was granted during a conference call among RTI, NSF and CEIS representatives in November 1976. This approval helped assure that the Chief State School Officers would grant RTI permission to conduct the survey in their states.

Office of Management and Budget (OMB) approval of the instruments for field-test purposes was obtained, and a field test involving small numbers of superintendents and district supervisors, and approximately 200 teachers was conducted in November and December 1976. The results of this field test were used to further refine the instruments, and a final instrument review meeting was held at RTI on January 24-25, 1977. The final versions of the various questionnaires were approved by OMB, and preparations for mailing to sample members were completed.

D. Data Collection

Once the Committee on Evaluation and Information Systems and the Office of Management and Budget had approved the study design, instruments, and data collection procedures, the Chief State School Officers (CSSO's) in the states with sample schools were asked for permission to contact sample districts in their states. Ten CSSO's requested that all materials for superintendents in their state be sent to the department of education; these states wished to include letters of endorsement of the study along with the RTI materials. Four states requested that materials for district supervisors, principals, and teachers also be sent to them for distribution and a few districts requested that materials for principals and teachers be sent to the district office for forwarding to sample members. All of these requests were complied with, usually by mailing materials to these districts and states several days in advance of the general mailout. In addition, copies of the materials which were being sent to sample members were sent to the survey coordinator in each state.

On January 7, 1977 personalized letters and accompanying materials were mailed to superintendents of the 377 sample districts which had sample schools and the 70 sample districts with no schools in the sample.[1] The materials included a letter from NSF requesting cooperation with the study and an information sheet about the purposes and procedures of the survey. Each superintendent was given a list of the sample schools, if any, in his or her district and was asked to provide the names of the principals of these schools. The superintendent was also asked to provide the names of district K-6 and 7-12 science, mathematics, and social studies supervisors or other persons who could answer questions about district programs in these subjects. Finally, each superintendent was asked to complete a brief questionnaire. A postage-paid envelope was enclosed and both a toll-free telephone number and a number to call collect if the superintendent had any questions about the survey were provided.

One week after the initial mailout, mailgrams were sent to all superintendents requesting that they return the forms as soon as possible if they had not already done so. Even after the mailgrams, the response rate was less than 50 percent, so further measures were undertaken to increase it. A telephone follow-up was conducted to obtain the names of principals and permission to contact them; at the same time superintendents were urged to complete the questionnaires and district supervisor listing forms and return them to RTI. Materials were remailed to superintendents who indicated they had lost the forms or could not recall having received them. In many cases 4 or 5 calls to the district were necessary before permission was received; in several cases ten or more calls were made. In several other cases the districts insisted on reviewing the questionnaires before they would approve the study.

These intensive efforts to obtain permission to contact sample schools were costly both in terms of time and money, but they proved to be quite effective. By the end of the telephone follow-up, 89 percent of the districts with sample schools had given RTI permission to contact these schools. A replacement district was selected from the same primary sampling unit as each refusal district, and 85 percent of these districts agreed to cooperate.

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1 Since some districts do not cover the entire K-12 grade range it was sometimes necessary to cluster districts, e.g., one 9-12 district with several K-8 districts in the same geographical area, prior to selection. When schools within these district clusters were selected it often turned out that one or more of the individual districts had no sample schools, thus the 70 sample districts with no sample schools.

Several subsequent follow-up activities involved district superintendents. In preparation for the mailout to district supervisors, each district which had not furnished the names of supervisors was called; in many cases the names were provided over the telephone. Several weeks later additional forms were sent to each superintendent who had still not returned the superintendent questionnaire or had not provided the names of district supervisors. Finally, in an effort to increase the school response rate, a letter was sent to the superintendent of each non-responding school requesting that the principal be informed of the superintendent's approval of the study.

The initial contacts with the sample schools were aimed at obtaining the names of science, mathematics, and social studies teachers and the number of classes of each subject they taught so that sample teachers could be selected. The teacher listing forms and accompanying materials were mailed on February 18, 1977 to all sample schools whose superintendents had given permission for the survey. The remaining schools were contacted as permission was received. As in the case of superintendents, a letter from NSF, a postage-paid envelope, and toll-free and collect telephone numbers were provided.

A "thank you/reminder" postcard was mailed to each principal one week after the initial contact. By the requested return data of February 28 only 40 percent of the forms had been received. Non-respondents were contacted by telephone, and additional materials were sent to schools which requested them. These procedures increased the response rate to approximately 70%; this response rate was considered unacceptably low since the selection of sample teachers was dependent upon receipt of the teacher lists.

In an attempt to increase the response rate, principals who had not returned the forms by March 31 were sent mailgrams urging their cooperation and asking them to call RTI collect if they had misplaced the forms or had any questions about the study; additional forms were mailed as requested. These efforts increased the response rate to approximately 85 percent. A second round of calls was begun on April 3, and an additional set of materials was mailed to all non-respondents on April 6. As of the final cutoff date (April 20), teacher lists had been obtained from approximately 95 percent of the schools which had been contacted. Again, these efforts were costly in terms of both time and money, but they were considered essential if the integrity of the sample design and therefore the precision of the survey results were to be preserved.

Questionnaires and accompanying materials (including a letter from RTI with phone numbers to call toll-free and collect, a letter from NSF, and a postage-paid envelope) were mailed to district supervisors on March 28, to teachers and principals during the period April 8-29 (as teacher listing forms were received and sample teachers were selected), and to state supervisors on April 15. In each case a "thank you/reminder" postcard was mailed one week after the initial questionnaire mailout, second mailouts were made to non-respondents approximately two weeks later, and mailgrams were sent to all those who had still not responded by a given cutoff date. Each non-responding district supervisor and a sample of non-responding principals and teachers also received prompting by telephone.

The final response rate for each group is shown in Table 1. The response ranged from an average of 72 percent for district supervisors to an average of 90 percent for state supervisors. In addition, a very brief questionnaire was mailed to a sample of responding teachers in order to gauge the reliability of some of the items. The response rate for the reliability questionnaire was 65 percent.

Table 1

SURVEY RESPONSE RATES

Type of Respondent	Number of Questionnaires Sent Out	Number of Questionnaires Received	Response Rate
State Supervisor	192	173	90%
Superintendent	488	356	73%
District Supervisor	2634	1893	72%
Principal	1411	1177	84%
Teacher	6378	4829	76%

E. File Preparation and Analysis

Completed questionnaires were checked in by identification number, assigned to control batches, and routed to the pre-machine editing and coding section at RTI. Manual editing was used to identify and, if possible, resolve multiple responses. For example if a teacher indicated that 50-60 minutes were typically spent on mathematics instruction, the average value of 55 minutes would be used along with an indication that this value had been arrived at by an editing process. Non-numeric open-ended responses were also coded at this time. For example, a pre-developed list of course codes was used to code all questions where names of courses were requested, including lists of required courses, courses offered, etc.

Following manual coding and editing, the questionnaires were transmitted to the direct data entry section for transformation to machine-readable form using programmable terminals. Major advantages of this type of data transformation include higher speed, fewer processing steps, and lower transcription error rates. The overall transcription error rate for the data in this survey was less than 0.5 percent.

Once the data had been transformed into machine-readable form, a number of machine-editing checks were carried out. Responses which were outside the acceptable range for each item were coded as "bad data"; for example, if a teacher indicated that he had taken his last course for college credit in 1980 this response was considered uncodable. Similarly, if the number of minutes reportedly spent in a lesson exceeded the number of minutes in the school day, the response was considered uncodable.

The majority of the machine-editing checks involved routing questions. A routing question is one that either implicitly or explicitly directs a respondent around other questions in the instrument. The aim of the routing questions is to quickly move respondents around questionnaire sections that do not apply to them. A routing-check program was used to determine if the respondents correctly followed the routing patterns and to flag the responses of violators. Subsequent analyses could then easily exclude flagged records from the tabulations. For example, if a district supervisor indicated that the district did not use standardized tests in K-6 mathematics and then proceeded to rate the utility of the district's K-6 mathematics standardized tests, the data are clearly inconsistent; in these cases the data were omitted from the analyses.

The final step in file preparation was the addition of weights to the file. The weight for each respondent was calculated as the inverse of the probability of selecting the individual into the sample, multiplied by a non-response adjustment factor.[1] All population estimates presented in this report were computed using weighted data.

F. Outline of this Report

This report of the results of the 1977 National Survey of Science, Mathematics and Social Studies Education is organized into major topical areas. Data from the various sources--superintendents, district program questionnaire respondents, principals, teachers, and state supervisors--are presented as appropriate throughout the report.

Chapter 2 presents data about state and local guidelines for science, mathematics and social studies education. The percent of states and districts which have guidelines for the time to be spent in instruction in each subject are shown, as well as information about the amount of time required. Similarlarly information on courses required for high school graduation is presented as well as indications of the status of competency programs in each subject.

Chapter 3 presents information about science, mathematics and social studies course offerings. The percent of schools offering each course as well as total enrollment for each major course are presented. Information about course duration and ability composition of science, mathematics, and social studies classes is also presented.

Chapter 4 deals with a variety of topics related to federally funded curriculum materials. District, school, teacher and student use of these curriculum materials are considered as well as the participation of teachers, principals and state and local supervisors in NSF-funded workshops and institutes.

Issues related to textbook usage are examined in Chapter 5. The most commonly used textbooks in each subject/grade range category (K-3, 4-6, 7-9 and 10-12 science, mathematics and social studies) are listed, and data are presented about the use of multiple texts, the age of textbooks being used, and the use of various supplementary materials. In addition, perceptions of superintendents, district supervisors, and principals about the textbook selection process are compared.

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[1] The aim of non-response adjustment is to reduce the possible bias by distributing the non-respondent weights among the respondents believed to be most similar to these non-respondents. In this study, adjustment was made by size and type of community within geographical areas.

Chapter 6 deals with instructional techniques and classroom activities. Science, mathematics, and social studies classes are compared in terms of the frequency of use of various teaching techniques and particular types of instructional materials. Finally, data are presented about the use of specific manipulative materials in science, mathematics and social studies classes.

Chapter 7 presents a variety of data about science, mathematics, and social studies facilities, equipment, and supplies. Topics include district expenditures and sources of funding, school expenditures, the availability and use of selected facilities and equipment, and teacher ratings of the adequacy of facilities, equipment, and supplies.

The qualifications of science, mathematics, and social studies teachers are discussed in Chapter 8. Data about teacher characteristics such as sex, degrees earned, and teaching experience are presented. However, the major focus of the chapter is on areas in which teachers feel the need for additional assistance.

Chapter 9 deals with the sources of information used by teachers, principals, and state and local district supervisors to find out about new developments in education. Specific sources which are discussed include several categories of state and local district personnel, a number of types of professional activities, and professional publications.

Chapter 10 presents data about perceived "barriers" to instruction in science, mathematics and social studies education. Responses of teachers, principals, and state and local district supervisors about the seriousness of a number of different potential problems are compared.

Finally, Chapter 11 presents the results of a substudy which was conducted to assess the reliability of the information gathered from teachers.

To improve the readability of this report, many of the more detailed tabular results have been placed in the Appendix. In addition, the appendices include a description of the reporting variables used in the analyses, a technical treatment of the estimation and standard error computations, and copies of the survey instruments.

Chapter 2

State and Local District Supervision/Coordination of Science, Mathematics, and Social Studies Education

A. Overview

Data concerning state and local district supervision of science, mathematics and social studies education were collected using four types of questionnaires--superintendent, principal, district program and state supervisor. When a state did not have a statewide supervisor/coordinator in science, mathematics or social studies, the Chief State School Officer was asked to designate another person who would be able to answer questions about state requirements and practices in the particular subject area. Similarly, superintendents designated other district staff members to answer questions about district programs in each subject/grade range (K-6 and 7-12 science, mathematics and social studies) if there were no district-wide supervisor for that category. As a result, estimates could be made for the percent of states or percent of districts with a particular characteristic, even though some states and districts do not have any supervisors in one or more of the areas of interest.

This chapter also deals with characteristics of the supervisors themselves, such as their attendance at professional meetings. In some cases the analyses excluded district program questionnaire respondents who have no district-wide coordination responsibilities, and these are noted. In most cases, however, all respondents were included in the analyses.

B. Guidelines for Instructional Time in K-6 Science, Mathematics, and Social Studies

The state supervisor and district program questionnaires included questions about guidelines for the minimum amount of time to be spent in the particular subject in grades K-6. As can be seen in Tables 2 and 3, approximately 25 percent of the states and 40 percent of the districts set guidelines for the minimum amount of instructional time to be spent in each subject in one or more of the grades K-6. As might be expected, relatively few districts set minimum time guidelines for Kindergarten instruction, and those that do have a rather low requirement on the average (approximately 15 minutes per day for each subject).

Table 2

PERCENT OF STATES WITH GUIDELINES FOR TIME SPENT IN EACH SUBJECT IN GRADES K-6, BY REGION AND SIZE OF STATE

	Mathematics			Science			Social Studies		
	Yes	No	Unknown/ Inconsistent 1/	Yes	No	Unknown/ Inconsistent 1/	Yes	No	Unknown/ Inconsistent 1/
Nation	28	58	15	27	55	18	25	51	24
Region 2/									
Northeast	29	29	43	25	63	13	0	75	25
South	33	53	13	31	50	19	44	44	13
North Central	27	73	0	33	33	33	17	58	25
West	20	70	10	15	77	8	27	36	36
Size of State									
Small	34	59	8	38	50	12	21	39	39
Medium	32	62	7	34	44	22	34	41	25
Large	16	52	32	6	74	20	19	74	6
Sample N =		43			49			47	

1/ Includes states where the question was left blank as well as those where the supervisor said there were guidelines but omitted them, or said there were no guidelines but wrote them in.

2/ Refer to Appendix A for a description of these reporting variables and the sample size in each reporting group.

Table 3

DISTRICT GUIDELINES FOR MINIMUM NUMBER OF
MINUTES TO BE SPENT PER DAY, BY SUBJECT AND GRADE

Grade	Mathematics			Science			Social Studies		
	Percent of Districts	Average # of Minutes[1]	Standard Error	Percent of Districts	Average # of Minutes[1]	Standard Error	Percent of Districts	Average # of Minutes[1]	Standard Error
K	23	17	1.8	12	16	0.7	13	15	2.5
1	36	29	1.2	28	17	1.0	27	21	1.4
2	39	31	1.7	29	18	1.1	28	21	1.2
3	41	33	1.8	30	20	1.2	28	25	1.8
4	40	38	2.7	30	26	1.6	29	33	3.2
5	40	38	2.6	32	30	1.9	36	38	3.2
6	40	39	2.7	36	34	2.0	35	39	3.3
Sample N	327			326			303		

1/ These are the numbers of districts which indicated they have guidelines for one or more of the grades K-6. In each subject, estimates for kindergarten are based on considerably fewer districts.

The percent of districts with guidelines for amount of instruction in each subject increases with grade level, as does the average number of minutes recommended or required. In each of the grades 1-6, the average amount of time recommended for mathematics and that recommended for social studies are significantly greater than the amount recommended for science. In grades 1-4 the recommended time for mathematics is significantly greater than that for social studies.

C. Science, Mathematics, and Social Studies Requirements for High School Graduation

Respondents to the state supervisor and district program questionnaires indicated the total amount of grade 9-12 instruction in their subject which is required for high school graduation, as well as the names of any specific courses which are required. In contrast to requirements in grades K-6, requirements in grades 7-12 tend to be heaviest in social studies. As Table 4 shows, 68 percent of the states require more than one year of instruction in grades 9-12 compared to 21 percent in science and 21 percent in mathematics. (Note that 13 percent of the states did not answer this question for social studies, while 15 percent omitted the answer for science, possibly because they have no requirements in the subject.) These tables also show the requirements broken down by region and size of state. States in the South tend to have heavier requirements than states in the other regions;[1] there is no consistent pattern evident for size of state.

As Table 5 shows, very few states require specific courses in mathematics and science, while a large number (83 percent) require one or more specific social studies courses. Sixty-eight percent of the states require a course in United States History, 32 percent require an American Government course, and 20 percent require a course in the history of their state. The most common requirement in science is biology, but even this was listed by only 8 percent of the states. No specific mathematics courses were listed, even though 7 percent of the states indicated that they do require specific mathematics courses.

[1] The reader should refer to Appendix A for a description of the reporting variables. It may be surprising, for example, to note that the South includes such states as Delaware, Maryland and Texas according to U.S. census definitions.

Table 4

PERCENT OF STATES REQUIRING LESS THAN 1 YEAR, 1 YEAR, AND MORE THAN 1 YEAR OF EACH SUBJECT IN GRADES 9 THROUGH 12 FOR HIGH SCHOOL GRADUATION, BY REGION AND SIZE OF STATE

	Mathematics			Science				Social Studies			
	Less Than 1 Year	1 Year	More Than 1 Year	Less Than 1 Year	1 Year	More Than 1 Year	Unknown	Less Than 1 Year	1 Year	More Than 1 Year	Unknown
Nation	22	57	21	12	53	21	15	2	17	68	13
Region[1/]											
Northeast	57	29	14	0	38	13	50	13	25	38	25
South	7	53	40	6	56	38	0	0	13	81	6
North Central	18	82	0	25	42	8	25	0	25	58	17
West	20	60	20	15	69	15	0	0	9	82	9
Size of State											
Small	21	64	15	12	57	18	13	0	21	74	6
Medium	13	62	25	11	55	23	11	6	17	77	0
Large	33	44	24	13	46	21	21	0	13	52	35
Sample N		43			49				47		

1/ Refer to Appendix A for a description of these reporting variables and the sample size in each reporting group.

Table 5

PERCENT OF STATES REQUIRING SPECIFIC COURSES IN EACH SUBJECT, BY REGION AND SIZE OF STATE

	Mathematics	Science	Social Studies
<u>Nation</u>	7[1/]	8	83
<u>Region</u>[2/]			
Northeast	0	0	75
South	13	13	100
North Central	9	0	67
West	0	15	82
<u>Size of State</u>			
Small	7	0	74
Medium	6	16	87
Large	7	7	87
Sample N	43	49	47

1/ It should be noted that these state supervisors (N = 3) indicated that specific courses are required but did not specify the names of the courses.

2/ Refer to Appendix A for a description of these reporting variables and the sample size in each reporting group.

Table 6

PERCENT OF DISTRICTS REQUIRING LESS THAN 1 YEAR, 1 YEAR, AND MORE THAN 1 YEAR OF EACH SUBJECT IN GRADES 9 THROUGH 12 FOR HIGH SCHOOL GRADUATION

	Less Than 1 Year	1 Year	More Than 1 Year	Unknown
Mathematics (N = 321)	2	54	33	11
Science (N = 318)	4	47	33	16
Social Studies (N = 298)	2	5	74	20

District requirements in science, mathematics, and social studies are presented in Tables 6 and 7. Again, the requirements are significantly greater in social studies than in science or mathematics, with approximately 3 out of every 4 of the districts requiring more than one year in grades 9-12 compared to only 1 out of every 3 in both science and mathematics. Most districts (86 percent) require one or more specific courses in social studies. The most commonly required courses are United States History (81 percent of districts), American Government (34 percent) and World History (17 percent). Forty-nine percent of the districts require a specific course in science in grades 9-12 with general science (27 percent), biology (21 percent) and physical science (12 percent) the most frequently required courses. Forty percent of the districts require one or more specific mathematics courses, typically general mathematics (35 percent) or elementary algebra (33 percent).

Table 7

PERCENT OF DISTRICTS REQUIRING SPECIFIC COURSES IN EACH SUBJECT

	Yes 1/	No	Unknown
Mathematics (N = 321)	40	52	8
Science (N = 318)	49	43	8
Social Studies (N = 298)	86	8	6

1/ Includes districts which indicated that specific courses are required but did not specify the names of these courses (1 percent of the districts in mathematics and social studies, and 3 percent in science).

D. District Use of Standardized Tests in Science, Mathematics, and Social Studies

Each respondent to a district program questionnaire indicated if the district uses nationally-normed standardized tests in a particular subject and grade range. The data presented in Table 8 show that the use of standardized tests is much more common in mathematics than in science or social studies; in each subject standardized tests are more likely to be used in grades K-6 than in grades 7-12.

Table 8

PERCENT OF DISTRICTS WHICH USE STANDARDIZED TESTS IN EACH SUBJECT AND GRADE RANGE

	Yes	No	Unknown
Mathematics			
K-6 (N = 310)	93	7	0
7-12 (N = 302)	67	32	1
Science			
K-6 (N = 314)	43	51	6
7-12 (N = 295)	33	64	3
Social Studies			
K-6 (N = 285)	50	45	4
7-12 (N = 268)	33	66	1

Respondents who indicated that standardized tests are used in the particular subject and grade range were asked to answer a series of questions about the extent of their use for a number of purposes. The results are shown in Table 9. A major use of such tests is in reporting results to individual teachers, especially in grades K-6. Ninety-five percent of the districts which use standardized tests reported using these tests for that

Table 9

PERCENT OF DISTRICTS WHICH USE STANDARDIZED TESTS
FOR EACH OF A NUMBER OF PURPOSES, BY SUBJECT

A. MATHEMATICS

Type of Use	K-6					7-12				
	No Use	Small Use	Moderate Use	Great Use	Missing	No Use	Small Use	Moderate Use	Great Use	Missing
Reporting results to individual teachers	1	2	24	71	1	3	13	53	31	1
Reporting results to students' parents	2	30	41	26	1	6	47	24	7	16
Revising curricula	10	30	44	10	6	8	27	36	12	17
Determining topics for in-service education programs	19	25	37	13	6	32	34	14	2	18
Placing students in remedial programs	6	11	39	42	3	9	22	29	24	17
Placing students in programs for the gifted	41	14	14	28	3	29	19	20	13	20
Diagnosis/prescription for individual students..	5	30	33	31	2	10	44	21	9	16
Reporting progress for federally-funded programs	22	9	27	37	4	40	16	14	10	20
Sample N [1]	289					227				

1/ Districts which do not use standardized tests and those with routing pattern violations were not included in this table.

Table 9 (Continued)

PERCENT OF DISTRICTS WHICH USE STANDARDIZED TESTS FOR EACH OF A NUMBER OF PURPOSES, BY SUBJECT

B. SCIENCE

Type of Use	K-6					7-12				
	No Use	Small Use	Moderate Use	Great Use	Missing	No Use	Small Use	Moderate Use	Great Use	Missing
Reporting results to individual teachers	0	13	20	66	[illegible]	4	19	42	35	0
Reporting results to students' parents	4	25	49	23	0	14	34	32	19	1
Revising curricula	16	31	49	5	0	22	40	24	11	3
Determining topics for in-service education programs	19	39	38	4	0	46	36	13	2	3
Placing students in remedial programs	33	28	20	18	2	16	34	32	16	3
Placing students in programs for the gifted	54	13	21	11	0	43	25	10	19	4
Diagnosis/prescription for individual students..	28	41	11	19	1	25	33	23	17	4
Reporting progress for federally-funded programs	50	15	23	10	2	47	38	9	2	4
Sample N [1]			133					128		

1/ Districts which do not use standardized tests and those with routing pattern violations were not included in this table.

Table 9 (Continued)

PERCENT OF DISTRICTS WHICH USE STANDARDIZED TESTS FOR EACH OF A NUMBER OF PURPOSES, BY SUBJECT

C. SOCIAL STUDIES

Type of Use	K-6					7-12				
	No Use	Small Use	Moderate Use	Great Use	Missing	No Use	Small Use	Moderate Use	Great Use	Missing
Reporting results to individual teachers	0	11	42	47	0	10	23	37	28	2
Reporting results to students' parents	3	29	49	19	0	11	34	28	16	12
Revising curricula	13	25	56	7	0	18	37	35	1	9
Determining topics for in-service education programs	19	54	20	7	1	25	31	28	4	11
Placing students in remedial programs	25	21	23	31	0	11	48	21	18	2
Placing students in programs for the gifted	39	11	20	28	2	39	31	13	8	9
Diagnosis/prescription for individual students...	21	35	10	34	0	20	40	28	10	3
Reporting progress for federally-funded programs	43	9	18	30	0	37	27	20	5	12
Sample N [1]			127					105		

1/ Districts which do not use standardized tests and those with routing pattern violations were not included in this table.

purpose to a moderate or great extent in K-6 mathematics; analogous figures were 89 percent for K-6 social studies, 86 percent for K-6 science, 84 percent for 7-12 mathematics, 77 percent for 7-12 science and 65 percent for 7-12 social studies. Another major use of the tests is for placing students in remedial programs, especially in K-6 mathematics (81 percent of the districts reported moderate or great use for this purpose.) A third major use of test results is in reporting to parents, with percentages of moderate or great use varying from nearly 70 percent for K-6 mathematics and social studies to 31 percent for 7-12 mathematics.

Fewer districts reported using test results to a moderate or large extent for revising curricula (ranging from approximately 35 percent in 7-12 science and social studies to 63 percent in K-6 social studies), and diagnosis/prescription for individual students (from 30 percent in K-6 science and 7-12 mathematics to 64 percent in K-6 mathematics).

The least important uses of standardized test results appear to be for determining topics for in-service education programs (ranges from 15 to 50 percent moderate or great use), reporting progress for federally-funded programs (11 to 64 percent), and placing students in programs for the gifted (21 to 62 percent).

E. Basic Competency in Science, Mathematics, and Social Studies

Very few of the states currently establish specific competencies in these subjects which students must attain prior to high school graduation, but as Table 10 shows, a number of states are planning to implement basic competency programs in the near future. In mathematics, 35 percent of the states are planning to implement a competency program, and, as shown in Table 11, approximately two-thirds of these plan to do so by 1979. Fewer states are planning basic competency programs in social studies (22 percent) and science (13 percent), and the implementation dates tend to be further in the future or not yet determined.

Table 10

STATUS OF COMPETENCY PROGRAMS BY SUBJECT (Percent of States)

	Subject		
	Mathematics	Science	Social Studies
Have specific competencies required for graduation	7	2	0
Plan to implement competency program	35	13	22
No plans to implement competency program	34	63	51
Missing or inconsistent responses.	23	23	28
Sample N	43	49	47

Table 11

DATES PLANNED FOR IMPLEMENTING COMPETENCY PROGRAMS IN EACH SUBJECT 1/

	Subject		
Date	Mathematics	Science	Social Studies
1977	12	0	17
1978	42	48	8
1979	13	0	16
1980	6	17	17
1981	0	18	17
Date Unknown	28	18	26
Sample N	17	6	12

1/ Percentages are based on the states which indicated that they plan to implement competency programs and either supplied the date, or indicated that the date was unknown.

F. Roles of State Supervisors

As part of a general reduction of funds available in state departments of education, a number of states have reduced the number of statewide subject area coordinators; in many cases a coordinator has been assigned additional duties so that he or she has less time to spend on science, mathematics or social studies education, and in some cases the positions have been eliminated entirely. As Table 12 shows, only 58 percent of the states employ one or more persons who spend most of their time on the statewide coordination of mathematics. Similarly, only 55 percent of the states have science education specialists who devote more than 75 percent of their time to statewide coordination and only 56 percent of the states have such coordinators in social studies. There is some variation by region, with states in the South more likely than other states to have "full-time" coordinators (i.e., those who spend more than 75 percent of their time coordinating a single subject), and states in the Northeast and West less likely to have "full-time" coordinators in science and mathematics. There is no consistent pattern evident by size of state.

Each state supervisor was also asked to indicate the office's budget for the support of education in that subject, including salaries. Many of them omitted this question, while others indicated that the amount could not be determined. Table 13 shows the average amount of money spent in support of each subject based on the states which provided data; the average amount ranges from $41,506 in science to $52,380 in social studies. As would be expected, the larger states spend more on the average than do the smaller states. Regional differences are less consistent, but there is a tendency for states in the North Central region to have budgets in these subjects which are smaller than those in the nation as a whole.

In an attempt to determine how state supervisors spend their time, each supervisor was given a list of activities and asked to indicate the amount of time he or she spends on each. These data are shown in Appendix Table B.1. The activities which occupy the largest proportion of state supervisor time are planning and developing curricula (72 to 82 percent reported spending a moderate or large amount of time on this), providing and coordinating in-service programs (66-83 percent) working with district personnel (68-73 percent) and evaluating district programs (54-62 percent).

Table 12

PERCENT OF STATES WHERE SUPERVISORS SPEND LESS THAN 50%, 50-75%, AND MORE THAN 75% OF THEIR TIME IN STATEWIDE COORDINATION BY SUBJECT, REGION AND SIZE OF STATE[1/]

	Mathematics				Science			Social Studies			
	Less Than 50%	50-75%	More Than 75%	Missing	Less Than 50%	50-75%	More Than 75%	Less Than 50%	50-75%	More Than 75%	Missing
Nation	22	18	58	2	31	14	55	29	13	56	2
Region[2/]											
Northeast	43	0	57	0	50	13	38	50	0	30	0
South	0	27	67	7	6	19	75	13	0	81	6
North Central	27	18	55	0	33	8	58	17	17	67	0
West	30	20	50	0	46	15	39	46	36	18	0
Size of State											
Small	29	15	56	0	31	13	56	33	28	39	0
Medium	20	25	56	0	33	17	50	31	0	69	0
Large	16	14	62	8	27	13	60	21	13	60	7
Sample N	43				49			47			

1/ If a state has more than one supervisor per subject, only the "chief" supervisor was used in these analyses.

2/ Refer to Appendix A for a description of these reporting variables and the sample size in each reporting group.

Table 13

AVERAGE AMOUNT OF MONEY SPENT ON STATEWIDE COORDINATION OF EACH SUBJECT, BY REGION AND SIZE OF STATE

	Mathematics	Science	Social Studies
Nation	$48,442	$41,506	$52,504
Region[1/]			
Northeast	61,250	46,333	65,000
South	48,873	50,707	58,454
North Central	31,467	30,447	43,047
West	52,714	24,539	49,115
Size of State			
Small	28,602	27,083	44,467
Medium	36,442	36,842	48,517
Large	87,775	63,383	69,713
Sample N[2/]	30	34	31

1/ Refer to Appendix A for a description of these reporting variables and the sample size in each reporting group.

2/ For approximately 30 percent of the states, supervisors left this question blank, or indicated that the specific amount could not be determined.

Fewer state supervisors reported spending a moderate or large amount of time on locating and evaluating instructional materials (39-53 percent), working with college personnel (32-53 percent), attending professional meetings (35-44 percent) and working with state supervisors of other subject areas (34-41 percent). Relatively few state supervisors reported that writing proposals (9-18 percent) or administrative duties (21-29 percent) consumed more than a small amount of their time.

Differences between subject areas were for the most part rather small. However, mathematics supervisors were more likely to spend considerable time on in-service programs (83 percent spend a moderate or large amount of time coordinating in-service programs versus 72 percent for social studies and 66 percent for science) and science supervisors were more likely to spend a moderate or large amount of time working with college personnel (53 percent for science versus 35 percent for mathematics and 32 percent for social studies).

G. Roles of Local District Supervisors

Superintendents were asked to indicate the number of full-time equivalent district wide supervisors/coordinators in their districts. The data, presented in Table 14, show that 63 percent of the districts have no district supervisors. Districts in the Northeast and South are significantly more likely than those in the North Central and Western regions to have 1 or more district-supervisors, while rural districts and small districts are quite unlikely to have district supervisors.

Each superintendent was asked to designate one person, preferably a district-wide supervisor if there was one, to answer questions about district programs in each of six subject area/grade range combinations (K-6 and 7-12 science, mathematics and social studies). In some districts the same person was designated for all six areas; in other districts as many as six different people were designated. Table 15 shows the breakdown of respondents by job title. Note that only 25 percent of the K-6 respondents and 20 percent of the 7-12 respondents are district-wide supervisors or curriculum coordinators; an additional 10 percent at K-6 and 9 percent at 7-12 are associate or assistant superintendents for instruction, a role which is often quite similar to district-wide supervisor. The majority of respondents are

Table 14

PERCENT OF DISTRICTS WITH 0, 1-5, AND 6 OR MORE DISTRICT SUPERVISORS, BY REGION, TYPE OF COMMUNITY, AND SIZE OF DISTRICT[1/]

	Number of Supervisors		
	0	1-5	6 or More
Nation (N = 340)	63	26	11
Region[2/]			
Northeast	42	25	33
South	56	33	11
North Central	75	22	3
West	67	26	8
Type of Community			
Rural	78	20	3
Small City	44	41	15
Urban	8	22	71
Suburban	35	33	32
Unknown	77	20	2
Size of District			
Small	80	18	2
Medium	17	52	31
Large	12	21	67
Unknown	3	97	0

1/ Estimates do not include the 16 districts where superintendents either said there were no supervisors but answered questions about them, or said there were supervisors but did not answer the questions about them.

2/ Refer to Appendix A for a description of these reporting variables and the sample size in each reporting group.

tied to a single school (either as teacher, principal, or department chairman) and less likely to be able to coordinate instruction throughout the district. It should be noted, however, that in many small districts the entire 7-12 program is confined to only 1 or a few schools and a department chairman may in fact have adequate time to coordinate instruction in a particular subject area. This is less likely in the case of teachers because of their teaching loads or principals because they would need to divide their attention among a number of subjects.

Table 15

PERCENT OF DISTRICTS WHERE DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS HOLD EACH TITLE, BY GRADE RANGE

Title	District Program Questionnaire Grade Range[1/]	
	K-6	7-12
Superintendent	1	3
Associate or assistant superintendent for instruction	10	9
District supervisor/curriculum coordinator	25	20
Department chairman	3	15
Principal	32	18
Teacher	28	31
Missing	2	4

1/ These estimates are based on a total of 955 respondents. On the average, each respondent completed questionnaires for 2 areas (for example, K-6 and 7-12 social studies, or K-6 math and K-6 science).

Table 16 presents further evidence that very few districts have "full-time" coordinators (defined here as a person spending more than 75 percent of his or her time on district-wide coordination). Respondents to the district program questionnaire were asked to indicate the percent of time they spent on district supervision/coordination of one or more subject areas; responses are shown broken down by subject/grade range category. (Recall that on the average each respondent had been designated for 2 subject/grade range categories.) The percent of respondents spending 75 percent or more of their time on supervision/coordination ranged from 16 percent to 26 percent.

Table 16

TIME SPENT IN DISTRICTWIDE SUPERVISION/COORDINATION
BY SUBJECT AND GRADE RANGE

	Percent of District Program Questionnaire Respondents		
	0	Less Than 75%	75% or More
Mathematics			
K-6 (N = 310)	35	39	26
7-12 (N = 302)	42	41	16
Science			
K-6 (N = 314)	39	39	22
7-12 (N = 295)	37	42	20
Social Studies			
K-6 (N = 285)	38	38	21
7-12 (N = 268)	31	49	20

Respondents who indicated they spend at least some of their time on district-wide supervision/coordination were asked about the subjects they supervised and the amount of their supervision/coordination time which is devoted to each of a number of activities. As Table B.2 in the Appendix shows, many supervisors are responsible for more than one subject area. For example, 72 percent of those who were designated to answer questions about district K-6 mathematics programs have responsibility for science supervision; 68 percent for social studies, 71 percent for reading, language arts or English, and 63 percent for other subjects.

These same respondents were asked to indicate the amount of their supervision/coordination time they spent on each of a number of activities. These data, presented in Appendix Table B.3, are rather consistent across the 6 designated subject/grade range categories (a fact which is not too surprising since many respondents answered questions for two or more subject areas).

The majority of persons who have district-wide coordination responsibilities spend a moderate or large amount of their supervision/coordination time planning and/or developing curricula (percentages ranged from 61 percent for 7-12 social studies program questionnaire respondents to 73 percent for 7-12 mathematics respondents). Other activities on which a majority of these persons spend a moderate or large amount of time include disseminating information about curriculum materials (percentages ranged from 55 percent to 63 percent of respondents), locating and evaluating instructional materials (53-70 percent of respondents), and administrative duties (51-56 percent of respondents). A sizable number of respondents spend a moderate or large amount of time providing/coordinating in-service programs (43-60 percent), observing classrooms (40-47 percent), and working with individual teachers outside the classroom situation (39-57 percent). Relatively few respondents indicated that they spend a moderate or large amount of time on hiring teachers (29-35 percent), evaluating teachers (32-42 percent), or attending professional meetings (35-45 percent).

Superintendents who indicated that their districts had at least one supervisor were asked if each of a number of criteria is used in the selection of district supervisors. The results, shown in Table 17, indicate that prior relevant teaching experience and supervisor certification are required in most

Table 17

PREREQUISITES FOR HIRING DISTRICT SUPERVISORS[1/]

	Percent of Districts			
	Required	Preferred	Not Usually Considered	Missing
Prior relevant teaching experience	87	13	0	1
Prior teaching experience in your district................	17	47	32	3
Supervisor certification......	80	14	6	1
Master's degree in relevant field	65	27	8	0
Doctoral degree in relevant field	0	24	71	5
Prior experience as district supervisor	1	39	56	4

1/ Estimates are based on the 225 districts which reported having one or more district supervisors and which provided answers to at least part of this question.

districts (87 percent and 80 percent, respectively). A master's degree is required in 65 percent of the districts and preferred in another 27 percent; however, most districts (71 percent) do not consider if the applicant has a doctorate and no districts require a doctoral degree. Prior teaching experience in the district is required by 17 percent of the districts, and preferred by another 47 percent. Prior experience as a district supervisor is required by only 1 percent of the districts; 56 percent report that such experience is not usually considered.

Since many of the district program questionnaire respondents were designated to answer questions about more than one subject area, it is interesting to examine respondent "allegiances" as measured by memberships in various professional organizations and attendance at professional meetings. Table 18 shows that fewer than 50 percent of the designated persons for each subject/grade range category attended a professional meeting in that subject at the state, regional or national level in the 1975-76 school year. In both science and social studies, those responding for the 7-12 grade range were significantly more likely than the K-6 respondents to have attended a professional meeting in that subject; the K-6 versus 7-12 difference in mathematics is not statistically significant.

Table 18

DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS' ATTENDANCE AT ONE OR MORE PROFESSIONAL MEETINGS IN 1975-76, BY SUBJECT AND GRADE RANGE

District Program Questionnaire Subject/Grade Range	Attendance at Professional Meeting in this Subject		
	Percent Yes	Percent No	Percent Missing
K-6			
Mathematics (N = 327)	45	47	9
Science (N = 326)	25	53	22
Social Studies (N = 303)	16	61	23
7-12			
Mathematics (N = 321)	49	46	4
Science (N = 318)	42	53	5
Social Studies (N = 298)	37	55	8

As shown in Table 19, respondents to K-6 district program questionnaires are about as likely to belong to a state level reading, language arts or English professional education organization as they are to belong to a state level education organization in their designated subject areas. These same people were more likely to belong to a state level supervision and curriculum development organization. At the secondary level, allegiance to a particular subject area appears to be stronger, with larger percentages belonging to professional organizations in their designated subject areas. At the same time a sizable number of respondents belong to a state level supervision and curriculum development organization.

Table 20 shows the percent of districts where the district program questionnaire respondent for each subject/grade range category belongs to each of a number of national professional organizations. The largest number of respondents in each category belong to the National Education Association (ranging from 36 to 50 percent of respondents); followed by the Association for Supervision and Curriculum Development (from 17 to 26 percent), Phi Delta Kappa (from 17 to 21 percent) and the International Reading Association (from 4 to 13 percent). Sixteen percent of K-6 mathematics program questionnaire respondents and 31 percent of the 7-12 level respondents belong to the National Council of Teachers of Mathematics. In science, 12 percent of K-6 questionnaire respondents and 23 percent of 7-12 questionnaire respondents belong to the National Science Teachers Association; and in social studies, 8 percent of K-6 questionnaire respondents and 19 percent of 7-12 questionnaire respondents belong to the National Council for the Social Studies. Interestingly, very few respondents belong to the national associations of supervisors in their designated subject areas.

H. Supervision/Coordination at the School Level

One potential source of instructional help for teachers is their school principal. However, there is evidence that principals may often not be prepared to give this assistance. Table 21 shows the distribution of undergraduate major areas among principals in each sample grade range. Note that relatively few principals in any grade range majored in either mathematics or science, while more than 25 percent majored in social studies. In addition, a considerable number of elementary school principals majored in reading, language arts, or English.

Table 19

PERCENT OF DISTRICTS WHERE DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS BELONG TO EACH TYPE OF PROFESSIONAL ORGANIZATION AT THE STATE LEVEL, BY SUBJECT AND GRADE RANGE

District Program Questionnaire Subject/Grade Range	Type of Professional Organization				
	Math	Science	Social Studies	Reading/Language Arts/English	Supervision/Curriculum Development
K-6					
Mathematics (N = 327)	24	15	13	26	33
Science (N = 326)	14	26	15	27	32
Social Studies (N = 303)	13	14	20	28	33
7-12					
Mathematics (N = 321)	36	7	2	8	25
Science (N = 318)	4	40	2	7	27
Social Studies (N = 298)	1	4	23	7	28

Table 20

PERCENT OF DISTRICTS WHERE DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS BELONG TO EACH PROFESSIONAL ORGANIZATION, BY SUBJECT AND GRADE RANGE

Organization	Mathematics K-6	Mathematics 7-12	Science K-6	Science 7-12	Social Studies K-6	Social Studies 7-12
American Educational Research Association (AERA)...	1	1	1	3	1	1
Association for Education of Teachers in Science (AETS)	1	0	1	2	0	1
Association for Supervision and Curriculum Development (ASCD)	24	17	25	17	26	20
International Reading Association (IRA)	13	4	8	7	13	5
National Association of Research in Science Teaching (NARST)	1	1	1	2	0	0
National Education Association (NEA)	36	50	40	48	40	43
National Council for the Social Studies (NCSS)	3	1	3	1	8	19
National Council of Teachers of Mathematics (NCTM).	16	31	4	4	3	0
National Council of Supervisors of Mathematics (NCSM)	3	4	1	1	0	1
National Science Supervisors Association (NSSA) ...	1	1	3	6	0	0
National Science Teachers Association (NSTA)	2	2	12	23	1	1
Phi Delta Kappa (PDK)	21	18	20	18	21	17
Social Studies Specialists Association (SSSA)	0	0	0	0	2	2
Sample N	327	321	326	318	303	298

Table 21

PERCENT OF PRINCIPALS WITH VARIOUS UNDERGRADUATE MAJORS BY SAMPLE GRADE RANGE

	Major Area					
	Mathematics	Science	Social Studies	Reading/ Language Arts/English	Other	Missing
K-3 (N = 317)	4	9	28	22	32	5
4-6 (N = 292)	7	10	28	23	26	7
7-9 (N = 298)	4	11	31	16	24	13
10-12 (N = 270)	8	10	27	10	34	11

Table 22

PERCENT OF PRINCIPALS WHO FEEL "NOT WELL QUALIFIED" TO SUPERVISE EACH SUBJECT BY SAMPLE GRADE RANGE

Sample Grade Range	Mathematics	Science	Social Studies	Reading/ Language Arts/English
K-3 (N = 317)	12	20	5	6
4-6 (N = 292)	8	17	2	7
7-9 (N = 298)	15	26	2	13
10-12 (N = 270)	26	15	8	23

Of course, it is not necessary to have majored in a particular subject area in order to be competent to supervise instruction in that area. However, as Table 22 indicates, principals' perceptions of their qualifications for instructional supervision follow much the same pattern as their major areas. Almost all principals feel at least adequately qualified to supervise instruction in social studies, and almost all elementary principals feel at least adequately qualified to supervise reading instruction. On the other hand, considerable numbers of principals at each level indicated they are "not well qualified" to supervise science instruction; and many secondary principals perceive themselves as inadequately qualified to supervise mathematics and reading instruction.

The field-test conducted during the instrument development phase of this study found an extremely high correlation among subject areas within a school in terms of department chairmen; a school which had a chairman in one academic subject area almost always had a chairman in each of the other academic subject areas. Consequently, principals in the full-scale survey were asked if the school had any department chairmen and if so, were they given released time or additional salary to carry out their duties. The results, presented in Table 23, show that only 20 percent of sample schools with grades 10-12 have no chairmen, while from 52 to 69 percent of schools in the other 3 grade ranges do not have department chairmen. Clearly, then, many K-3, 4-6, and 7-9 teachers do not get assistance from this source.

Table 23

STATUS OF DEPARTMENT CHAIRMEN BY SAMPLE GRADE RANGE

Sample Grade Range	Percent of Schools			
	No Chairman	Chairmen Not Compensated	Chairmen Compensated	Missing
K-3 (N = 317)	69	17	10	4
4-6 (N = 292)	69	14	12	5
7-9 (N = 298)	52	19	25	4
10-12 (N = 270)	20	24	50	6

Chapter 3

Science, Mathematics and Social Studies Course Offerings

A. Overview

Teachers provided data about the time spent in science, mathematics, and social studies instruction; these data are reported in Section B. Principals of schools with grades 7-9 and 10-12 were asked to indicate the number of sections and the total enrollment of each science, mathematics, and social studies course offered in their schools. These data were used to calculate the percent of schools offering each course and the total enrollment in that course; the results of these analyses are presented in Section C. Finally, Section D presents some miscellaneous information about science, mathematics, and social studies classes including course duration, average class size for each subject, and ability composition of science, mathematics and social studies classes.

B. Time Spent in Science, Mathematics and Social Studies Instruction

Each teacher was asked to indicate the number of minutes spent in the most recent lesson in the selected subject and class. It was recognized that some subjects are not taught every day in some classes; for example some elementary classes have instruction in reading and mathematics every day but in science and social studies instruction only on alternate days. To avoid overestimating the number of minutes typically spent on a subject, if the most recent lesson did not take place on the last day school was in session, the number of minutes was treated as zero when the average was computed.

Table 24 shows the average number of minutes spent in classes in each subject and grade range.[1] Note that the number of minutes spent in each subject generally increases with increasing grade level (however, the difference for mathematics is not statistically significant). Also, in grades K-3 the amounts of time spent in science and social studies instruction are significantly less than that spent in mathematics instruction (an average of 19 minutes for science, 22 for social studies, and 38 for mathematics). In grades 4-6 the time spent on mathematics is significantly greater than that spent on science, but the magnitude of the difference is not nearly as large as in grades K-3.

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1 The reader should exercise caution in interpreting these results since they are based on teacher estimates of time spent rather than on precise measurements.

Table 24

AVERAGE NUMBER OF MINUTES PER DAY SPENT IN ELEMENTARY SCHOOL MATHEMATICS, SCIENCE, AND SOCIAL STUDIES LESSONS, BY GRADE RANGE 1/

	Subject					
	Mathematics		Science		Social Studies	
Grade Range	Minutes	Standard Error	Minutes	Standard Error	Minutes	Standard Error
K-3 (N=801)	38	2.53	19	4.12	22	1.84
4-6 (N=805)	44	2.09	35	1.73	40	4.62

1/ Classes in which the most recent lesson was not on the last day school was in session were assigned zeros for number of minutes spent in the lesson.

In addition to asking teachers about the number of minutes spent in their most recent lesson in a particular subject, each elementary teacher was asked to write in the approximate number of minutes typically spent teaching mathematics, science, social studies and reading.[1] The average number of minutes per day typically spent in K-3 and 4-6 instruction in each subject is shown in Table 25; to facilitate comparisons among the subject areas only teachers who teach all 4 of these subjects to one class of students were included in these analyses. Note that in each grade level the amount of time spent is greatest for reading, followed by mathematics, then social studies and finally science. However, the difference between reading and the other subjects decreases from K-3 to 4-6 because the amount of time spent on reading decreases and the amount of time spent on each of the other subjects increases.

Each K-3 and 4-6 teacher was asked how the amount of time spent in instruction in the selected subject and class compared to the amount of time spent in a similar class 3 years ago. The responses of all teachers who taught a comparable class 3 years ago are shown in Table B.4 in the Appendix. Approximately 60 percent of the science and social studies classes

[1] Again, it is essential to remember that the results are based on teacher estimates of time spent, not on precise measurements.

spend about the same amount of time on instruction as was spent 3 years ago, compared to 70 percent of the mathematics classes. Perhaps due to the increased emphasis on "basic skills" in recent years, only 3 percent of mathematics classes spend less time now while 22 percent spend more time now. In science, the percent spending more time now was roughly the same as the percent spending less time now (17 and 14 percent, respectively); and in social studies 22 percent of the K-6 classes spend more time now and 12 percent spend less time now.

Table 25

AVERAGE NUMBER OF MINUTES PER DAY SPENT TEACHING EACH SUBJECT IN SELF-CONTAINED CLASSES, BY GRADE RANGE[1/]

Subject	Grade Range: K-3 Average Number of Minutes	K-3 Standard Error	4-6 Average Number of Minutes	4-6 Standard Error	Total Average Number of Minutes	Total Standard Error
Mathematics	41	.61	51	.43	44	.38
Science	17	.24	28	.64	20	.28
Social Studies	21	.62	34	.71	25	.53
Reading	95	1.60	66	1.34	86	1.18
Sample N	467		302		769	

1/ Only teachers who indicated they teach mathematics, science, social studies, and reading to one class of students were included in these analyses.

C. Science, Mathematics and Social Studies Course Offerings

Each principal of a 7-9 or 10-12 sample school was given a list of science, mathematics and social studies courses and asked to specify the current total enrollment and the number of sections of each course offered in the school. The principal was also asked to write in course names and enrollment information for those science, mathematics, and social studies courses offered in the school which did not appear on the printed list.

Table 26 shows the percent of schools in each sample grade range which offer each of the most common science, mathematics and social studies courses. It is important to remember that a school which was selected as a 7-9 sample school or a 10-12 sample school may contain other grades as well. For example, some 9-12 schools were included in the 7-9 sample, others were included in the 10-12 sample, and still others were included in both samples. Thus, the fact that approximately 60 percent of all schools with grades 10-12 offer a grade 9 general science course is simply a reflection of the fact that so many schools which have grades 10-12 also include grade 9.

To help in the interpretation of course offerings and enrollment results, data are presented for 6 groups:

(1) schools which include one or more of the grades 7-9 but do not include any higher grades (typically junior high schools and middle schools);

(2) schools with one or more of the grades 7-9 and also one or more higher grades (typically 7-12 and 9-12 schools);

(3) all schools which contain one or more of the grades 7-9;

(4) schools which include one or more of the grades 10-12 but do not include any lower grades;

(5) schools which include one or more of the grades 10-12 and also one or more lower grades; and

(6) all schools which contain one or more of the grades 10-12.

For example, Table 26 shows that while an estimated 23 percent of all schools with one or more of the grades 10-12 offer grade 7 general science, none of the "schools with only grades 10-12" offers this course. It is reasonable to conclude that the grade 7 general science enrollment in schools with grades 10-12 is composed of grade 7 students who attend these schools.

There is some evidence in the tables that a few principals may have made incorrect entries in their questionnaires. For example, according to Table 26, 1 percent of the "schools with only grades 10-12" offer a course in social studies, grade 9. Fortunately, this type of error does not appear to have been widespread.

A potentially more serious error is that some principals may not have followed the instruction, "Do not include courses or enrollments more than once." For example, a school with 26 eighth graders indicated that 26

Table 26
PERCENT OF SCHOOLS OFFERING EACH
OF THE MOST COMMON SCIENCE, MATHEMATICS,
AND SOCIAL STUDIES COURSES, BY SAMPLE
GRADE RANGE

I. Science Courses	Percent of Schools Offering Course					
	Schools with only Grades 7-9	Schools with Grades 7-9 and Higher	All schools with Grades 7-9	Schools with only Grades 10-12	Schools with Grades 10-12 and Lower	All schools with Grades 10-12
General Science, Grade 7	76	37	65	0	28	23
General Science, Grade 8	66	36	57	0	31	26
General Science, Grade 9	6	56	21	0	55	46
General Science, Grades 10-12	0	19	6	18	11	12
Earth Science	20	46	28	28	39	37
Life Science	21	24	22	9	20	18
Physical Science	13	47	23	39	40	40
Biology I	5	85	30	91	96	95
Chemistry I	0	74	23	99	86	89
Physics	1	72	22	94	75	78
Astronomy	0	5	2	18	4	6
Physiology	0	4	1	19	2	5
Zoology	0	1	0	12	1	3
General Science, any grade	79	74	78	19	69	60
Biology II, Advanced Biology	0	31	10	57	45	47
Chemistry II, Advanced Chemistry	0	9	3	58	15	23
Physics II, Advanced Physics	0	2	1	14	3	5
Environmental Education, Ecology	0	7	2	15	16	16
Sample N	212	79	291	90	163	253

Table 26 (continued)
PERCENT OF SCHOOLS OFFERING EACH
OF THE MOST COMMON SCIENCE, MATHEMATICS,
AND SOCIAL STUDIES COURSES, BY SAMPLE
GRADE RANGE

III. Social Studies Courses	Percent of Schools Offering Course					
	Schools with only Grades 7-9	Schools with Grades 7-9 and Higher	All schools with Grades 7-9	Schools with only Grades 10-12	Schools with Grades 10-12 and Lower	All schools with Grades 10-12
Social Studies, Grade 7	91	42	76	0	38	31
Social Studies, Grade 8	75	47	66	0	40	33
Social Studies, Grade 9	11	43	21	1	28	24
Social Studies, Grades 10-12	0	24	7	12	12	12
State History	13	20	15	7	26	22
U.S. History	18	82	37	96	93	93
World History	3	62	21	85	67	70
American Government	8	55	22	73	59	61
Economics	0	38	12	65	27	34
Geography	5	34	13	37	30	31
Psychology	0	40	12	65	41	46
Sociology	0	50	15	74	52	56
Anthropology	0	1	0	10	7	7
Social Studies, any grade	92	68	85	13	57	50
Afro-American Studies, Black History	0	2	1	12	5	6
Law	0	2	1	6	7	7
American Problems, Contemporary Problems	0	7	2	18	13	14
Psychology, Behavioral Studies	0	40	12	69	41	46
Sample N	212	79	291	90	163	253

Table 26 (continued)
PERCENT OF SCHOOLS OFFERING EACH
OF THE MOST COMMON SCIENCE, MATHEMATICS,
AND SOCIAL STUDIES COURSES, BY SAMPLE
GRADE RANGE

II. Mathematics Courses	Percent of Schools Offering Course: Schools with only Grades 7-9	Schools with Grades 7-9 and Higher	All schools with Grades 7-9	Schools with only Grades 10-12	Schools with Grades 10-12 and Lower	All schools with Grades 10-12
General Math, Grade 7	98	45	82	0	41	34
General Math, Grade 8	90	49	78	0	43	36
General Math, Grade 9	17	80	36	1	71	59
General Math, Grades 10-12	0	40	12	78	34	42
Business Math	2	50	17	77	47	52
Elementary Algebra	35	98	54	85	89	88
Advanced Algebra	5	76	27	87	87	87
Geometry	9	89	33	100	97	97
Trigonometry	0	45	14	64	52	54
Probability, Statistics	0	10	3	18	5	7
Computer Math	0	24	7	37	23	25
Advanced Senior Math	0	54	16	65	55	56
Calculus	0	24	7	49	27	31
General Mathematics, any grade	100	95	98	79	90	88
Any Algebra	37	100	56	99	97	97
Any Geometry	9	89	33	100	97	97
Calculus or Advanced Mathematics	1	68	21	83	74	76
Sample N	212	79	291	90	163	253

students are enrolled in one section of general science, grade 8 and 26 students are enrolled in one section of earth science. While we cannot be sure that this is a violation of the instructions, the suspicion persists. This problem is more likely to have affected 7-9 courses than 10-12 courses, since high school courses tend to have specific titles.

The reader must also recognize that some of these data are based on extremely small samples. For example, of the 291 responding sample schools with grades 7-9, only 79 schools contain one or more of the higher grades. Similarly, only 90 of the 253 responding 10-12 sample schools are in the "schools with only grades 10-12" category. Therefore, as can be seen in Appendix C, the standard errors associated with estimates of course offerings and enrollments are quite large.

Even with these limitations, the data in Table 26 do provide some valuable insights into patterns of science, mathematics, and social studies course offerings. For example, it can be seen that general science is the only science course offered by more than 50 percent of all of the schools with grades 7-9. Similarly "social studies" is the only course in this broad subject area which is offered by more than half of the schools with grades 7-9, and general mathematics and elementary algebra are the only mathematics courses offered in a majority of schools with grades 7-9.

At the high school level, the most commonly offered science courses are biology, chemistry, and physics. Schools with only grades 10-12 tend to have more diverse course offerings. For example, 19 percent of the "10-12 only" schools offer a course in physiology compared to only 2 percent of the 10-12 schools which also contain one or more of the lower grades. Similarly, "10-12 only" schools are significantly more likely than schools which also include grade 9 to offer advanced science courses such as Chemistry II and Physics II.

In mathematics, geometry, elementary algebra, advanced algebra, general mathematics, advanced mathematics, business mathematics and trigonometry are each offered in a majority of schools which contain one or more of the grades 10-12. Schools which include only grades 10-12 are more likely than those which also include grade 9 to offer additional mathematics electives such as computer mathematics or probability and statistics.

As was mentioned earlier, if principals did not find one or more of their schools' courses on the list which was provided, they were instructed to write in the names of those courses and then to provide enrollment data. In some cases these additional course names were equivalent or quite similar to those already on the list (e.g., introductory algebra, or basic algebra which might be considered the same as elementary algebra). To provide a more complete description of the enrollment picture, Table 26 includes data about schools offering any algebra course; note that 97 percent of all schools which includes grades 10-12 offer at least one course in algebra.

The most commonly offered high school social studies course is United States history, which is offered in 93 percent of the schools with grades 10-12. (It is likely that the remaining 7 percent include American history content in other courses such as "social studies.") World history, American government, and sociology are the only other social studies courses offered by a majority of schools with one or more of the grades 10-12. Again, "10-12 only" schools are significantly more likely to offer additional social studies courses such as psychology and economics.

Table 27 presents enrollment data for each of the most commonly offered science, mathematics, and social studies courses. The standard errors associated with these data can be found in Table C.5 in the Appendix. As was the case with estimates for percentages of schools offering each course, enrollment estimates are based on rather small sample sizes and consequently the standard errors tend to be quite large. Therefore, these enrollment figures should be treated as only rough estimates.[1]

If a course includes only students in grades 7-9 (such as social studies, grade 8), the estimated enrollment can be obtained from the column "all schools with grades 7-9." Similarly, if a course is offered only in grades 10-12 (e.g., calculus), the enrollment estimate is presented in the "all schools with grades 10-12" column. However, for courses such as biology which may include some students in grades 7-9 and some in grades 10-12, using either of these columns would result in an underestimate of enrollment and adding these

[1] It should be noted that, in the interest of reducing respondent burden, principals were asked to provide total enrollment data for their schools rather than enrollment by grade. Therefore, it is usually not possible to determine the grade level(s) of students enrolled in these courses.

Table 27

TOTAL ENROLLMENTS IN MAJOR HIGH SCHOOL SCIENCE, MATHEMATICS, AND SOCIAL STUDIES COURSES

I. Science Courses	Schools With Only Grades 7-9 Enrollment	Schools With Grades 7-9 and Higher Enrollment	All Schools With Grades 7-9 Enrollment	Schools With Only Grades 10-12 Enrollment	Schools With Grades 10-12 and Lower Enrollment	All Schools With Grades 10-12 Enrollment
General Science, Grade 7	2,547,797	334,468	2,882,264	0	403,846	403,846
General Science, Grade 8	2,255,604	353,622	2,609,225	0	428,236	428,236
General Science, Grade 9	408,917	922,300	1,331,218	0	1,119,400	1,119,400
General Science, Grades 10-12	14,218	289,259	303,477	69,005	150,232	219,237
Earth Science	867,794	485,597	1,353,392	64,090	620,766	684,856
Life Science	1,000,557	265,915	1,266,472	36,503	258,661	295,164
Physical Science	745,091	582,029	1,327,121	86,471	602,367	688,838
Biology I	158,141	1,490,214	1,648,355	881,266	2,072,200	2,953,466
Chemistry I	2,417	566,572	568,989	383,359	812,781	1,196,140
Physics	22,169	257,035	279,204	155,313	356,297	511,611
Astronomy	0	14,147	14,147	23,478	22,898	46,375
Physiology	0	15,540	15,540	38,174	12,356	50,529
Zoology	0	8,243	8,243	52,099	6,845	58,943
General Science, Any Grade	5,239,780	1,928,490	7,168,270	72,052	2,119,303	2,191,355
Biology II, Adv. Biology	2,927	176,278	179,204	83,206	220,511	303,717
Chemistry II, Adv. Chem.	3,379	28,899	32,279	74,914	62,040	136,954
Physics II, Adv. Physics	0	8,256	8,256	13,977	39,587	53,564
Ecology, Envtl. Education	4,841	78,015	82,855	53,616	116,075	169,691
Sample N	212	79	291	90	163	253

Table 27 (Continued)

TOTAL ENROLLMENTS IN MAJOR HIGH SCHOOL SCIENCE, MATHEMATICS, AND SOCIAL STUDIES COURSES

II. Mathematics Courses	Schools With Only Grades 7-9 Enrollment	Schools With Grades 7-9 and Higher Enrollment	All Schools With Grades 7-9 Enrollment	Schools With Only Grades 10-12 Enrollment	Schools With Grades 10-12 and Lower Enrollment	All Schools With Grades 10-12 Enrollment
General Math, Grade 7	3,540,876	384,514	3,925,390	0	541,802	541,802
General Math, Grade 8	3,205,751	452,187	3,657,938	0	570,732	570,732
General Math, Grade 9	664,094	862,316	1,526,410	1,512	1,068,914	1,070,426
General Math, Grades 10-12	0	608,112	608,112	351,685	476,074	827,759
Business Math	35,883	292,285	328,168	214,056	358,808	572,864
Elementary Algebra	796,319	1,605,947	2,402,266	373,194	1,655,499	2,028,693
Advanced Algebra	122,858	546,582	669,440	412,981	781,298	1,194,279
Geometry	83,901	1,003,867	1,087,768	606,240	1,208,288	1,814,528
Trigonometry	0	168,363	168,363	134,923	324,617	459,541
Probability, Statistics	0	32,863	32,863	18,613	21,087	39,700
Computer Math	1,058	122,099	123,157	34,896	117,630	152,525
Advanced Senior Math	0	139,750	139,750	72,719	152,688	225,407
Calculus	0	52,337	52,337	36,421	68,929	105,349
General Math, Any Grade	7,436,574	2,396,485	9,833,060	354,453	2,711,503	3,065,956
Any Algebra	1,022,759	2,545,802	3,568,561	895,637	2,817,559	3,713,196
Any Geometry	83,901	1,007,674	1,091,575	617,608	1,215,845	1,833,453
Sample N	212	79	291	90	163	253

Table 27 (Continued)

TOTAL ENROLLMENTS IN MAJOR HIGH SCHOOL SCIENCE, MATHEMATICS, AND SOCIAL STUDIES COURSES

III. Social Studies Courses	Schools With Only Grades 7-9 Enrollment	Schools With Grades 7-9 and Higher Enrollment	All Schools With Grades 7-9 Enrollment	Schools With Only Grades 10-12 Enrollment	Schools With Grades 10-12 and Lower Enrollment	All Schools With Grades 10-12 Enrollment
Social Studies, Grade 7	3,294,015	368,217	3,662,232	0	479,813	479,813
Social Studies, Grade 8	2,788,168	466,950	3,255,118	0	531,163	531,163
Social Studies, Grade 9	863,780	688,676	1,552,456	893	890,999	891,892
Soc. St., Grades 10-12	0	564,516	564,516	198,498	839,194	1,037,692
State History	333,745	363,691	697,436	24,769	420,768	445,537
U. S. History	792,605	2,123,093	2,915,698	1,480,114	2,526,178	4,006,291
World History	123,616	1,077,078	1,200,694	660,967	1,414,432	2,075,399
U. S. Government	200,884	749,252	950,136	673,395	971,791	1,645,186
Economics	31,926	538,296	570,222	243,197	439,335	682,532
Geography	208,950	310,048	518,998	88,152	495,185	583,337
Psychology	5,096	336,215	341,312	225,852	453,986	679,838
Sociology	8,138	365,957	374,095	221,695	525,622	747,316
Anthropology	0	7,075	7,075	19,494	71,820	91,314
Social Studies, Any Grade	6,945,963	2,097,926	9,043,889	204,973	2,754,543	2,959,516
Law	5,342	17,418	22,760	18,829	44,531	63,360
Amer. Prob., Contemp. Prob.	3,329	54,818	58,147	48,236	160,597	208,833
Psychology, Behavioral St.	5,096	359,648	364,745	243,285	458,813	702,099
Sample N	212	79	291	90	163	253

enrollments would result in an overestimate. An unbiased estimate of the enrollment in any course which may include students in both the 7-9 and 10-12 grade ranges may be obtained by adding the enrollments in the columns headed "schools with only grades 7-9" and "all schools with grades 10-12." The procedure for determining the standard error of this sum is described in Appendix C.

The results in Table 27 show that, as might be expected, the science, mathematics, and social studies courses which are offered in the largest numbers of schools (see Table 26) are generally the ones with the largest enrollments. For example, the largest science enrollment in schools which do not include grade 10 or above (typically junior high schools and middle schools) is in general science. Approximately 5 million students in these schools are enrolled in general science. Approximately 2 million students who attend other types of schools with one or more of the grades 7-9 (for example 7-12 and 9-12 schools) are also enrolled in general science. Life science, earth science, and physical science courses each have enrollments exceeding 1 million; the majority of this enrollment is in schools which do not include grades higher than grade 9.

Approximately 3 million students in schools with grades 10-12 are enrolled in biology, approximately 1.2 million in Chemistry I, and approximately 500,000 in physics. Since so many of the schools which include grades 10-12 also include grade 9, the other science courses with enrollments of at least 500,000 tend to be the ones which have large enrollments in schools with grades 7-9: general science, physical science, and earth science.

In junior high schools and middle schools, the largest grade 7-9 mathematics enrollment (more than 7 million students) is in general mathematics. More than 2 million additional students in schools with grades 7-9 and higher grades are enrolled in general mathematics courses as are approximately 350,000 students in schools with only grades 10-12. Nearly 5 million students are enrolled in some type of algebra course; approximately 1 million of these are in junior high schools and middle schools, and close to 1 million are in 10-12 high schools; the remaining 2.5 million of the algebra students are in schools which include all of the grades 9-12.

Geometry is the only other mathematics course with an enrollment greater than 1 million students. Of the approximately 1.8 million geometry students, one third are in 10-12 schools and almost all of the remaining students are in schools which include all of the grades 9-12. Business mathematics courses enroll almost 600,000 students; again the majority of these are in 9-12 schools, a sizable number are in 10-12 schools, while very few are in junior high schools. Enrollments in trigonometry and in advanced mathematics courses (including calculus courses) are of the same order of magnitude as that in physics (roughly 500,000).

Approximately 9 million students are enrolled in general social studies courses; approximately 7 million of these students attend junior high schools and middle schools, approximately 2 million are in 9-12 schools, while only 200,000 of the general social studies enrollment is in 10-12 high schools. United States History is the only other social studies course with a large enrollment in schools which go no higher than grade 9; approximately 800,000 junior high school and middle school students are enrolled in U.S. History.

Schools which include one or more of the grades 10-12 have their largest social studies enrollments in U.S. History (approximately 4 million), World History (approximately 2 million) and American Government (approximately 1.6 million). In each case, roughly one-third of the enrollment is in 10-12 schools, while the remainder is in schools which include grades 9-12. No other high school social studies course has an enrollment as high as 1 million, although several of the social science courses (including sociology, psychology, economics and geography) have enrollments in the 600,000-700,000 range.

In addition to obtaining course titles from principals, the survey instruments requested that each sample secondary teacher provide the title of a randomly selected class. (Unlike principals, teachers were not given a list of the most common courses.) The results are shown in Table 28. Note that general mathematics and algebra together account for almost 90 percent of all mathematics classes in grades 7-9, and algebra and geometry account for more than two-thirds of all 10-12 mathematics classes. Science classes are somewhat more diverse, although 4 courses (general science, earth science, life science and physical science) account for 86 percent of the 7-9 science classes and biology, chemistry, and physics together represent 74 percent of

Table 28

MOST COMMONLY OFFERED SCIENCE, MATHEMATICS, AND SOCIAL STUDIES COURSES

SCIENCE

Grades 7-9

Course	Percent of Classes
General Science	30
Earth Science	25
Life Science	16
Physical Science	15
Biology	6
Other Courses	8
	100%

Sample N = 535

Grades 10-12

Course	Percent of Classes
Biology	40
Chemistry	19
Physics	15
Advanced Biology (2nd Year Biology)	5
Other Courses	21
	100%

Sample N - 586

MATHEMATICS

Grades 7-9

Course	Percent of Classes
General Mathematics	64
Algebra	23
Remedial Mathematics	4
Other Courses	9
	100%

Sample N = 550

Grades 10-12

Course	Percent of Classes
Algebra	38
Geometry	30
Advanced Mathematics, Calculus	7
Consumer and/or Business Mathematics	6
General Mathematics	5
Other Courses	14
	100%

Sample N = 548

Table 28 (Continued)

MOST COMMONLY OFFERED SCIENCE, MATHEMATICS, AND SOCIAL STUDIES COURSES

SOCIAL STUDIES

Grades 7-9

Course	Percent of Classes
American History	34
Social Studies	18
State History	7
Civics	6
World Geography	5
Other Courses	29
	100%

Grades 10-12

Course	Percent of Classes
American History	27
World History	10
Psychology	7
American Culture, Contemporary Issues	7
United States Government	6
Economics	5
Other Courses	38
	100%

the 10-12 science classes. In social studies, on the other hand, while the most common courses can be identified (American history and social studies in grades 7-9 and American history in grades 10-12), they do not account for nearly as large a share of the classes.

The course offerings data provided by teachers are generally consistent with those provided by principals with one major exception: the share of the total enrollment held by the "general" courses in science, mathematics, and social studies. For example, based on principal data, it was estimated that 7 million students in junior high and middle schools are enrolled in grade 7, 8 or 9 social studies while fewer than 1 million are enrolled in United States history courses. Yet, based on teacher estimates, 34 percent of grade 7-9 social studies courses are U.S. history while only 18 percent are simply titled social studies. Part of the discrepancy may be due to differences in the item format and coding procedures, since principals were given a list of the most common course titles and teachers were asked to provide the title of the randomly selected class. Another possible explanation may be that teachers were more likely to respond in terms of the content of the course which, in the case of many grade 7-9 general social studies classes is primarily American history.

D. Other Characteristics of Science, Mathematics, and Social Studies Classes

Table 29 shows the percent of 7-9 and 10-12 courses in each subject area which are full-year, semester, and quarter courses. Eighty-eight percent of the 7-9 classes are one year in length, compared to 76 percent of 10-12 classes; most of the remainder are semester courses. In grades 10-12 a significantly larger percentage of social studies classes than mathematics or science classes are one semester in length.

Table 29

PERCENT OF SECONDARY COURSES OF VARYING DURATIONS, BY SUBJECT AND GRADE RANGE

Duration	Subject/Grade Range							
	Mathematics		Science		Social Studies		Total	
	7-9	10-12	7-9	10-12	7-9	10-12	7-9	10-12
Year	96	86	86	88	81	58	88	76
Semester	2	9	7	6	11	32	6	17
Quarter	1	3	4	4	4	6	3	4
Other	1	1	2	0	4	2	2	1
Missing	0	1	2	3	2	2	1	2
Sample N	550	548	535	586	453	490	1538	1624

Table 30 shows the average class size for science, mathematics, and social studies classes by subject and grade range. K-3 and 10-12 classes are significantly smaller than those in 4-6 and 7-9, and social studies classes are larger than classes in mathematics. (The social studies versus science difference is not statistically significant, even though the difference is nearly as large as that for mathematics versus social studies due to the larger standard error for average science class size.)

Teachers were asked to indicate the ability makeup of the selected class compared to the average student in the grade. Appendix Table B.5 shows the percent of classes in each subject/grade range category which are composed primarily of high ability students, those which are composed primarily of low ability students, and those which are made up of average ability students or students of widely varying abilities. Secondary classes are significantly more likely than elementary classes to have homogeneous grouping. In both science and mathematics, nearly half of the 10-12 classes are homogeneously grouped, while in social studies only one-fourth of the 10-12 classes are homogeneously grouped.

Table 30

AVERAGE CLASS SIZE FOR SCIENCE, MATHEMATICS, AND SOCIAL STUDIES CLASSES

	Science		Mathematics		Social Studies		Total	
	Class Size	Standard Error	Class Size	Standard Error	Class Size	Standard Error	Class Size	Standard Error
K-3	23.5	.36	24.2	.23	24.1	.38	24.0	.17
4-6	26.6	.65	27.7	.52	28.2	.63	27.5	.37
7-9	30.6	.74	26.7	.33	29.8	1.00	28.9	.43
10-12	22.8	.36	23.6	.46	27.2	.39	24.8	.25
Total	25.9	.36	25.5	.18	27.2	.36	26.2	.18
Sample N	1599		1612		1367		4578	

Chapter 4

Federally-Funded Curriculum Materials

A. Overview

While a survey of this type cannot possibly evaluate the impact of federal curriculum development efforts, it can provide data related to the dissemination and use of these materials. Section B presents information about attendance at NSF-sponsored institutes, conferences and workshops based on data collected from teachers, principals, and state and local supervisors. Other sources of information about federally funded curriculum materials are considered in Section C, while state dissemination activities are treated in Section D. Local district superintendents' perceptions about federal support for curriculum development are described in Section E. Finally, Section F presents data about the percent of districts, schools, and teachers using these curriculum materials.

B. Attendance at NSF-Sponsored Institutes, Conferences and Workshops

Teachers, principals, district supervisors (or other respondents to the district program questionnaires) and state supervisors were asked if they had attended any NSF-sponsored institutes, conferences or workshops. They were then presented with a list of types of NSF-sponsored activities and asked to indicate the ones they had attended.

Table 31 shows the percent of each group who attended one or more NSF-sponsored activities. The largest percentages are in the state supervisor category; 60 percent of the social studies, 77 percent of the mathematics, and 79 percent of the science state supervisors attended one or more of these activities.

There is a fairly consistent pattern for respondent participation in these activities to increase as grade level increases. For example, principals of schools containing one or more of the grades 10-12 were significantly more likely than other principals to have attended one or more NSF-sponsored insti-

Table 31

PERCENT OF RESPONDENTS ATTENDING ONE OR MORE NSF INSTITUTES

	Yes	No	Missing Or Inconsistent Response 1/
State Supervisors			
Mathematics (N = 50)	77	21	2
Science (N = 61)	79	15	6
Social Studies (N = 62)	60	35	5
K-6 District Program Q. Respondents			
Mathematics (N = 327)	18	63	19
Science (N = 326)	28	54	18
Social Studies (N = 303)	16	66	18
7-12 District Program Q. Respondents			
Mathematics (N = 321)	39	54	8
Science (N = 318)	46	48	6
Social Studies (N = 298)	21	71	8
Principals			
K-3 (N = 317)	10	85	5
4-6 (N = 292)	11	83	7
7-9 (N = 298)	13	81	6
10-12 (N = 270)	25	71	4
K-3 Teachers			
Mathematics (N = 297)	5	87	9
Science (N = 287)	2	91	8
Social Studies (N = 254)	4	87	9
4-6 Teachers			
Mathematics (N = 277)	5	85	10
Science (N = 271)	12	80	7
Social Studies (N = 281)	8	88	4
7-9 Teachers			
Mathematics (N = 550)	25	67	8
Science (N = 535)	32	63	4
Social Studies (N = 453)	4	90	6
10-12 Teachers			
Mathematics (N = 548)	37	60	3
Science (N = 586)	47	44	9
Social Studies (N = 490)	5	84	10

1/ Includes persons who indicated they had attended one or more NSF Institutes but then failed to circle the ones attended and those who said they had not attended any and then circled one or more.

tutes, conferences or workshops. Similarly, there is a tendency for science educators to have the most involvement, and social studies educators the least involvement in NSF-sponsored activities.[1] For example, only 4 percent of 7-9 social studies teachers have attended NSF activities, compared to 25 percent of 7-9 mathematics teachers and 32 percent of 7-9 science teachers.

Table 32 shows the percentages of 7-9 and 10-12 teachers who have attended one or more NSF-sponsored institutes, conferences, or workshops broken down by region, and type of community as well as by the school principals' participation in NSF-sponsored activities. The results show that teachers of grades 7-9 in the West are significantly more likely than teachers in any of the other regions of the country to have participated in one or more NSF-sponsored activities. This is not the case for teachers at the high school level. The only significant regional difference involving grade 10-12 teachers is that teachers in the South are significantly less likely than others to have participated in NSF-sponsored activities.

When the results are analyzed by type of community, once again one sees different patterns for 7-9 and 10-12 teachers. In grades 7-9, teachers in suburban areas are significantly less likely than others to have participated in these activities, while in grades 10-12 it is the rural teachers who have a significantly lower level of participation.

Finally, in grades 7-9 teachers whose principals have participated in NSF activities are significantly more likely to have participated in these activities (although the magnitude of the difference is not large). In grades 10-12 the difference is not significant.

Data concerning participation in particular types of NSF-sponsored activities are presented in Appendix Tables B.6-B.10. The most frequently attended activity for each gro p is the NSF Summer Institute. Approximately two-thirds of science and mathematics state supervisors and approximately one third of social studies state supervisors have attended an NSF Summer Institute. NSF In-service Institutes have also involved many state supervisors (48 percent in science, 43 percent in mathematics, and 23 percent in social studies). Other NSF activities which have involved 25 percent or more of the state supervisors in any of the 3 subjects include Academic Year Institutes

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[1] These findings are a reflection of the fact that a large number of NSF's teacher education activities were aimed at secondary science teachers.

Table 32

PERCENT OF 7-9 AND 10-12 TEACHERS ATTENDING ONE OR MORE NSF INSTITUTES[1/] BY REGION, TYPE OF COMMUNITY, AND PRINCIPAL ATTENDANCE AT ONE OR MORE NSF INSTITUTES

	7-9	10-12
Nation	21	28
Region[2/]		
Northeast	20	30
South	19	20
North Central	18	34
West	32	32
Type of Community		
Rural	21	23
Small City	22	30
Urban	23	35
Suburban	16	32
Unknown	24	14
Principal Attend An NSF Institute		
Yes	23	30
No	20	29
Unknown	22	35
Sample N	1538	1624

1/ Includes only those teachers who indicated they had attended one or more NSF Institutes and then circled the ones attended.

2/ Refer to Appendix A for a description of these reporting variables and the sample size in each reporting group.

(30 percent of science supervisors and 25 percent of those in social studies), Administrators Conferences (30, 20, and 15 percent in science, mathematics, and social studies, respectively), Leadership Development Projects (30 percent in science, 17 percent in social studies, and 12 percent in mathematics) and Resource Personnel Workshops (27 percent of the social studies state supervisors and 16 percent of those in science, but only 2 percent of mathematics state supervisors).

The data in Appendix Table B.7 indicate that NSF Summer Institutes rank first in attendance by respondents to each type of district program questionnaire; percentages range from 9 percent in K-6 social studies to 40 percent in 7-12 science. The second most often attended activity is the In-Service Institute; percentages were lowest for K-6 mathematics and social studies respondents and highest for 7-12 science respondents.

Principal attendance at NSF-sponsored activities (see Appendix Table B.8) follows much the same patterns as the other groups, though the percentages are considerably lower. The Summer Institute is once again the most common activity, with attendance percentages ranging from 7 percent of principals in schools with grades K-3 to 20 percent of principals in schools with grades 10-12. In-service institutes are the second most frequently attended activity but the percentages are quite low (4 percent at K-3, 2 percent at 4-6, 5 percent at 7-9 and 8 percent at 10-12).

Appendix Tables B.9 and B.10 show teacher participation in particular NSF activities broken down by grade range and by subject. The data show, once again, that (1) Summer Institutes and In-Service Institutes are the most frequently attended activities; (2) participation in NSF activities tends to increase with increasing grade range and (3) participation is highest for science educators and lowest for social studies educators.

C. Sources of Information About Federally Funded Curriculum Materials

Teachers, state supervisors, and respondents to the district program questionnaires were given a list of materials, and asked to select one set. Respondents were then asked to indicate the major sources from which they received information about this set of materials. State supervisors were to select the one set of materials that they have spent the most time and effort disseminating.[1] For teachers and local district supervisors the criterion was

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1 This criterion turned out to be a problem for many state supervisors; responses from almost half of the state supervisors could not be used since they did not refer to a single set of materials.

the one set of materials with which the respondent is most familiar; those who had never seen any of the listed materials were instructed to skip the question about sources of information.

As shown in Table B.11 in the Appendix, most frequently mentioned "major sources of information" for state supervisors were meetings of professional organizations and journals and other professional publications. Publishers and sales representatives were also major sources of information for many state supervisors, as were federally sponsored workshops. Several other sources of information were cited as major by 50 percent or more of the respondents in some but not all subjects; these included project authors (social studies), teachers (science and mathematics), local subject specialists (mathematics) and state department personnel (mathematics).

Table B.12 in the Appendix shows the results for respondents to the six types of district program questionnaires. As was the case with state supervisors, many of the local district personnel indicated that journals, and publishers and sales representatives were major sources of information about the selected sets of curriculum materials. Percentages specifying journals were approximately 60 percent for each group except K-6 social studies (42 percent). The percentages specifying publishers and sales representatives ranged from 47 to 69 percent, with percentages for mathematics respondents being the lowest.

Many respondents to the district program questionnaires rated teachers as a major source of information about curriculum materials; percentages ranged from 50 to 62 percent depending on subject area and grade range. College courses were also considered major sources of information by a sizable number of respondents in 5 of the groups (percentages ranged from 43 to 55 percent); 7-12 social studies questionnaire respondents were the exception (only 23 percent rated college courses major sources of information). Finally, respondents to K-6 district questionnaires were significantly more likely to indicate that principals and local in-service programs are major sources of information than were 7-12 district program questionnaire respondents in each subject.

Table B.13 in the Appendix shows the percentages of K-3, 4-6, 7-9 and 10-12 teachers who received information about a specific set of curriculum materials from each of a number of sources. The major source of information about curriculum materials for teachers is other teachers; this source was considered "major" by 57 percent of the 7-9 and 10-12 teachers, 61 percent of the 4-6 teachers, and 64 percent of the K-3 teachers. Similarly, college courses serve as a major source of information about curriculum materials for many teachers; percentages range from 43 percent of 4-6 teachers to 54 percent of 7-9 teachers. Other sources considered major by sizable numbers of teachers in each grade range included publishers and sales representatives, journals and other professional publications, and local subject specialists.

Interestingly, as is the case with district program questionnaire respondents, elementary teachers tend to rely more heavily on local sources than do secondary teachers. Approximately one-third of K-3 and 4-6 teachers indicated that principals and local in-service programs are major sources of information about the specific curriculum materials each had listed; the percentages for 7-9 and 10-12 were substantially lower (18 percent and 15 percent, respectively, for local in-service programs and 12 percent and 9 percent for principals.)

D. State Dissemination of Information About Curriculum Materials

Many state departments of education have been actively involved in the dissemination of information about federally-funded curriculum materials to educators in their states. Table B.14 in the Appendix shows the percent of states which have disseminated information about each of a number of curriculum materials. In mathematics, the most frequently disseminated materials were SMSG, Stretchers and Shrinkers/Motion Geometry, Developing Mathematical Processes (DMP), Individually Prescribed Instruction (IPI), and Unified Science and Mathematics for Elementary Schools (USMES). Of these, SMSG is the only set of mathematics materials which has been disseminated by more than half of the states.

Nineteen of the 34 science curriculum materials on the list (1 of which is a placebo project, to be discussed in more detail later) have been disseminated by 50 percent or more of the states. These included most of the elementary science materials--SCIS, ESS, SAPA, the BSCS Elementary School Science Project, COPES, and USMES. Also included in the materials disseminated by more than half of the states are the BSCS Green, Yellow and Blue Versions, as well as Patterns and Processes, CHEM Study, and both the Harvard Project Physics course and the PSSC physics materials. Finally, materials from the Individualized Science Instructional Systems, Intermediate Science Curriculum Study, Earth Science Curriculum Project, Introductory Physical Science, Outdoor Biology Instructional Strategies and the Engineering Concepts Curriculum Project have each been disseminated by more than 50 percent of the states.

Eight of the 26 legitimate curriculum materials on the social studies list have been disseminated by more than half of the states. These are American Political Behavior, the Taba Program in Social Science, the Carnegie-Mellon Social Studies Curriculum Project, Man: A Course of Study, the High School Geography Project, Our Working World, Sociological Resources for the Social Studies, and Concepts and Inquiry.

As has been mentioned, one fictitious set of curriculum materials was included in the list of materials in each subject area as a validity check. None of the states has disseminated information about the "Search for Understanding Computation" mathematics materials; 2 percent indicated they have disseminated information about "Science Explorations for the Future" while 5 percent indicated they have disseminated information about the "Social Studies Dynamics Program." Table 33 shows the percent of states which have disseminated information about none, relatively few, and many of the curriculum materials on each list. Note that only 14 percent of the states have disseminated information about more than half of the mathematics materials, compared to 36 percent in social studies and 64 percent in science.

Data about state activities in disseminating these materials are presented in Appendix Table B.15.Only the responses of state supervisors who specified the one set of materials they had spent the most time and effort disseminating were included in these analyses. One general observation is that most of the listed dissemination activities were conducted by most of the state supervisors in each subject. The most frequently used dissemination activity was discussion of the materials with instructional staff; this was done by approximately 95 percent of the science and social studies state supervisors and 84 percent of the mathematics state supervisors. Approximately 80 percent of each group supplied sample materials for consideration. Other common dissemination activities included sending a written description of the materials to instructional staff, conducting in-service meetings and arranging for consultants or sales persons to meet with instructional staff to discuss the materials.

Table 33

PERCENT OF STATES WHICH HAVE DISSEMINATED INFORMATION ABOUT VARIOUS RANGES OF SELECTED CURRICULUM MATERIALS IN EACH SUBJECT

Subject	Percent of Listed Curriculum Materials for Which Information Has Been Disseminated				
	0% 1/	1-25%	26-50%	51-75%	76-100%
Mathematics (N = 43)	25	28	32	7	7
Science (N = 49)	6	12	18	41	23
Social Studies (N = 47)	26	9	30	34	2

1/ These are the states which did not answer the question at all; typically they wrote that the state did not disseminate information about particular projects but would help educators in their state obtain information when requested to do so.

E. Superintendents' Opinions About Federal Support for Curriculum Development

Superintendents were asked to indicate if they agree or disagree with each of a number of statements about federal support for curriculum development; the results are presented in Table 34.

While 58 percent of superintendents agree that federal support for curriculum development and dissemination has improved the quality of curriculum alternatives available to schools, only 27 percent believe that these efforts have greatly improved the quality of classroom instruction. Most superintendents (66 percent) believe that continued federal support for curriculum development during the next 10 years is necessary, with 77 percent feeling that NSF should continue to help teachers learn to implement NSF-funded curricula, and 55 percent believing that the federal government should direct more attention toward disseminating the new curricula.

Table 34

SUPERINTENDENTS' OPINIONS ABOUT
FEDERAL SUPPORT FOR CURRICULUM DEVELOPMENT

Statement	Percent Agree	Percent Disagree	Percent Missing
Federal support for curriculum development and dissemination has improved the quality of curriculum alternatives available to schools	58	37	5
The national curriculum effort has greatly improved the quality of classroom instruction	27	65	8
The federal government should direct more attention toward disseminating the new curricula	55	38	7
NSF should continue to sponsor programs to help teachers learn to implement NSF-funded curricula	77	17	6
During the next 10 years, federal support for curriculum development is probably unnecessary	27	66	7
Federally-funded curriculum projects should not deal with controversial topics	34	60	6
Federal support for curriculum development and dissemination tends to create a nationally uniform curriculum	47	45	8

Sample N = 356

One frequently heard comment about federal support for curriculum development has been that it tends to create a nationally uniform curriculum. Superintendents were about equally divided on this issue with about the same percent agreeing as disagreeing. Another area of frequent disagreement is whether or not federally-funded curriculum projects should deal with controversial topics; 34 percent of superintendents believe that they should not, while 60 percent disagree, and 6 percent did not answer the question.

F. Use of Federally-funded Curriculum Materials

1. Districts

Each district program questionnaire contained a list of curriculum materials appropriate to that subject and grade range. For each of the materials, respondents were asked to indicate if (1) they have seen it, (2) it was used in the district prior to 1976-77, and (3) it was being used in the district in 1976-77. Since these response categories are clearly not mutually exclusive, respondents were instructed to circle as many as apply for each of the materials. The percentages of districts using each of the listed materials during 1976-77 and prior to 1976-77 are shown in Table B.16 in the Appendix, while the percent of district program questionnaire respondents who have seen each of these materials is shown in Appendix Table B.17.

It is interesting to note that a number of materials were used more extensively in previous years than in 1976-77, most notably SMSG in both K-6 and 7-12 mathematics, several of the BSCS materials and PSSC in 7-12 science, and Our Working World in K-6 social studies. These findings need cautious interpretation, since it is likely that many of the ideas and approaches of these materials have been incorporated into the "conventional" textbooks.

Table 35 shows the percent of respondents to each type of district program questionnaire who have seen none, from 1-25, 26-50, 51-75, and 76-100 percent of the listed curriculum materials. It is obvious that many of these respondents are not equipped to advise teachers about the attributes of the various curriculum materials. Between 32 and 39 percent of the respondents to the K-6 and 7-12 mathematics and social studies district program of questionnaires have not seen any of the listed materials. The situation is somewhat better in science, but still 27 percent of the K-6 respondents and 17 percent of the 7-12 respondents have not seen any of the listed materials.

Table 36 shows the percent of districts using none, one, and more than one of the listed curriculum materials during 1976-77 and prior to 1976-77 in K-6 and 7-12 mathematics, science, and social studies. Note that only 8 percent of the districts are currently using one or more of the K-6 mathematics materials; in contrast 37 percent of the districts used 1 or more of these materials at some time in the past. Thirty-one percent of the districts are currently using one or more of the K-6 science materials and 25 percent are using at least one of the K-6 social studies materials. Mathematics in grades 7-12 shows much the same pattern as in K-6; only 9 percent of the districts are currently using one or more of the listed materials compared to 30 percent at some time in the past.

Table 35

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS WHO HAVE SEEN VARIOUS RANGES OF SELECTED CURRICULUM MATERIALS

Subject/ Grade Range	Percent of Curriculum Materials Seen				
	0	1-25	26-50	51-75	76-100
Mathematics					
K-6 (N = 327)	32	34	13	16	4
7-12 (N = 321)	36	44	10	5	4
Science					
K-6 (N = 326)	27	48	16	3	5
7-12 (N = 318)	17	30	41	8	4
Social Studies					
K-6 (N = 303)	39	48	8	3	3
7-12 (N = 298)	37	44	11	2	5

Table 36

PERCENT OF DISTRICTS USING NONE, ONE, OR MORE THAN ONE OF THE LISTED CURRICULUM MATERIALS IN EACH SUBJECT AREA/ GRADE RANGE CATEGORY

	1976-1977			Prior to 1976-77		
	0	1	More than 1	0	1	More than 1
Mathematics						
K-6 (N = 327)	92	7	1	64	29	8
7-12 (N = 321)	91	8	1	71	20	10
Science						
K-6 (N = 326)	70	24	7	73	19	7
7-12 (N = 318)	41	19	41	36	18	46
Social Studies						
K-6 (N = 303)	75	21	4	76	19	5
7-12 (N = 298)	76	9	15	73	10	18

By far the largest usage of federally-funded curriculum materials is in science in grades 7-12; 19 percent of the districts are currently using 1 of the selected materials while 41 percent are using more than one. In 7-12 social studies a relatively small number of districts (19 percent) are using only one of the materials, while 15 percent are using more than one.

2. Schools

Principals were given a list of names and code numbers for mathematics, science, social studies, and interdisciplinary curriculum materials which were developed with federal funds for use in one or more of the grades K-12.[1] Principals who indicated that one or more of these materials were used in their schools were instructed to list the code numbers of the ones used.

Table 37 shows the percent of schools in each sample grade range using at least one of the selected mathematics, science, social studies, and interdisciplinary curriculum materials. In each grade range, substantially more schools are using at least one of the science materials than are using any mathematics or social studies materials.

Table 37

PERCENT OF SCHOOLS USING AT LEAST ONE OF THE SELECTED CURRICULUM MATERIALS IN EACH SUBJECT BY SAMPLE GRADE RANGE1/

Subject	Sample Grade Range			
	K-3	4-6	7-9	10-12
Mathematics	15	16	24	15
Science	29	31	39	60
Social Studies	18	13	13	23
Interdisciplinary	1	1	3	2
Any science, math or or social studies	39	39	49	61
Sample N	317	292	298	270

1/ Schools which violated the routing pattern, i.e., said they were not using any materials and then listed one or more, were not included in these percents. However, schools which did not answer the general question and then listed one or more materials were included.

1 The list of curriculum materials is included in Appendix E.

Table B.18 in the Appendix shows principal responses to the question "Are any of the materials on that list being used in your school during the 1976-77 school year?" broken down by region, type of community, district, school size, per pupil expenditure and a number of other variables. Only principals who said yes and then listed one or more of the materials are included in the "yes" column; those who left the question blank and those who said yes but did not list any materials are included in the "Unknown/Inconsistent" column. Appendix Table B.19 lists the percentages of schools in each sample grade range which are using each of these federally-funded curriculum materials.

Schools in the Northeast are significantly more likely than schools in the South, North Central or Western regions of the country to be using one or more of the federally-funded curriculum materials. Schools in small cities and suburban areas are significantly more likely than those in urban areas to be using one of these materials, and schools in large districts are less likely than those in medium-sized school districts to be using these materials.[1] Other significant differences include: (1) Large schools are more likely than small schools to be using these materials; (2) Schools in districts with high per pupil expenditures (PPE) are more likely to use federally-funded materials than those in low and medium PPE districts; (3) Schools with a very small percentage of students who qualify for the federal free lunch program are significantly more likely to be using these materials than those with larger percentages of students from low-income families; and (4) Schools in which the principal has participated in one or more NSF-supported activities are more likely than others to be using one of the federally-funded curriculum materials.[2]

[1] As has been mentioned previously, districts in urban areas tend to be the larger districts, thus any finding involving urban districts is likely to be true for large districts as well.

[2] While it is not surprising that there is a relationship between principal attendance at NSF activities and school usage of federally-funded curriculum materials, the reader is cautioned that nothing is known about causality. The principal may participate in an NSF-sponsored activity because the school is using a particular material, or the material may be used as a direct result of the principal's participation.

3. Teachers

Each teacher was given a list of curriculum materials which are used in the subject and grade range for which that teacher was selected. Teachers were asked to choose only one category for each of the materials: "Have Never Seen," "Have Seen but Not Used," and "Have Used in Teaching". In addition, each teacher was asked to list the code number of each of the materials he or she was using during the 1976-77 school year. The results for the various curriculum materials are shown in Table B.20 in the Appendix.

Table 38 shows the percent of teachers in each subject and grade range who are using at least one of the selected curriculum materials. Note that secondary teachers are significantly more likely than K-3 or 4-6 teachers to be using federally-funded curriculum materials. Also, significantly more science teachers than mathematics or social studies teachers in each grade range are using one or more of these materials. In fact, slightly more than half of all 10-12 science teachers were using one or more of the federally-funded curriculum materials during the 1976-77 school year.

Analysis by type of science taught showed that approximately half of all biology teachers are using at least one of the BSCS materials; approximately 40 percent of physics teachers are using either the Project Physics course or PSSC physics or both; and approximately 25 percent of the chemistry teachers are using either CHEMstudy or the Chemical Bond approch or both.[1]

Table 39 shows the percent of districts, schools, and teachers using each of a number of federally-funded curriculum materials. The reader will note what appear to be discrepancies in the usage data. These discrepancies may be due in part to errors of measurement. For example, a district program questionnaire respondent may not be fully aware of all of the programs used in the district; similarly a principal may not know all of the textbooks/programs being used in the school. It is also possible that some respondents did not recognize that a given curriculum material on the list is in fact the same as a textbook/program in use. Since teachers are more apt to be familiar with the textbooks they are using, the data collected from teachers are less likely to be subject to these measurement errors.

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[1] Since the sample included a relatively small number of teachers of each type (314 biology teachers, 160 chemistry teachers and 115 physics teachers), these percentages should be regarded as only very rough estimates.

Table 38

PERCENT OF TEACHERS USING AT LEAST ONE OF THE SELECTED CURRICULUM MATERIALS IN EACH SUBJECT BY GRADE RANGE

	Subject									Total		
	Mathematics			Science			Social Studies					
	Yes	No	Missing/ Incon- sistent	Yes	No	Missing/ Incon- sistent	Yes	No	Missing/ Incon- sistent	Yes	No	Missing/ Incon- sistent
K-3 (N=838)	8	80	12	20	69	11	11	80	10	13	76	11
4-6 (N=829)	10	80	11	27	61	12	12	75	13	16	72	12
7-9 (N=1538)	10	84	6	33	61	6	12	84	4	18	77	5
10-12 (N=1624)	11	86	3	52	44	5	22	73	5	28	68	4
Sample N		1672			1679			1478			4829	

Table 39

USE OF SELECTED CURRICULUM MATERIALS

A. K-6 MATHEMATICS

Curriculum Material	Percent of Districts	Percent of Schools		Percent of Teachers	
		K-3	4-6	K-3	4-6
IMS	4	6	10	4	3
IPI	2	2	2	1	2
DMP	1	5	2	1	3

B. 7-12 MATHEMATICS

Curriculum Material	Percent of Districts	Percent of Schools		Percent of Teachers	
		7-9	10-12	7-9	10-12
IMS	2	8	2	3	1
Modern Coordinate Geometry	3	3	4	3	5
SMSG	2	2	8	7	6

Table 39 (Continued)

USE OF SELECTED CURRICULUM MATERIALS

C. K-6 SCIENCE

Curriculum Material	Percent of Districts	Percent of Schools		Percent of Teachers	
		K-3	4-6	K-3	4-6
ESS	15	10	6	5	9
SAPA	9	9	10	4	9
SCIS	9	11	13	11	12

D. 7-12 SCIENCE

Curriculum Material	Percent of Districts	Percent of Schools		Percent of Teachers	
		7-9	10-12	7-9	10-12
BSCS Green	19	10	19	3	17
BSCS Yellow	16	7	19	5	13
BSCS Blue	8	5	15	6	5
ESCP	10	4	7	10	4
IPS	25	14	16	9	7
ISCS	12	7	10	12	2
CHEM Study	15	3	11	1	7
PSSC Physics	11	3	9	1	4
Project Physics	12	3	13	2	10

Table 39 (Continued)

USE OF SELECTED CURRICULUM MATERIALS

E. K-6 SOCIAL STUDIES

Curriculum Material	Percent of Districts	Percent of Schools		Percent of Teachers	
		K-3	4-6	K-3	4-6
SRA	12	2	0	3	6
Our Working World	8	7	5	5	2
Concepts and Inquiry	2	2	1	2	2
Man: A Course of Study	3	5	4	0	2
Taba	2	4	3	1	1

F. 7-12 SOCIAL STUDIES

Curriculum Material	Percent of Districts	Percent of Schools		Percent of Teachers	
		7-9	10-12	7-9	10-12
American Political Behavior	12	3	5	3	7
Carnegie Mellon	10	1	5	2	4
SRSS	7	2	8	1	6

It should be noted, however, that these apparent discrepancies may be perfectly reasonable. For example, a material used by only 2 percent of the districts may be used by a very small percent of the schools if typically only 1 school in each district uses it or by a larger percent of the schools if most schools in these districts make use of it.

Chapter 5

Use of Textbooks/Programs in Science, Mathematics, and Social Studies Classes

A. Overview

Each teacher was asked if he or she was using one or more published textbooks or programs in a randomly selected class. Those who indicated they were using these materials were then requested to answer a series of questions about the textbooks or programs used in this class. In addition, principals, superintendents and district program questionnaire respondents were asked about the involvement of various individuals and groups in selecting the textbooks to be used. The results of the analyses based on these questions are presented in the following sections.

B. Textbook Usage

Each teacher who indicated that one or more textbooks/programs were used in the selected class was asked to specify the textbooks or programs as well as the copyright date of each. To simplify the task, teachers were given a list of commonly used textbooks/programs in the particular subject and grade range of the class (see Appendix E). If the textbooks or programs appeared on the list the teachers need only write in the code numbers and specify the copyright date of each. For books not on the list, teachers were asked to write in the title, author, publisher, and copyright date.

As shown in Table 40, approximately half of all science and social studies classes and approximately two-thirds of all mathematics classes use a single published textbook/program. The percentages of classes using multiple textbooks are quite similar for the three subject areas (from 32 percent in mathematics to 36 percent in social studies). Finally, relatively few classes in any subject/grade range category do not use any published textbooks/programs with the exception of K-3 science (37 percent) and K-3 social studies (35 percent).

The most commonly used textbooks/programs in each subject/grade range category are shown in Tables 41, 42 and 43; the secondary textbooks/programs in each subject are shown by major type of class within

Table 40

PERCENT OF CLASSES USING NONE, ONE, TWO, AND THREE OR MORE TEXTBOOKS/PROGRAMS
BY SUBJECT AND BY GRADE RANGE

Number of Textbooks/Programs Used	Mathematics					Science					Social Studies				
	K-3	4-6	7-9	10-12	Total	K-3	4-6	7-9	10-12	Total	K-3	4-6	7-9	10-12	Total
None	8	4	5	5	6	37	10	6	8	18	35	9	11	11	17
One	69	51	59	72	63	46	56	48	48	49	42	53	47	45	47
Two	14	21	19	17	18	13	22	25	29	21	7	20	19	22	16
Three or More	9	24	17	7	14	5	12	21	15	12	16	19	22	22	20
Sample N	297	277	550	548	1672	287	271	535	586	1679	254	281	453	490	1478

Table 41

MOST COMMONLY USED MATHEMATICS TEXTBOOKS/PROGRAMS[1/]

K-6 Mathematics

Holt School Mathematics (Nichols)
Mathematics Around Us: Skills and Applications (Bolster)
Modern School Mathematics: Structure and Use (Duncan)
Elementary School Mathematics (Eicholz)
The Understanding Mathematics Program (Gundlach)
Investigating School Mathematics (Eicholz)

7-9 General Mathematics

Holt School Mathematics (Nichols)
Exploring Modern Mathematics (Keedy)
Modern Mathematics Through Discovery (Morton)
Mathematics Around Us: Skills and Applications (Bolster)
School Mathematics (Eicholz)
The Understanding Mathematics Program (Gundlach)

7-9 Algebra

Modern Algebra: Structure and Method (Dolciani)
Elementary Algebra (Denholm)
Modern School Mathematics: Pre-Algebra (Dolciani)

10-12 Algebra

Modern Algebra and Trigonometry: Structure and Method (Dolciani)
Modern Algebra: Structure and Method (Dolciani)

10-12 Geometry

Modern School Mathematics: Geometry (Jurgensen)
Geometry (Jurgensen)

1/ In classes which are using multiple textbooks/programs, only the one designated "used most often" was included in these analyses.

Table 42

MOST COMMONLY USED SCIENCE TEXTBOOKS/PROGRAMS 1/

K-6 Science

Concepts in Science (Brandwein)
Science: Understanding Your Environment (Mallinson)
New Laidlaw Science Program (Smith)
Today's Basic Science Series (Navarra)

7-9 General Science

Intermediate Science Curriculum Study: Probing the Natural World
Principals of Science Series (Heimler)
Modern Science Series (Blanc)

7-9 Earth Science

Focus on Earth Science (Bishop)

10-12 Biology

Modern Biology (Otto)
Biological Science: An Ecological Approach, BSCS Green
Biological Science: An Inquiry Into Life, BSCS Yellow (Moore)

10-12 Chemistry

Modern Chemistry (Metcalfe)

1/ In classes which are using multiple textbooks/programs, only the one designated "used most often" was included in these analyses.

Table 43

MOST COMMONLY USED SOCIAL STUDIES TEXTBOOKS/PROGRAMS[1/]

K-6 Social Studies

Laidlaw Social Science Program (King)
Exploring Series
Social Sciences: Concepts and Values (Brandwein)
Contemporary Social Science Curriculum (Anderson)

7-9 American History

This is America's Story (Wilder)
America: Its People and Values (Wood)

10-12 American History

Rise of the American Nation (Todd)
History of a Free People (Bragdon)

1/ In classes which are using multiple textbooks/programs, only the one designated "used most often" was included in these analyses.

each subject. Tables B.21,B.22, and B.23 in the Appendix list all of the textbooks/programs which are being used by 2 percent or more of the classes in each subject/grade range category. As is the case with Tables 41, 42, and 43, only the single textbook/ program which the teacher indicated was used most often by the students in the class was included in the analyses.

C. Copyright Dates of Textbooks/Programs

Each teacher who indicated that the class was using more than one textbook/program was asked to specify the one which was used most often by students in that class. The copyright dates of these "most often used" textbooks/programs were then examined to determine the age of the textbooks used in science, mathematics, and social studies classes.

The results of these analyses are presented in Table 44. Note that a considerable number of teachers in each subject/grade range category omitted the copyright date of the textbook/program used most often in that class.

Table 45 shows the distribution of classes which are using relatively old textbooks (copyright dates before 1971) by region, type of community, size of district, district per pupil expenditure, size of school, and percent of low income students in the school. For the most part, differences among levels of reporting variables are small. In addition, the large differences show no consistent pattern. For example, classes in small schools are more likely than others to use "old" social studies textbooks but less likely than others to use mathematics textbooks with copyright dates prior to 1971.

D. Use of Supplementary Materials

Teachers were asked if the publisher of the single textbook/program used most often by students in the selected class offered instructional materials to supplement or replace the textbook. The results are shown in Table 46. There is very little variation among science, mathematics, and social studies classes in grades 4-6, 7-9, and 10-12; between half and two-thirds of the classes in each category are using textbooks/programs which have accompanying supplementary materials. The low percentages of K-3 science and social studies classes which are using textbooks which have supplementary materials can be accounted for by the fact that approximately 35 percent of the classes in each group are not using any textbook at all. The reader should also note the large numbers of "unknowns" in many categories.

Table 44

PERCENT OF CLASSES USING TEXTBOOKS WITH COPYRIGHT DATES BEFORE 1971, 1971-73, AND 1974-77, BY SUBJECT AND GRADE RANGE[1/]

Grade Range	N	Mathematics Before 1971	Mathematics 1971 to 1973	Mathematics 1974 to 1977	Mathematics Unknown	Mathematics No Text Used	Science Before 1971	Science 1971 to 1973	Science 1974 to 1977	Science Unknown	Science No Text Used	Social Studies Before 1971	Social Studies 1971 to 1973	Social Studies 1974 to 1977	Social Studies Unknown	Social Studies No Text Used
K-3	838	8	19	43	21	8	19	13	10	21	37	29	12	7	16	35
4-6	829	21	23	38	14	4	24	24	25	18	10	36	24	19	13	9
7-9	1538	24	27	26	18	5	22	31	25	16	6	17	29	18	26	11
10-12	1624	38	27	21	9	5	28	26	18	21	8	23	31	21	14	11
Sample N		1672					1679					1478				

1/ The copyright date of the textbook designated as "used most often" in a particular class was used for these analyses.

Table 45

PERCENT OF CLASSES USING TEXTBOOKS WITH COPYRIGHT DATES BEFORE 1971 BY SUBJECT AND BY REGION, TYPE OF COMMUNITY, SIZE OF DISTRICT, PER PUPIL EXPENDITURE, PERCENT OF SCHOOL'S STUDENTS IN FREE LUNCH PROGRAM, AND SCHOOL SIZE

	Mathematics	Science	Social Studies
Nation	20	22	26
Region 1/			
Northeast	26	23	30
South	22	15	29
North Central	12	25	22
West	18	33	20
Type of Community			
Rural	16	21	24
Small City	18	24	27
Urban	23	26	26
Suburban	18	22	28
Unknown	29	12	15
Size of District			
Small	21	27	24
Medium	17	20	25
Large	22	24	22
Unknown	13	10	48
Per Pupil Expenditure			
Low	17	19	26
Medium	23	27	23
High	18	29	29
Unknown	21	13	28
Students in Free Lunch Program			
Less Than 10%	17	27	24
10-30%	18	21	23
More Than 30%	18	22	27
Unknown	24	21	28
School Size			
Small	15	24	32
Medium	18	23	24
Large	21	25	24
Unknown	26	18	21
Sample N	1672	1679	1478

1/ Refer to Appendix A for a description of these reporting variables and the sample size in each reporting group.

Table 46

PERCENT OF CLASSES IN WHICH THE TEXTBOOK/PROGRAM PUBLISHER OFFERS ONE OR MORE TYPES OF MATERIALS TO SUPPLEMENT OR REPLACE THE TEXTBOOK[1/]

		Mathematics				Science				Social Studies			
Grade Range	N	Yes	No	Unknown	No Text Used	Yes	No	Unknown	No Text Used	Yes	No	Unknown	No Text Used
K-3	838	72	7	13	8	38	5	20	37	31	11	23	35
4-6	829	67	13	16	4	53	15	22	10	63	10	18	9
7-9	1538	66	15	14	5	63	13	18	6	54	14	21	11
10-12	1624	53	25	17	5	62	18	12	8	52	15	22	11
Sample N		1672				1679				1478			

1/ Teachers were instructed to answer this question for the one textbook/program used most often by the students in that class.

These are cases where the teachers omitted a response or had inconsistent responses (such as indicating that the publisher does not supply supplementary materials and then answering questions about these materials).

Given the large numbers of teachers who apparently had difficulty with the instructions to this question, it is not possible to obtain accurate estimates of the usage of particular types of materials offered by publishers to supplement textbooks. The following discussion is intended to provide some general insights (rather than precise figures) about the usage of these materials.

The teacher manuals which accompany many elementary and secondary textbooks are the most extensively used of the listed materials. (The list included teacher manuals, student workbooks, hands-on materials, audiovisual materials or media kits, activity cards, and test materials). More than 40 percent of the teachers in each group except K-3 science and K-3 and 10-12 social studies teachers make use of teacher manuals; usage is particularly extensive in K-3 and 4-6 mathematics where two-thirds of the teachers use teacher manuals which accompany the textbooks. K-3 mathematics classes also make extensive use of student workbooks, with almost 60 percent of the classes using these. No other subject/grade category showed student workbook usage in more than a third of the classes.

Publisher-supplied test materials are used by roughly a third of all science, mathematics, and social studies classes except for K-3 science and K-3 social studies classes where such tests are used by only approximately 5 percent of the classes.

Hands-on materials which accompany textbooks are used in a substantial number of K-3 mathematics classes (36 percent) and K-3, 4-6, and 7-9 science classes (26, 31, and 26 percent, respectively). No other subject/grade range category showed usage in as many as 20 percent of the classes.

Finally, usage of activity cards and audiovisual materials that accompany student textbooks is fairly low, with no more than 25 percent of the classes in any subject/grade category making use of either if these types of materials.

E. Involvement in Textbook Selection

Principals, superintendents, and respondents to the district program questionnaires were quite similar in their perceptions about the textbook selection progress.[1] As Tables B.24, B.25, and B.26 in the Appendix indicate, all three groups agree that students, parents and school board members have rather low involvement in textbook selection; fewer than 5 percent of the schools and districts indicated that any one of these groups is heavily involved. Forty-seven percent of the schools and between 56 and 65 percent of the districts (depending on the type of district personnel responding--e.g., superintendent, K-6 mathematics program questionnaire respondent, etc.) reported that school board members are not involved in textbook selection. For parents, non-involvement in textbook selection included 55 percent of the schools and between 58 and 69 percent of the districts; the comparable figures for students are 61 percent of the schools and between 53 and 71 percent of the districts.

About half of the principals indicated that they themselves are heavily involved in the textbook selection process in their schools, while only 2 percent are not involved. In addition, about half of the superintendents indicated that principals are heavily involved in district textbook selection. District program questionnaire respondents' perceptions varied somewhat with grade range; those who had been designated to answer questions about district K-6 programs were significantly more likely to indicate that principals are heavily involved (from 43 to 50 percent) than were the 7-12 respondents (from 20 to 29 percent) even though all groups were asked about the textbook selection process in the district as a whole, not just in a specific grade range.

District-wide supervisors are heavily involved in textbook selection in 34 percent of the schools and from 23 to 32 percent of the districts (again, depending on the source of the information); they are somewhat involved in 22 percent of the schools and from 12 to 22 percent of the districts. The large percentages of "don't know" and missing responses (and perhaps also the many "not involved" responses) are likely due to the fact that many districts have no district-wide supervisors.

Perceptions of the involvement of superintendents or assistant superintendents were quite similar, with 15 percent of the schools and approximately 20 percent of the districts indicating that these persons are heavily involved in textbook selection.

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1 Principals were asked about the textbook selection process in their schools; superintendents and district program questionnaire respondents were asked about textbook selection in their districts.

All groups queried indicated that teacher committees and individual teachers are the groups most heavily involved in the textbook selection process. Only 3 percent of the schools and from 0 to 2 percent of the districts (again depending on the source) indicated that individual teachers are not involved in textbook selection, while 63 percent of the schools and between 54 and 73 percent of the districts indicated that individual teachers are heavily involved. Many schools and districts appear to have teacher committees which have considerable input into the textbook selection process; only 3 percent of the schools and from 0 to 14 percent of the districts indicated that teacher committees were not involved. These results seem to conflict with those of a recent study of the use of instructional materials.[1] Approximately 45 percent of responding teachers in that survey said they had no role in selecting the instructional materials they were using.

While teachers in this survey were not asked about their involvement in textbook selection, we do know that many teachers are satisfied with the textbooks/programs they are using. As shown in Table 47 when asked to indicate the textbook/program they would use for teaching that particular class if given free choice, 63 percent of the mathematics teachers and slightly more than half of the science and social studies teachers indicated they would choose the one they are currently using. Approximately one-fourth of each group would choose another textbook/program, and the remaining teachers did not indicate their preferences.

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[1] EPIE Report: No. 76, Report on a National Study of the Nature and the Quality of Instructional Materials Most Used by Teachers and Learners, EPIE Institute, New York, 1977.

Table 47

TEACHERS' PREFERENCES FOR TEXTBOOK/PROGRAM BY SUBJECT AND GRADE RANGE
(Percent of Classes)

Textbook/Program Preferred	Mathematics K-3	Mathematics 4-6	Mathematics 7-9	Mathematics 10-12	Total	Science K-3	Science 4-6	Science 7-9	Science 10-12	Total	Social Studies K-3	Social Studies 4-6	Social Studies 7-9	Social Studies 10-12	Total
Current One	57	63	65	73	63	43	46	63	62	52	48	51	55	60	53
One used previously	8	5	5	7	6	2	11	11	8	8	5	10	5	5	6
Other	19	18	20	15	19	22	25	17	19	21	21	25	21	23	22
Missing	16	14	10	5	12	32	17	9	11	19	27	15	20	12	19
Sample N	297	277	550	548	1672	287	271	535	586	1679	254	281	453	490	1478

Chapter 6

Instructional Techniques and Classroom Activities

A. Overview

Each teacher was asked a series of questions about instruction in a single, randomly selected science, mathematics, or social studies class. One question dealt with the frequency of use of each a number of teaching techniques, including lecture, discussion, individual assignments, and field trips, while a second question asked about the availability and use of each of a number of audio-visual materials. In addition, each teacher was given a list of materials appropriate to the particular subject area (such as microscopes in science, geometric tools in mathematics, and copies of original documents in social studies), and asked to indicate the availability and use of each material. A final section of the teacher questionnaire focused on a single lesson--the most recent one in that class--and asked about the instructional arrangements and activities used in that lesson. The data collected using these questions are reported in the following sections.

B. Teaching Techniques

The frequency of use of each of a number of teaching techniques in science, mathematics, and social studies classes are reported in Table 48. These results broken down by grade range (K-3, 4-6, 7-9, and 10-12) within each subject are presented in Appendix Table B.27.

1. Lecture

Lectures are used quite frequently in science, mathematics, and social studies classes. Almost half of all mathematics classes have lectures "just about daily", while another one fifth have lectures at least once a week. Similarly, approximately two-thirds of science and social studies classes have lectures once a week or more; for approximately 25 percent of the classes in each subject the occurrence is just about daily. Considering the predominance of the lecture method in many classes, it is interesting to note that lectures are never used in some science, mathematics, and social studies classes (16, 23, and 13 percent, respectively). However, an examination of Table B.27 in the Appendix shows that the vast majority of these are elementary classes.

Table 48
FREQUENCY OF USE OF VARIOUS TECHNIQUES

A. MATHEMATICS CLASSES

Technique	Percent of Classes					
	Never	Less than once a month.	At least once a month	At least once a week	Just about daily	Missing
Lecture	23	4	3	21	46	4
Discussion	5	2	3	16	71	2
Student reports or projects	46	28	15	5	4	4
Library work	74	16	2	4	1	4
Students working at chalkboard	5	8	13	36	36	2
Individual assignments	9	7	5	17	59	3
Students use hands-on manipulative or laboratory materials	19	23	16	24	14	4
Televised instruction	87	5	2	4	0	2
Programmed instruction	75	7	6	3	4	5
Computer-assisted instruction	91	3	2	2	1	2
Tests or quizzes	5	5	26	56	6	2
Contracts	78	7	5	3	4	3
Simulations (role-play, debates, panels)	81	8	5	4	1	2
Field trips, excursions	78	19	1	0	0	2
Guest speakers	86	10	1	0	0	2
Teacher demonstrations	11	9	12	28	36	4

Table 48 (Continued)
FREQUENCY OF USE OF VARIOUS TECHNIQUES

B. SCIENCE CLASSES

Technique	Percent of Classes					
	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
Lecture	16	5	10	37	26	6
Discussion	1	2	6	35	50	6
Student reports or projects	15	30	30	14	6	6
Library work	29	35	20	10	1	6
Students working at chalkboard	36	28	17	11	2	7
Individual assignments	18	19	20	21	15	8
Students use hands-on manipulative or laboratory materials	9	14	21	35	13	8
Televised instruction	69	13	5	6	0	6
Programmed instruction	71	12	4	2	2	8
Computer-assisted instruction	90	2	0	0	0	8
Tests or quizzes	18	10	30	34	3	7
Contracts	78	8	2	3	1	8
Simulations (role-play, debates, panels)	61	21	7	3	0	8
Field trips, excursions	31	55	7	0	0	7
Guest speakers	54	37	2	1	0	7
Teacher demonstrations	4	17	35	30	8	6

Table 48 (Continued)
FREQUENCY OF USE OF VARIOUS TECHNIQUES

C. SOCIAL STUDIES CLASSES

Technique	Percent of Classes					
	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
Lecture	13	9	11	40	24	5
Discussion	0	1	4	30	61	4
Student reports or projects	9	27	37	21	3	4
Library work	18	31	28	18	2	4
Students working at chalkboard	47	28	11	7	3	5
Individual assignments	12	18	21	27	19	4
Students use hands-on manipulative or laboratory materials	34	24	14	18	6	5
Televised instruction	64	17	7	8	1	4
Programmed instruction	66	12	6	8	2	6
Computer-assisted instruction	93	3	0	1	0	3
Tests or quizzes	13	8	31	42	2	4
Contracts	71	14	6	2	2	6
Simulations (role-play, debates, panels)	22	39	28	6	1	4
Field trips, excursions	35	52	8	1	0	4
Guest speakers	43	48	5	1	0	4
Brainstorming	35	28	20	10	2	6

Teachers were also asked to indicate if lecture was used in their most recent lesson and approximately 70 percent of the teachers of each subject answered affirmatively. As shown in Table 49, the percentages using lecture increased with grade level in each subject.

2. Discussion

Class discussions occur on a daily basis in 50 percent of science classes, 61 percent of social studies classes, and 71 percent of mathematics classes. The majority of the remaining classes in each subject have discussions at least once a week. As can be seen in Appendix Table B.27, there is very little variation in the frequency of use of discussion among grade levels within each subject. Between 85 and 90 percent of the classes in each subject had discussions in their "most recent" lesson, and again, there was very little difference among grade levels.

3. Student Reports or Projects

Student reports and projects are infrequently used in mathematics classes at all grade levels; 46 percent of the classes never use these, and 28 percent use them less than once a month. Student reports and projects are significantly more common in science and social studies classes, with only 15 percent and 9 percent, respectively, never using them and more than 50 percent of the classes using them at least once a month.

4. Library Work

Library work is fairly common in social studies and science classes but quite rare in mathematics classes. Seventy-four percent of all mathematics classes never use library work, compared to 29 percent of science classes and 18 percent of social studies classes. Not surprisingly, K-3 classes in each subject are less likely than others to do library work.

5. Students Working at Chalkboard

Significantly more mathematics classes than science or social studies classes have students working at the chalkboard; a total of 72 percent of the classes have chalkboard work at least once a week, with half of them using this technique on a daily basis. Forty-seven percent of social studies classes and 36 percent of science classes never have students working at the chalkboard; and many of the remaining classes use this technique less than once a month.

Table 49

PERCENT OF CLASSES PARTICIPATING IN VARIOUS ACTIVITIES IN MOST RECENT LESSON, BY SUBJECT AND GRADE RANGE

A. MATHEMATICS

Activity	K-3 Yes	K-3 No	K-3 Missing	4-6 Yes	4-6 No	4-6 Missing	7-9 Yes	7-9 No	7-9 Missing	10-12 Yes	10-12 No	10-12 Missing	Total Yes	Total No	Total Missing
Lecture	58	32	9	68	23	8	83	13	4	89	8	3	72	22	7
Discussion	88	10	2	89	5	6	83	11	6	91	6	4	87	9	4
Use of manipulatives	58	38	4	38	52	11	23	65	12	24	67	10	39	53	9
Sample N	297			277			550			548			1672		

B. SCIENCE

Activity	K-3 Yes	K-3 No	K-3 Missing	4-6 Yes	4-6 No	4-6 Missing	7-9 Yes	7-9 No	7-9 Missing	10-12 Yes	10-12 No	10-12 Missing	Total Yes	Total No	Total Missing
Lecture	60	18	22	69	20	11	72	22	6	76	12	12	68	19	14
Discussion	87	1	12	90	4	6	82	12	6	77	10	13	85	6	9
Use of manipulatives	67	18	16	54	33	13	59	36	5	53	36	11	59	29	12
Sample N	287			271			535			586			1679		

C. SOCIAL STUDIES

Activity	K-3 Yes	K-3 No	K-3 Missing	4-6 Yes	4-6 No	4-6 Missing	7-9 Yes	7-9 No	7-9 Missing	10-12 Yes	10-12 No	10-12 Missing	Total Yes	Total No	Total Missing
Lecture	58	24	18	67	22	11	74	15	11	77	17	6	68	20	12
Discussion	91	2	7	88	7	5	90	6	5	91	6	3	90	5	5
Use of manipulatives	49	36	16	52	31	18	40	43	17	28	54	18	43	41	17
Sample N	254			281			453			490			1478		

6. <u>Individual Assignments</u>

Individual assignments are especially common in mathematics classes, with 59 percent of the classes using these just about daily compared to 19 percent of social studies classes and 15 percent of science classes. There is very little variation among grade levels in mathematics; in science and social studies individual assignments are used significantly less often in grades K-3.

7. <u>Students Use Hands-On, Manipulative, or Laboratory Materials</u>

Hands-on experiences are relatively infrequent in social studies classes; 34 percent of the classes never have the students working with manipulative materials, while another 24 percent do so less than once a month. Only 6 percent of the classes use manipulatives daily. Many mathematics classes make use of hands-on materials, with 14 percent doing so on a daily basis and another 24 percent using manipulatives at least once a week; only 19 percent of the mathematics classes never use manipulatives.

However, the use of manipulatives is significantly more common in science classes than in mathematics or social studies classes, with 48 percent of the science classes using them once a week or more often, and only 9 percent never having hands-on experiences.[1]

Thirty-nine percent of the mathematics classes used manipulative materials in their "most recent" lesson, with the percentage being much higher at K-3 (58 percent) and lower at 7-9 and 10-12 (approximately 25 percent). Forty-three percent of the social studies classes used manipulatives in their most recent lesson, and as in the case of mathematics, manipulatives usage was more common in the lower grades. Finally 59 percent of the science classes used manipulatives in their most recent lesson, with K-3 usage being the largest.

As shown in Table 50, science teachers who have attended one or more NSF-sponsored activities are considerably more likely than other teachers to use manipulative materials at least once a week. Mathematics and social studies teachers who have and have not participated in NSF activities are not markedly different in their use of manipulatives.

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[1] Although this is a relatively small percent compared to mathematics and social studies classes, science educators may be concerned that even as many as 9 percent of the science classes never use manipulatives and another 14 percent do so less than once a month.

Table 50

FREQUENCY OF USE OF MANIPULATIVE MATERIALS
BY SUBJECT AND TEACHER ATTENDANCE AT ONE OR MORE NSF INSTITUTES

	Less Than Once a Month	At Least Once a Month	At Least Once a Week	Missing
Mathematics				
Attended (N = 388)	48	17	30	6
Did Not Attend (N =1165)	41	16	40	4
Science				
Attended (N = 514)	8	16	73	3
Did Not Attend (N = 1054)	27	24	42	7
Social Studies				
Attended (N = 89)	61	14	24	2
Did Not Attend (N = 1299)	58	14	24	5

8. Televised Instruction

Most science, mathematics, and social studies classes do not make use of televised instruction (the figures for "never use" are 69 percent, 87 percent, and 64 percent, respectively), while those that do use televised instruction do so only infrequently. There is very little variation among grade levels in any of the three subject areas.

9. Programmed Instruction

Programmed instruction is not often used in science, mathematics, or social studies classes. Only between 20 and 28 percent of the classes in these subject areas ever use programmed instruction. However, 16 percent of social studies classes, 13 percent of mathematics classes, and 8 percent of science classes make use of programmed instruction at least once a week.

10. Computer-Assisted Instruction

Computer-assisted instruction is still quite rare in schools in the United States. More than 90 percent of the classes in each of the 3 subject areas never use this technique. Use of computer assisted instruction is more common in the higher grades than in the lower grades in both mathematics (10 percent of 7-9 classes, and 13 percent of 10-12 classes) and science (9 percent of 10-12 classes).

11. Tests or Quizzes

Except for K-3 classes, the vast majority of science, mathematics, and social studies classes use tests or quizzes. They are particularly frequent in mathematics, where 62 percent of the classes have tests or quizzes once a week or more often, compared to 44 percent in social studies and 37 percent in science.

12. Contracts

More than 70 percent of the classes in each of the 3 subject areas do not make use of contracts. The only subject/grade range category which has more than minimal use of contracts is 4-6 mathematics, where 38 percent of the classes use contracts and almost half of these use them once a week or more.

13. Simulations

Simulations were defined as including role-play, debates, and panels. These techniques are significantly more common in social studies classes than in science or mathematics classes, with only 22 percent of all social studies classes never using simulation activities. In contrast, 61 percent of science classes and 81 percent of math classes never use simulations.

14. Field Trips and Excursions

Field trips and excursions are fairly common in science and social studies (used in 62 percent and 61 percent of the classes, respectively) but quite uncommon in mathematics where only 20 percent of the classes ever make use of these.

15. Guest Speakers

The use of guest speakers is fairly common in social studies and science but quite rare in mathematics classes. Fifty-four percent of social studies classes, 40 percent of science classes, and 11 percent of mathematics classes have guest speakers visit their classes.

16. Teacher Demonstrations

Science and mathematics teachers were asked about the frequency of use of teacher demonstrations. Only 4 percent of the science classes and 11 percent of the mathematics classes never have teacher demonstrations. Mathematics classes are significantly more likely than science classes to have teacher demonstrations on a frequent basis; nearly two-thirds of mathematics classes use demonstrations once a week or more compared to 38 percent of science classes.

17. Brainstorming

Social studies teachers indicated the frequency with which this technique is used in their classes. While thirty-five percent never use brainstorming, more than 30 percent of the social studies classes use brainstorming once a month or more.

C. Instructional Arrangements

Each teacher was asked to indicate the number of minutes spent in each of three instructional arrangements during the most recent lesson in the sample class. Their responses were then converted to the percent of the lesson spent in each arrangement; the results are presented by subject and grade range in Table 51.

In each subject/grade range category, a large proportion of the lesson is spent having the teacher work with the entire class as a group (for example in a lecture or test situation). The percent of time spent in this arrangement was generally higher for social studies classes (57 percent of the time on the average compared to 51 percent for science classes and 43 percent for mathematics classes). Conversely, mathematics classes spend more time having the teacher working with small groups of students (23 percent of the time on the average, compared to 18 percent for science classes and 13 percent for social studies classes). The proportion of time spent having the teacher supervise students working on individual activities is quite similar in the three subject areas (30 percent of the time in social studies classes, 31 percent in science classes, and 34 percent of the time in mathematics classes).

Table 51

AVERAGE PERCENT OF TIME SPENT IN VARIOUS INSTRUCTIONAL ARRANGEMENTS BY SUBJECT AND GRADE RANGE[1/]

Instructional Arrangement	Mathematics					Science					Social Studies				
	K-3	4-6	7-9	10-12	Total	K-3	4-6	7-9	10-12	Total	K-3	4-6	7-9	10-12	Total
Entire Class as Group	36	38	45	54	43	52	52	49	52	51	59	50	51	68	57
Small Groups	29	25	17	22	23	18	18	16	19	18	15	15	14	11	13
Students working individually	36	38	38	24	34	30	30	35	30	31	26	35	35	21	30
Sample N	293	271	545	539	1648	272	262	525	576	1635	238	271	446	483	1438

D. Use of Audio-Visual Materials

Teachers were asked to indicate the frequency with which each of a number of audio-visual materials are used in their classes. For those materials which are not used, teachers were asked to rate each as "not needed" or "needed but not available". The results for all mathematics, science, and social studies classes are presented in Table 52. These same results are shown broken down by grade range within each subject in Appendix Table B.28.

1. Films

Films are used much more frequently in science and social studies classes than in mathematics classes. Only 40 percent of mathematics classes ever use films, and the majority of these classes use films less than once a month. Interestingly, 21 percent of the mathematics classes would use appropriate films if they were available. By contrast, approximately 80 percent of science and social studies classes use films, with 23 percent in social studies and 16 percent in science using films at least once a week.

2. Filmstrips

As in the case of films, filmstrips are more frequently used in teaching science and social studies than in teaching mathematics. Eighty-eight percent of social studies classes use filmstrips, with 20 percent of the classes doing so at least once a week; and 80 percent of science classes use filmstrips, with 13 percent using them once a week or more. By contrast, only 47 percent of math classes ever use filmstrips and only 2 percent do so at least once a week. Again, a sizable number of mathematics classes (17 percent) need filmstrips but do not have them available.

3. Film Loops

Thirteen percent of mathematics classes, 23 percent of social studies classes, and 28 percent of science classes make use of film loops. Another approximately 20 percent in each subject would use film loops if they were available.

4. Tapes

The use of tapes is most common in social studies classes (58 percent) and least common in mathematics classes (27 percent). In addition, teachers of between 14 and 18 percent of the classes in each subject indicated that tapes are needed but not available.

Table 52

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS

A. MATHEMATICS CLASSES

Audiovisual Materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	37	21	32	7	1	2
Filmstrips	35	17	36	9	2	2
Film loops	61	21	12	1	0	4
Tapes	53	18	17	6	4	2
Slides	65	20	10	2	1	3
Records	54	18	17	6	4	2
Overhead projectors	26	6	27	16	22	2
Standard TV	74	11	6	2	4	3
Closed circuit TV	78	13	5	1	1	3
Videotape recorder/player	71	12	10	2	2	3

Sample N = 1672

Table 52 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS

B. SCIENCE CLASSES

Audiovisual Materials	Percent of Classes					* Missing
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	
Films	5	9	24	39	16	6
Filmstrips	8	8	32	35	13	5
Film loops	38	22	20	7	1	12
Tapes	40	14	23	10	4	8
Slides	32	20	31	8	2	9
Records	42	15	24	10	3	7
Overhead projectors	19	4	33	21	17	7
Standard TV	60	12	12	5	4	7
Closed circuit TV	64	17	8	3	1	8
Videotape recorder/player	54	16	14	7	3	7

Sample N = 1679

Table 52 (Continued)
FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS
C. SOCIAL STUDIES CLASSES

Audiovisual Materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	3	12	25	34	23	3
Filmstrips	3	6	24	44	20	3
Film loops	48	19	12	7	4	9
Tapes	23	16	32	20	6	4
Slides	25	21	37	11	1	5
Records	17	14	42	18	5	5
Overhead projectors	19	5	32	27	14	4
Standard TV	51	14	19	5	5	5
Closed circuit TV	62	20	8	3	2	6
Videotape recorder/player	46	16	22	8	3	5

Sample N = 1478

5. Slides

Slides are more frequently used in social studies and science classes than in mathematics classes. Only 13 percent of mathematics classes use slides, compared to 41 percent of science classes and 49 percent of social studies classes. In addition, approximately 20 percent of each group would use slides if they were available.

6. Records

Sixty-five percent of social studies classes, 37 percent of science classes and 27 percent of mathematics classes make use of records; another 14 to 18 percent of each group would use records if they were available.

7. Overhead Projectors

Overhead projectors are heavily used in all 3 subject areas. Seventy-three percent of social studies classes, seventy-one percent of science classes, and sixty-five percent of mathematics classes use overhead projectors. The supply of overhead projectors appears to be adequate; only between 4 and 6 percent of the classes in each subject area need overhead projectors but do not have them available.

8. Television

The majority of science, mathematics, and social studies classes need neither standard TV nor closed circuit TV. In addition, most of the classes which use TV do so infrequently. Only 6 percent of mathematics classes, 9 percent of science classes, and 10 percent of social studies classes use standard TV as often as once a month. The percentages for closed circuit TV are even lower (2 percent in mathematics, 4 percent in science, and 5 percent in social studies).

9. Videotape Recorder/Player

Thirty-three percent of social studies classes, 24 percent of science classes, and 14 percent of mathematics classes make use of videotape recorder/players. However, in the majority of these cases, the use is quite infrequent (less than once a month).

E. Use of Specific Materials and Equipment

1. Mathematics Classes

Each sample mathematics teacher was given a list of 8 types of mathematics-related materials and equipment and asked to indicate the frequency of use of each; ones which were not used were to be rated either "not needed" or "needed but not available". Teacher responses are shown in Appendix Table B.29.

The results showed that games and puzzles are very frequently used in mathematics classes, especially in the lower grades. Fifty-eight percent of K-3 mathematics classes use games and puzzles very often (more than 50 days), while another 25 percent use them between 10 and 50 days. Use of games and puzzles decreases in frequency with increasing grade level; a total of 58 percent of 4-6 mathematics classes and 45 percent of 7-9 mathematics classes use them 10 or more days, while only 12 percent of 10-12 mathematics classes use games and puzzles 10 or more days.

Activity cards or kits, and numeration and place value manipulatives such as rods or blocks are frequently used in elementary mathematics classes. At K-3, each of these types of materials is used at least 10 days by 57 percent of the classes; at 4-6, activity cards are used 10 days or more by 52 percent of the classes and numeration and place value manipulatives by 36 percent of the classes. By 7-9, frequent usage (10 or more days) has dropped to 33 percent for activity cards and 24 percent for numeration and place value manipulatives, while fewer than 5 percent of the 10-12 mathematics classes use either of these types of materials that frequently.

Metric measurement tools such as metric rulers, containers, and weights are not frequently used in the lower grades. While 58 percent of K-3 mathematics classes use metric measurement tools, 23 percent do so less than 10 days. Interestingly, the majority of the teachers who do not use metric measurement tools indicate they would do so if these materials were available. The frequency of the use of metric measurement tools in 4-6 and 7-9 mathematics classes is quite similar to that in K-3 classes, with a total of 57 percent and 61 percent, respectively, using these materials to some degree and many of the remaining teachers indicating that these materials are needed. However, the pattern for 10-12 mathematics classes is significantly different from that in the other grades. Fewer than 30 percent of these classes use metric measurement tools at all, and only 9 percent indicate they are needed but not available; according to their teachers, 61 percent of 10-12 mathematics classes do not need metric measurement tools at all.

Mathematics and science teachers were also asked about the way concepts related to the metric system are used in the selected class. The results, presented in Table 53, show different patterns of use for science and mathematics. In science classes, use increases with grade level, with classes not using metric concepts at all decreasing from 42 percent in grades K-3 to only 7 percent in grades 10-12. By contrast, 43 percent of the 10-12 mathematics classes do not use metric concepts. In addition, mathematics classes are more likely than science classes to use metric concepts only in a special unit, while science classes are more likely to introduce the concepts in a special unit and then use them throughout the course.

At each grade level, nonmetric measurement tools are used more frequently than metric measurement tools. Again, many of the 10-12 mathematics classes (48 percent) indicate that such materials are not needed.

Geometric tools are used by half of the K-3 mathematics classes, 62 percent of the 4-6 classes, 64 percent of the 7-9 classes, and 49 percent of the 10-12 mathematics classes. However, in many classes these materials are used only infrequently; fewer than 10 percent of the mathematics classes in any of the 4 grade ranges reported using geometric tools 50 days or more. The availability of such materials is not a problem in grades 7-9 or 10-12, but in approximately 20 percent of the K-3 and 4-6 mathematics classes geometric tools are needed but not available.

Finally, hand-held calculators and computers or computer terminals are not frequently used in mathematics classes. However, in each case usage is significantly greater in grades 7-12 than in grades K-6. These results are discussed in more detail in Chapter 7--Science, Mathematics, and Social Studies Facilities, Equipment, and Supplies.

2. Science Classes

As can be seen in Appendix Table B.30, meter sticks and rulers, and balances and scales are the most frequently used equipment in 7-9 and 10-12 science classes. Approximately 60 percent of the science classes at each of these grade levels use meter sticks and rulers at least 10 days, with 20 percent of the classes using them 50 days or more. Usage of meter sticks and rulers is significantly lower in K-3 and 4-6 (44 percent and 48 percent, respectively, using these materials 10 days or more). Balances and scales are used 10 days or more by 57 percent of the 10-12 science classes, 49 percent of the 7-9 science classes, and approximately 25 percent of K-3 and 4-6 science classes.

Table 53

PERCENT OF MATH AND SCIENCE CLASSES WHICH TREAT METRIC CONCEPTS IN EACH OF A NUMBER OF WAYS, BY SUBJECT AND GRADE RANGE

	Mathematics					Science				
Use of Metric Concepts	K-3	4-6	7-9	10-12	Total	K-3	4-6	7-9	10-12	Total
Not Used	26	13	20	43	24	42	31	10	7	26
Special Metric Unit Only	42	43	34	7	35	22	19	13	8	17
Special Metric Unit and Used Throughout Course	8	22	22	5	15	13	20	40	44	27
Introduced as Needed	22	19	23	44	25	14	26	36	38	26
Missing	2	3	1	1	2	9	4	1	3	5
Sample N	297	277	550	548	1672	287	271	535	586	1679

Except for K-3 classes, microscopes are frequently used in science classes; 24 percent of the classes in grades 4-6, 37 percent in grades 7-9, and 50 percent in grades 10-12 use microscopes at least 10 days, with the percentage using them more than 50 days being the highest in 10-12 classes.

Living plants and animals are among the most frequently used "materials" in K-3 and 4-6 science classes. In grades K-3, 67 percent of the science classes use living plants 10 days or more and 41 percent work with living animals 10 days or more; approximately half of each group uses these types of organisms 50 days or more. Use of living plants is significantly less frequent in 4-6 science classes (56 percent use plants at least 10 days) and use of animals is at approximately the same level as in K-3 classes. Use of living plants and animals is significantly lower in 7-9 science classes (37 percent use living plants and 26 percent use living animals 10 days or more). Finally, the use of living plants in 10-12 science classes is minimal; only 6 percent of the classes use them 10 days or more. However, the use of living animals in 10-12 classes is substantial (28 percent use them 10 days or more).

Several types of materials are frequently used by only a very small percentage of 10-12 science classes. These include rocks, magnets, and games and puzzles. In each case, fewer than 10 percent of the classes use the materials 10 days or more. The use of these materials is significantly more frequent in science classes at the lower grades, with approximately 35 percent of the K-3, 4-6, and 7-9 classes using rocks 10 days or more, between 23 and 33 percent using magnets 10 days or more, and between 21 and 33 percent using games and puzzles that frequently.

Magnifying glasses are used fairly often in science classes at each grade range; percentages of classes using them 10 days or more range from 28 percent at 10-12 to 38 percent at K-3. Batteries and bulbs find their greatest use in 7-9 science classes, with 36 percent of the classes using them 10 days or more, compared to 23 percent of 4-6 and 10-12 classes and 14 percent of K-3 classes.

Finally, as will be discussed further in the chapter on facilities, equipment, and supplies (Chapter 7), cameras are used only infrequently in science classes at each grade level, while scientific models are used quite frequently, with use increasing with grade level.

3. Social Studies Classes

Data about use of various materials in social studies classes are presented in Appendix Table B.31. Of the listed materials, maps, charts, and globes are the most frequently used. Percentages of classes using them 10 days or more are 64 percent in K-3, 85 percent in 4-6, 86 percent in 7-9, and 61 percent in 10-12. Frequency of use of maps, charts, and globes is especially great in 4-6 social studies classes, with 56 percent of the classes using these materials more than 50 days.

Reference books are also used frequently in many social studies classes; 50 percent at K-3, 77 percent at 4-6, 86 percent at 7-9, and 66 percent at 10-12 use reference books 10 days or more. Again, the 4-6 grade range has the largest proportion of "very frequent" use, with 50 percent of the classes using reference books more than 50 days.

Approximately 60 percent of the K-3, 4-6, and 7-9 social studies classes use photographs or posters 10 days or more, with approximately half of each group using these materials very frequently (more than 50 days). Frequency of use of photographs and posters is considerably lower in grades 10-12; only 38 percent of the 10-12 social studies classes use these materials as many as 10 days.

With the exception of K-3, paperbacks are frequently used in social studies classes; between 44 and 49 percent of the 4-6, 7-9, and 10-12 classes use paperbacks 10 days or more. Similarly, copies of original documents are rarely used in K-3 social studies classes, but used 10 days or more in a considerable number of 4-6, 7-9, and 10-12 classes (23, 33, and 23 percent, respectively).

Artifacts and models are used 10 days or more by between 25 percent and 33 percent of K-3, 4-6, and 7-9 social studies classes. In contrast, only 9 percent of 10-12 social studies classes use these materials as many as 10 days.

Chapter 7

Science, Mathematics, and Social Studies Facilities, Equipment, and Supplies

A. Overview

Information about facilities, equipment, and supplies was collected from a number of sources. Superintendents provided data about per pupil expenditure in the district; they also indicated if the district has received funds for science, mathematics, and social studies facilities, equipment, and supplies from each of a number of funding sources. Principals indicated if their schools had specific budgets for science equipment and for science supplies and, if so, the amounts of these budgets. In addition, principals indicated if their schools had each of a number of kinds of equipment, and teachers provided information about the frequency of use of each of these. Finally, teachers rated aspects of the adequacy of facilities, equipment, and supplies. The results of these analyses are presented in the following sections.

B. District Expenditures

The average per pupil expenditure in school districts across the nation is $1,246. As shown in Table 54, districts in the South tend to have lower than average per pupil expenditures, while expenditures in the West and Northeast exceed the national average. Differences by type of community are not as substantial, but expenditures in suburban districts are significantly larger than in other types of communities. Finally, average per pupil expenditures in the three size-of-district categories are quite similar.

Table 55 shows the percent of districts which received funds for science, mathematics, and social studies instruction from each of a number of different funding sources in the 1975-76 school year. A sizable number of districts received funds from the National Defense Education Act (NDEA), with 36 percent of the districts receiving such funds for facilities, equipment, and supplies used in science instruction, 26 percent for mathematics, and 12 percent for social studies. The Elementary and Secondary Education Act (ESEA) also provided funds for these subject areas to a large number of

Table 54

AVERAGE PER PUPIL EXPENDITURE,
BY REGION, TYPE OF COMMUNITY, AND SIZE OF DISTRICT

	N[1/]	Average Per Pupil Expenditure Amount	Standard Error
Nation	332	$ 1,246	$ 31
Region[2/]			
Northeast	76	1,381	18
South	80	1,056	100
North Central	92	1,284	33
West	84	1,394	12
Type of Community			
Rural	71	1,272	41
Small City	81	1,192	27
Urban	80	1,229	15
Suburban	85	1,335	16
Unknown	15	1,028	55
Size of District			
Small	122	1,271	41
Medium	107	1,188	12
Large	101	1,288	12
Unknown	2	844	0

1/ Twenty-four superintendents did not provide per pupil expenditure information.

2/ Refer to Appendix A for a description of these reporting variables.

Table 55

PERCENT OF DISTRICTS RECEIVING FUNDS
FROM SELECTED SOURCES FOR SCIENCE, MATHEMATICS
AND SOCIAL STUDIES INSTRUCTION

Funding Source	Science	Mathematics	Social Studies
National Defense Education Act (NDEA)	36	26	12
Elementary & Secondary Education Act (ESEA Titles I-VIII)	24	52	19
Other Government Grants	2	3	4
Specific State Grants	4	5	3
Private Foundations	1	0	0
Parent Organizations	3	3	3
Sample N = 356			

districts, especially for mathematics (slightly more than half of the districts received such funds in 1975-76). Each of the other funding sources--government grants, specific state grants (beyond general state aid allocations), private foundations, and parent organizations provided funds to a relatively small number of districts. It is interesting to note that, as shown in Table 56, 70 percent of the districts did not receive funds for social studies instruction from <u>any</u> of these sources; the comparable figures are 51 percent for science, and 34 percent for mathematics.

Table 56

PERCENT OF DISTRICTS RECEIVING FUNDS
FOR SCIENCE, MATHEMATICS, AND SOCIAL STUDIES
INSTRUCTION BY NUMBER OF FUNDING SOURCES

Number of Funding Sources	Science	Mathematics	Social Studies
0	51	34	70
1	34	47	21
2	11	15	9
3 or More	4	4	1
Sample N = 356			

C. School Budgets for Science Equipment and Supplies

Principals were asked to indicate if their schools have an annual budget specifically for the purchase of new science equipment[1] and, if so, to specify the total amount of this budget for the 1976-77 school year. Principals were also asked to provide this information about the budget for consumable science supplies.[2] The results for these questions are shown in Table 57. Relatively few schools have specific budgets for science equipment and supplies (ranging from 16 percent to 44 percent for science equipment and from 20 percent to 55 percent for science supplies). In general, schools are more likely to have specific budgets for science supplies than for science equipment, and secondary schools are significantly more likely than elementary schools to have specific budgets for science equipment and supplies. The per pupil amounts of these budgets for schools which include one or more of the grades 10-12 are significantly larger than those for elementary schools. Due to the very large standard errors associated with the 7-9 sample school data, none of the differences involving 7-9 schools is significant.

D. Availability of Facilities and Equipment

Principals were given a list of facilities and equipment and asked to indicate the ones which are available to students in their schools. The results are presented in Table 58. Note that nearly all schools with grades 7-9 and grades 10-12 have microscopes (95 percent); microscopes are also quite common in elementary schools (79 percent of schools with grades 4-6 and 89 percent of schools with grades K-3 have microscopes available to their students). The only other types of equipment available in a majority of schools at any grade range are scientific models at all grade levels, cameras at grades 7-9 and 10-12, and hand-held calculators and darkrooms in schools containing one or more of the grades 10-12.

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1 Science equipment was defined as nonconsumable, nonperishable items such as microscopes, scales, etc.

2 Consumable science supplies were defined as materials that must continually be replenished such as chemicals, glassware, batteries, etc.

Table 57

PERCENT OF SCHOOLS WITH SPECIFIC BUDGETS FOR SCIENCE EQUIPMENT AND SCIENCE SUPPLIES, AND AVERAGE AMOUNT OF THESE BUDGETS PER PUPIL BY SAMPLE GRADE RANGE [1/]

Sample Grade Range	Science Equipment				Science Supplies			
	Sample N	Percent of Schools	Average Budget Amount	Standard Error	Sample N	Percent of Schools	Average Budget Amount	Standard Error
K-6	107	16	$ 3.05	$ .31	155	20	$ 1.56	$ .15
7-9	119	21	$ 5.03	$2.09	176	29	$ 3.62	$1.25
10-12	117	44	$ 5.46	$ .84	180	57	$ 4.02	$0.65

1/ Schools which violated the routing pattern, i.e. said there was a specific budget but did not indicate the amount, and schools which did not indicate total enrollment were not included in the calculations of average amounts per pupil.

Table 58

PERCENT OF SCHOOLS WITH VARIOUS KINDS OF EQUIPMENT BY SAMPLE GRADE RANGE

Equipment	Sample Grade Range			
	K-3	4-6	7-9	10-12
Computer or Computer Terminals	5	9	16	36
Greenhouse	5	6	15	26
Telescope	16	20	25	29
Darkroom	11	16	37	75
Weather Station	7	10	14	22
Hand-held Calculators	28	36	49	77
Microscopes	89	79	95	95
Cameras	34	36	51	81
Models (e.g., of the solar system, parts of organisms, etc.)	80	80	74	79
Small Group Meeting Rooms	48	40	56	59
Resource Center for Individualized Instruction	45	45	51	44
Mathematics Laboratory	13	19	31	15
Sample N	317	292	298	270

Generally, schools in the higher grade ranges are more likely to have each of the listed items of equipment available. For example, the availability of greenhouses increases from 5 percent in schools with grades K-3 to 26 percent in schools with grades 10-12. Similarly, the results for computers or computer terminals, hand-held calculators, telescopes. darkrooms, cameras and weather stations show an increasing percentage of schools with each type of equipment as sample grade range increases.

The availability of particular types of facilities does not follow any consistent grade range pattern. Approximately half of the schools in each grade range have small group meeting rooms (the figures range from 40 percent for schools with grades 4-6 to 59 percent for schools with grades 10-12) and approximately half have resource centers for individualized instruction (ranging from 44 percent at 10-12 to 51 percent at 7-9). Mathematics laboratories are less common, with 31 percent of the schools with grades 7-9 and fewer than 20 percent of the schools with grades K-3, 4-6, and 10-12 having this facility available.

Table B.32 in the Appendix shows the breakdown of schools which have each of a number of selected types of equipment and facilities by region, type of community, size of district, percent of students in the Federal free lunch program and school size. There are no significant differences among regions of the country in terms of the availability of the selected facilities and equipment (computers or computer terminals, hand-held calculators, resource centers for individualized instruction, and mathematics laboratories). However, there are significant differences among community types, district sizes and per pupil expenditures, school sizes, and the percentages of low-income students in schools.

The general pattern by type of community is one in which suburban schools are the best equipped, followed by urban schools. Schools in small cities and rural areas are the least well equipped. For example, schools in suburban locations are significantly more likely than schools in small cities, rural areas, or urban areas to have computers or computer terminals. Urban schools are in turn more likely than small cities to have computer facilities. A similar pattern is seen with respect to mathematics laboratories and individualized instruction resource centers: suburban schools are significantly more likely to have each of these than schools in small cities, rural areas, or urban areas; and urban schools are significantly more likely than rural or small city schools to have these facilities. The availability of hand-held calculators follows a somewhat different pattern: rural schools are as likely as suburban schools to have calculators, and both are significantly more likely to have calculators than schools in small cities or urban areas.

Based on these selected types of facilities and equipment, schools in large districts tend to be better equipped than those in small districts. The only exception is again hand-held calculators; schools in large districts are less likely than those in small or medium sized districts to have calculators. Also, as might be expected, schools in districts with high per pupil expenditures are significantly more likely to have each of the selected items.

Characteristics of the schools themselves (as opposed to district characteristics) are less strongly related to the availability of the selected types of facilities and equipment. While small schools are less likely to have computers or computer terminals than either medium or large schools, none of the differences between school sizes in availability of calculators, resource centers or mathematics laboratories is significant. In addition, there is no consistent relationship between availability of the selected facilities and equipment on the socioeconomic composition of the student body. Schools with a high percentage of students who qualify for the federal free lunch program are significantly less likely than others to have computers or computer terminals, calculators, or resource centers but significantly more likely to have mathematics laboratories.

E. Use of Selected Facilities and Equipment

Each elementary teacher who was selected to answer questions about science instruction was asked to indicate the type of room in which the class was conducted. The results for K-3 and 4-6 science classes are shown in Table 59. Fifty-four percent of all elementary science classes are taught in classrooms with portable science materials. Only 4 percent of the science classes (and virtually all of these are grade 4-6 classes) are conducted in laboratories or special science rooms, while 38 percent of K-3 science classes and 34 percent of 4-6 science classes are conducted in classrooms with no science facilities at all.

Table 59

PERCENT OF ELEMENTARY SCIENCE CLASSES
CONDUCTED IN VARIOUS TYPES OF ROOMS, BY GRADE RANGE

Type of Room	Grade Range		
	K-3	4-6	Total
Laboratory or special science room	0	9	4
Classroom with portable science materials	54	54	54
Classroom with no science facilities	38	34	36
Missing	8	3	6
Sample N	287	271	558

Science teachers at all grade ranges were asked about the frequency of use of various types of facilities and equipment. The results are shown in Table 60. In the majority of classes at each grade level, science teachers indicated that computers and computer terminals are not needed; a number of others indicated that these are needed but not available. Only 9 percent of the 10-12 science classes actually use computer equipment, while no more than 2 percent of K-3, 4-6, or 7-9 science classes use computers or computer terminals.

Darkrooms are not heavily used in science classes. According to their teachers, more than two-thirds of the science classes at each grade level do not need darkrooms; 16 percent of 10-12 science classes make use of darkrooms while no more than 6 percent of the science classes in the three lower grade ranges use them. Similarly, most science classes do not need cameras (54 percent at K-3 and approximately 60 percent at each of the other grade levels); however, 20 percent or more of the K-3, 4-6, and 7-9 science classes need cameras but do not have them available.

Relatively few science classes in any of the four grade ranges make use of greenhouses (less than 15 percent) and weather stations (less than 20 percent). However, between 28 and 40 percent of these classes would use greenhouses if they were available, while between 15 and 43 percent would make use of weather stations if they had them. Similarly, telescopes are used in no more than 15 percent of the science classes in any of the four grade ranges, but from 16 to 42 percent of these classes would use telescopes if they were available.

Many teachers feel that calculators are not needed in their science classes (ranging from 47 percent in grades 10-12 to 69 percent in grades K-3), while between 14 and 19 percent indicate they are needed but not available. Thirty-six percent of 10-12 science classes make use of calculators; the figures for K-3, 4-6, and 7-9 are 2, 12, and 10 percent, respectively.

Microscopes are heavily used in science classes. Twenty-eight percent of K-3 science classes use microscopes; another 21 percent need them but do not have them available. In the 4-6 grade range, 59 percent of the science classes use microscopes and an additional 27 percent would use them if they

Table 60

USE OF SELECTED FACILITIES AND EQUIPMENT
IN SCIENCE CLASSES, BY GRADE RANGE

	K-3				4-6				7-9				10-12			
	Not Needed	Needed But Not Available	Used By Class	Missing	Not Needed	Needed But Not Available	Used By Class	Missing	Not Needed	Needed But Not Available	Used By Class	Missing	Not Needed	Needed But Not Available	Used By Class	Missing
Computers or Computer Terminals	82	3	0	14	82	10	2	6	84	14	1	2	72	16	9	3
Greenhouse	54	28	3	15	46	40	9	5	50	40	8	2	50	33	13	5
Telescope	58	22	6	14	43	42	10	5	56	27	15	2	69	16	11	3
Darkroom	78	7	0	15	67	21	3	9	77	17	6	1	71	9	16	3
Weather Station	58	22	5	15	37	43	11	10	50	32	17	2	78	15	5	3
Calculators	69	15	2	15	61	19	12	8	69	19	10	2	47	14	36	3
Microscopes	37	21	28	14	8	27	59	7	30	7	60	3	33	1	63	3
Cameras	54	20	11	15	61	25	7	7	62	23	10	6	61	14	21	4
Models	27	26	33	15	9	25	59	8	17	11	69	3	15	12	70	4
Sample N =	287				271				535				586			

had them.[1] Microscopes appear to be in sufficient supply at grades 7-9 and 10-12, with almost all of the classes which do not use them indicating they are not needed.

Similarly, scientific models (such as models of the solar system or parts of organisms) are used in a large number of science classes; percentages range from 33 percent in grades K-3 to 70 percent in grades 10-12. Relatively few 7-9 and 10-12 classes say models are needed but not available (11 and 12 percent, respectively), while approximately one-fourth of K-3 and 4-6 science classes need models but do not have them.

Mathematics teachers were asked about the availablity and use of computers or computer terminals and hand-held calculators; these results are shown in Table 61. The majority of K-3 classes do not need these, according to their teachers; however, 11 percent of K-3 mathematics classes would use computers if they were available and 15 percent need hand-held calculators but do not have them available.

The percent of mathematics classes using computers increases from 2 percent in grades K-3 to 5 percent in 4-6, 11 percent in 7-9, and 16 percent in 10-12. The use of calculators also increases with grade level, from 6 percent of K-3 math classes to 48 percent of 10-12 math classes. Interestingly, teachers of mathematics classes which do not use calculators have different opinions about the need for them. Most teachers of K-3 math classes indicate that hand-held calculators are not needed. In grades 4-6, 44 percent of mathematics classes are categorized as not needing calculators, while 39 percent need calculators but do not have them available. The comparable figures for 7-9 math classes are 42 percent "not needed" and 28 percent "needed but not available"; the percentages for 10-12 math classes are 33 and 18, respectively.

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[1] The relatively large percentages of "needed but not available" for microscopes are surprising considering that 89 percent of schools with grades K-3 and 79 percent of schools with grades 4-6 indicate they have microscopes available. The problem may be one of inadequate numbers or distribution of microscopes within the school.

Table 61

USE OF COMPUTERS OR COMPUTER TERMINALS AND HAND-HELD CALCULATORS
IN MATHEMATICS CLASSES, BY GRADE RANGE

	K-3				4-6				7-9				10-12			
	Not Needed	Needed But Not Available	Used By Class	Missing	Not Needed	Needed But Not Available	Used By Class	Missing	Not Needed	Needed But Not Available	Used By Class	Missing	Not Needed	Needed But Not Available	Used By Class	Missing
Computers or Computer Terminals	85	11	2	2	63	26	5	6	66	19	11	3	59	17	16	7
Hand-Held Calculators	77	15	6	2	44	39	14	3	42	28	30	1	33	18	48	1
Sample N	297				277				550				548			

F. Ratings of the Adequacy of Facilities, Equipment, and Supplies in Science, Mathematics, and Social Studies

Teachers were asked to rate the adequacy of facilities, equipment, and supplies for teaching a particular class; response options were "very good," "satisfactory," "improvement needed" and "not relevant to this class". Table 62 shows the percent of science, mathematics, and social studies classes in each grade range for which teachers indicated that improvement is needed in each area.[1] Complete data are presented in Appendix Table B.33.

1. Mathematics Classes

While only 14 percent of mathematics teachers rated their facilities as needing improvement,[2] many more teachers are dissatisfied with aspects related to facilities. Forty-one percent said spaces for small groups to work need improvement, 33 percent are dissatisfied with the storage space available for equipment and supplies, and 18 percent indicated that the space available for classroom preparation is less than satisfactory.

Mathematics equipment in 40 percent of the classes needs improvement, according to the teachers of these classes. Supplies appear to be less of a problem, with only 28 percent of the ratings being "improvement needed." However, nearly half of the teachers indicated that money to buy supplies on a day-to-day basis needs improvement; it is not known whether the dissatisfaction is with the amount available or procedural difficulties or both. Finally, the availability of laboratory assistants or paraprofessional help was rated a major problem by 46 percent of the teachers. In all of these areas, differences among K-3, 4-6, 7-9, and 10-12 mathematics classes were quite small.

2. Science Classes

Issues related to facilities, equipment, and supplies are significantly more problematical in science classes than in mathematics or social studies classes. The availability of laboratory assistants or paraprofessional help is a

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1 The results are actually the percent of classes for which teachers indicated that improvement is needed in each area. However, for ease of communication, results will sometimes be reported as if they were percentages of teachers.

2 Facilities were defined as building and classroom fixtures.

Table 62

PERCENT OF CLASSES FOR WHICH TEACHERS INDICATED THAT IMPROVEMENT IS NEEDED IN EACH AREA, BY SUBJECT AND GRADE RANGE

Area	Mathematics					Science					Social Studies				
	K-3	4-6	7-9	10-12	Total	K-3	4-6	7-9	10-12	Total	K-3	4-6	7-9	10-12	Total
Facilities	7	13	20	18	14	27	42	44	34	36	12	13	24	17	16
Equipment	36	52	40	30	40	46	55	39	35	45	26	28	33	32	30
Supplies	22	36	22	13	24	38	53	2[illegible]	21	36	27	38	38	39	35
Money to Buy Supplies on a Day-to-Day Basis	48	57	43	39	48	49	57	57	47	53	46	53	53	52	50
Storage Space for Equipment and Supplies	36	35	30	29	33	40	50	42	39	42	31	39	38	38	36
Space Available for Classroom Preparation	24	13	17	13	18	30	50	39	28	37	17	20	28	27	23
Spaces for Small Groups to Work	33	43	49	41	41	35	54	56	44	46	28	42	53	51	43
Availability of Laboratory Assistants or Paraprofessional Help	37	54	51	46	46	48	56	72	62	58	42	50	54	48	48
Sample N	297	277	550	548	1672	287	271	535	586	1679	254	281	453	490	1478

major problem, with teachers of 58 percent of science classes rating this factor as "improvement needed." Science supplies are also considered inadequate by many teachers; 36 percent indicated science supplies need improvement, while 53 percent indicated that money to buy supplies on a day-to-day basis needs improvement. Each of the other areas--facilities, equipment, storage space, space for classroom preparation, and spaces for small groups to work--was rated "improvement needed" for between 36 and 46 percent of science classes. Differences among classes in the four grade ranges were generally small.

3. Social Studies Classes

As in the case in mathematics and science classes, the availability of paraprofessional help and money to buy supplies on a day-to-day basis were the areas most frequently considered as needing improvement (48 percent and 50 percent, respectively). While only 16 percent of the teachers indicated that the facilities need improvement, 43 percent were dissatisfied with the spaces for small groups to work. Each of the other areas--equipment, supplies, storage space, and space available for classroom preparation--was rated as needing improvement for between 23 and 36 percent of the social studies classes. While differences among grade ranges were small, there was a general tendency for increasing "needs improvement" ratings as grade increased.

Chapter 8

Qualifications of Science, Mathematics, and Social Studies Teachers

A. Overview

The teacher questionnaires were used to collect data about teacher characteristics such as sex, degrees earned, and number of years teaching experience. In addition, teachers were asked about their qualifications for teaching a number of subjects and about aspects of teaching in which they felt a need for additional assistance. The results are presented in the following sections.

B. Teacher Characteristics

Teachers were asked to indicate the number of years they have taught, including 1976-77 as a full year even though the data were collected during that year. As shown in Table 63, the average number of years of teaching experience is 11.5 years. Note that the average for teachers in the 12 subject/grade range categories of interest in this study (K-3, 4-6, 7-9, and 10-12 science, mathematics, and social studies) are quite similar.[1]

As shown in Table 64, sizable numbers of teachers have earned one or more degrees beyond the bachelor's; secondary teachers are significantly more likely than elementary teachers to have earned a graduate degree. In addition, many teachers have taken courses for college credit in recent years; as shown in Table 65 more than 40 percent of all science, mathematics, and social studies teachers have taken a course for college credit in 1976 or 1977.

Table 66 shows the breakdown of teacher sex by subject and grade range. As expected, very few elementary teachers are male, and the proportion of male teachers increases with grade. Only 4 percent of K-3 teachers are male; the figures are 25 percent for grades 4-6, 59 percent in grades 7-9, and 73 percent in grades 10-12. On the whole, differences among the three subject areas are minor.

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[1] Even though some of the differences between groups are statistically significant, the magnitude of these differences are generally not very large.

Table 63

AVERAGE NUMBER OF YEARS TEACHING EXPERIENCE
BY SUBJECT AND GRADE RANGE

Grade Range	Subject						Total	
	Mathematics		Science		Social Studies			
	No. of Years	Standard Error	No. of Years	Standard Error	No. of Years	Standard Error	No. of Years	Standard Error
K-3	12.0	.32	10.4	.38	11.1	.32	11.2	.18
4-6	12.5	.95	10.5	.48	11.6	.48	11.6	.39
7-9	12.9	.38	11.5	.21	11.3	.61	12.0	.20
10-12	11.2	.25	11.8	.39	11.1	.47	11.3	.22
TOTAL	12.2	.30	10.8	.21	11.3	.24	11.5	.14
Sample N	1666		1669		1468		4803	

To provide additional background information about science, mathematics, and social studies teachers, sample teachers were asked about their qualifications for teaching. Elementary teachers rated their qualifications for teaching each of 4 subjects--math, science, social studies, and reading; these results are shown in Table 67. Note that elementary teachers' perceptions about their qualifications for teaching the various subjects are consistent with the amount of time that is generally spent in instruction in these areas. Nearly two-thirds of elementary teachers feel "very well qualified" to teach reading. The corresponding figures for mathematics, social studies, and science are 49 percent, 39 percent, and 22 percent, respectively. At the other end of the scale, 16 percent of elementary teachers feel "not well qualified" to teach science, the only subject in which more than 6 percent of the teachers so indicated.

Table 64

PERCENT OF TEACHERS RECEIVING A DEGREE BEYOND THE BACHELOR'S, BY SUBJECT AND GRADE RANGE

Grade Range	Mathematics			Science			Social Studies			Total		
	Yes	No	Missing	Yes	No	Missing	Yes	No	Missing	Yes	No	Missing
K-3 (N = 838)	34	66	1	28	72	0	23	76	1	29	71	1
4-6 (N = 829)	34	64	2	30	70	1	33	66	1	32	66	1
7-9 (N = 1538)	45	55	0	50	50	0	51	48	1	48	51	0
10-12 (N = 1624)	55	45	0	54	44	2	58	41	1	56	43	1
Sample N	1672			1679			1478			4829		

Table 65

TEACHERS' YEAR OF LAST COURSE FOR COLLEGE CREDIT, BY SUBJECT AND GRADE RANGE

Grade Range	Mathematics			Science			Social Studies			Total		
	Prior to 1976	1976-1977	Missing	Prior to 1976	1976-1977	Missing	Prior to 1976	1976-1977	Missing	Prior to 1976	1976-1977	Missing
K-3 (N = 838)	56	42	2	47	49	4	48	50	2	51	47	3
4-6 (N = 829)	50	47	3	46	51	3	52	44	4	49	47	3
7-9 (N = 1538)	63	36	1	56	44	1	51	48	2	57	42	1
10-12 (N = 1624)	55	42	3	56	41	3	56	42	2	56	42	2
Sample N	1672			1679			1478			4829		

Table 66

TEACHER SEX BY SUBJECT AND GRADE RANGE

Grade Range	Mathematics			Science			Social Studies			Total		
	Male	Female	Missing	Male	Female	Missing	Male	Female	Missing	Male	Female	Missing
K-3 (N = 838)	6	94	0	2	98	0	3	96	1	4	96	0
4-6 (N = 829)	21	76	2	33	67	0	19	79	1	25	74	1
7-9 (N = 1538)	54	46	0	62	38	0	62	38	0	59	41	0
10-12 (N = 1624)	68	32	0	74	24	2	75	24	1	73	26	1
Sample N	1672			1679			1478			4829		

Table 67

ELEMENTARY TEACHERS' PERCEPTIONS OF
THEIR QUALIFICATIONS TO TEACH EACH SUBJECT

Subject	Percent of Teachers			
	Not Well Qualified	Adaquately Qualified	Very Well Qualified	Missing
Mathematics	4	46	49	1
Science	16	60	22	2
Social Studies	6	54	39	1
Reading	3	32	63	2
Sample N = 1667				

As shown in Table 68, most secondary science, mathematics, and social studies teachers teach all of their courses within a single subject area; the percentages are 76 percent for grades 7-9 and 85 percent for grades 10-12. The sample secondary teachers were asked to indicate if they are teaching any courses that they do not feel adequately qualified to teach and, if so, to specify the courses. Thirteen percent of secondary science teachers are currently teaching one or more courses for which they feel inadequately qualified, compared to 12 percent of social studies teachers and 8 percent of mathematics teachers. (The results for 7-9 and 10-12 teachers in each subject are presented in Table 69.) The vast majority of the teachers listed courses in their sample subject area; for example, most of the science teachers who indicated they are inadequately qualified to teach one or more courses were referring to courses within science. The problem of teaching "out of field" is apparently a problem within each major subject area rather than across subject areas.

Table 68

PERCENT OF SECONDARY SCIENCE, MATHEMATICS AND SOCIAL STUDIES TEACHERS TEACHING VARIOUS COMBINATIONS OF SUBJECTS, BY GRADE RANGE

Subjects Taught	Grade Range 7-9	10-12	Total
Mathematics only	28	27	28
Science only	24	27	25
Social Studies only	24	31	27
Mathematics and Science only	3	5	4
Mathematics and Social Studies only	1	0	1
Science and Social Studies only	1	2	1
Mathematics, Science, and Social Studies only	0	0	0
Other combinations of subjects	19	8	14
Sample N		3162	

C. Teacher Needs for Assistance

Teachers were given a list of areas and asked to specify for each whether: (1) they do not usually need assistance, (2) they would like assistance from a resource person (e.g., a coordinator, a consultant, or another teacher) but receive little or none, or (3) they would like assistance and receive adequate assistance. Twelve areas were common across all teachers; in addition, mathematics teachers were asked about their needs for assistance in using calculators and science teachers about needs for assistance in maintaining live animals and plants.

Table 69

PERCENT OF SECONDARY TEACHERS OF EACH SUBJECT WHO FEEL INADEQUATELY QUALIFIED TO TEACH ONE OR MORE OF THEIR COURSES

	Yes	No	Unknown
Mathematics			
7-9 (N = 550)	11	88	1
10-12 (N = 548)	5	95	0
Science			
7-9 (N =535)	13	86	1
10-12 (N = 586)	13	82	3
Social Studies			
7-9 (N =453)	9	89	2
10-12 (N = 490)	16	81	3

Table 70 summarizes the data by indicating the breakdown of teachers who would like assistance but receive little or none in varying numbers of areas. Twenty-three percent of the teachers did not indicate a need for additional assistance in any of the areas; 42 percent specified from 1 to 4 areas, while 32 percent indicated a need for additional assistance in 5 or more areas. Subgroup comparisons for overall needs for assistance are presented in Table 71. Note that, in general, differences among subgroups are minimal.

The complete results for individual areas of need are presented in Table 72 for all science, mathematics, and social studies teachers. (Table B.34 in the Appendix presents the results broken down by subject and grade range.) Note that more than 75 percent of science, mathematics, and social studies teachers do not usually need assistance in lesson planning, actually teaching lessons, and maintaining discipline. These results were quite consistent across subject areas and grade ranges.

Areas of greatest need include obtaining information about instructional materials, learning new teaching methods, implementing the discovery/inquiry approach, and using hands-on or manipulative materials. Each of these areas is discussed below.

Table 70

PERCENT OF TEACHERS WITH VARYING NUMBERS OF AREAS IN WHICH THEY NEED ASSISTANCE, BY SUBJECT AND GRADE RANGE

Subject/ Grade Range	Needs for Assistance			
	0 Areas	1-4 Areas	5 or More Areas	Unknown 1/
Total (N = 4829)	23	42	32	3
Mathematics				
K-3 (N = 297)	25	48	27	1
4-6 (N = 277)	30	41	26	3
7-9 (N = 550)	21	55	23	1
10-12 (N = 548)	26	45	29	0
Science				
K-3 (N = 287)	25	32	33	10
4-6 (N = 271)	17	32	45	6
7-9 (N = 535)	19	43	37	2
10-12 (N = 586)	17	44	35	4
Social Studies				
K-3 (N = 254)	33	35	26	5
4-6 (N = 281)	23	38	36	3
7-9 (N = 453)	22	46	29	3
10-12 (N = 490)	22	39	37	2

1/ This includes all teachers who omitted 6 or more parts of the question.

Table 71

PERCENT OF TEACHERS WHO WOULD LIKE ADDITIONAL ASSISTANCE IN NONE, 1 TO 4, AND 5 OR MORE AREAS, BY REGION, TYPE OF COMMUNITY, SIZE OF DISTRICT, PER PUPIL EXPENDITURE, PERCENT OF SCHOOL'S STUDENTS IN FREE LUNCH PROGRAM, AND TEACHER/DISTRICT SUPERVISOR RATIO

Subject/ Grade Range	Percent of Teachers			
	0 Areas	1-4 Areas	5 or More Areas	Unknown 1/
Nation (N = 4829)	24	41	32	4
Region 2/				
Northeast (N = 1032)	23	40	33	4
South (N = 1679)	24	41	31	4
North Central (N = 1325)	21	45	31	3
West (N = 793)	28	36	32	3
Type of Community				
Rural (N = 1038)	21	40	36	3
Small City (N = 1289)	24	38	33	5
Urban (N = 1208)	26	41	30	3
Suburban (N = 1139)	26	42	28	3
Unknown (N = 155)	18	51	28	3
Size of District				
Small (N = 1079)	18	45	33	4
Medium (N = 1819)	23	38	36	3
Large (N = 1768)	28	42	28	2
Unknown (N = 163)	28	38	25	9
Per Pupil Expenditure				
Low (N = 1317)	24	42	32	3
Medium (N = 1528)	22	39	36	3
High (N = 1160)	26	40	30	4
Unknown (N = 824)	24	44	28	5
Students in Free Lunch Program				
Less than 10% (N = 1125)	27	42	27	4
10-30% (N = 1315)	25	36	36	3
More than 30% (N = 1038)	22	41	34	3
Unknown (N = 1351)	22	45	30	4
Teacher/District Supervisor Ratio				
No Supervisors (N = 1769)	23	39	35	3
Greater than 50:1 (N = 1202)	26	44	29	2
50:1 or Less (N = 684)	19	47	31	4
Unknown (N = 1174)	25	40	30	5

1/ This includes all teachers who omitted 6 or more parts of the question.

2/ Refer to Appendix A for definitions of reporting variables.

Table 72

SCIENCE, MATHEMATICS AND SOCIAL STUDIES
TEACHERS' NEEDS FOR ASSISTANCE

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	70	15	11	4
Lesson planning	83	9	5	4
Learning new teaching methods	34	43	18	4
Actually teaching lessons	78	14	5	4
Obtaining information about instructional materials..	30	43	24	4
Obtaining subject matter information	50	28	18	5
Implementing discovery/inquiry approach	47	36	12	5
Using manipulative or hands-on materials	48	33	14	5
Maintaining equipment	62	19	14	4
Working with small groups of students	60	29	6	4
Maintaining discipline	82	8	6	3
Articulating instruction across grade levels	57	29	8	6

Sample N = 4829

1. Obtaining Information About Instructional Materials

Approximately two-thirds of all science, mathematics, and social studies teachers feel the need for assistance in obtaining information about instructional materials. Yet for every 3 teachers who express this need, only 1 feels that he or she is receiving adequate assistance in this area. Secondary mathematics teachers were significantly less likely than others to indicate this as a need, while secondary social studies teachers were significantly more likely to express this need.

2. Learning New Teaching Methods

Overall, 61 percent of science, mathematics, and social studies teachers indicated a need for assistance in learning new teaching methods; 43 percent are not currently receiving such assistance.

3. Implementing the Discovery/Inquiry Approach

Many of the federally-funded curriculum development projects, as well as some of the more recent commercially developed materials, depend upon a discovery or inquiry approach. However, fewer than half of all science, mathematics, and social studies teachers feel they are competent in this area without assistance from a coordinator or other resource person. Social studies teachers, especially those in grades 7-12, were significantly more likely than the average to feel a need in this area. Overall, 36 percent indicated they would like assistance but receive little or none; an additional 12 percent indicated they would like assistance and are currently receiving adequate assistance in this area.

4. Using Manipulative or Hands-On Materials

Forty-eight percent of all science, mathematics, and social studies teachers indicated they would like assistance in the use of manipulatives, while only 14 percent feel they are receiving an adequate level of assistance in this area. These findings may help explain the fact that, as reported earlier, manipulative materials are used less than once a week in more than half of all science, mathematics, and social studies classes. As was the case for implementing the discovery approach, social studies teachers were more likely than others to express this need.

5. Other Areas in Which Assistance Is Needed

While 60 percent of all science, mathematics, and social studies teachers do not need assistance in working with small groups of students, this area still appears to be a major need for teachers. Twenty-nine percent of the teachers indicated that they would like assistance in working with small groups of students but that they receive little or no help in this; only 6 percent said they would like help and receive adequate help.

Obtaining subject matter information is considered an unmet need by 28 percent of the teachers overall. The need is significantly less in mathematics and significantly greater in elementary science and social studies. Similarly, articulation of instruction across grade levels appears to be more of a problem in some subject areas than in others. Overall, 29 percent of science, mathematics, and social studies teachers indicate a need for additional assistance in this area (only 8 percent need help and get it, while 57 percent indicated they do not need assistance). The percentages of teachers needing additional help in articulating instruction across grade levels ranged from 21 percent in K-3 social studies to 40 percent in 10-12 science.

Two areas were subject-specific. Mathematics teachers were asked about their needs for assistance in using calculators, and most reported they do not need help, perhaps because calculators are not used in most mathematics classes.[1] Science teachers were asked if they need assistance in maintaining live animals and plants. Between 25 and 31 percent of the teachers at each grade level indicated they would like assistance but receive little or none. Most of the remainder indicated they need no assistance in maintaining plants and animals.

[1] As was reported in Chapter 7, only 6 percent of K-3, 14 percent of 4-6, 30 percent of 7-9 and 42 percent of 10-12 mathematics classes make use of hand-held calculators.

Chapter 9

Sources of Information Used by Science, Mathematics and Social Studies Educators

A. Overview

Teachers, principals, district program questionnare respondents and state supervisors were given a list of possible sources of information about new developments in education and asked to rate the utility of each. Response options were: (1) not useful, (2) somewhat useful and (3) very useful. The percent of each group rating each source as "very useful" is presented in Table 73; complete data are included in Tables B.35-B.38 in the Appendix. The perceived utility of each of the sources is discussed separately below.

B. Specific Sources of Information About New Developments in Education

1. Teachers

Many science, mathematics, and social studies teachers rate other teachers as a very useful source of information about new developments in education; percentages ranged from 40 percent in 10-12 to 55 percent in K-3. Other groups also perceive teachers as useful sources of information. Between 31 and 46 percent of principals (depending on grade range for which the school had been selected) rated teachers as very useful sources of information as did between 29 and 35 percent of district program questionnaire respondents and between 21 and 25 percent of state supervisors. Most of the remaining members of each group said teachers are "somewhat useful" sources of information.

2. Principals

Between 38 and 46 percent of principals consider other principals to be very useful as sources of information about new developments in education. Percentages for teachers are lower, with those in K-3 and 4-6 significantly more likely than those in 7-9 and 10-12 to consider principals as very useful sources of information (27 percent in K-3, 25 percent in 4-6, 18 percent in 7-9, and 12 percent in 10-12).[1] There are no significant differences by subject. Percentages for district program questionnaire respondents range from 12 to 20 percent, while no more than 6 percent of state supervisors in any subject consider principals very useful as a source of information.

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[1] The difference between 7-9 and 10-12 is also statistically significant.

Table 73

PERCENT OF RESPONDENTS INDICATING EACH SOURCE OF INFORMATION AS VERY USEFUL

	State Supervisors			District Program Questionnaire						Principals			
	Mathematics	Science	Social Studies	Mathematics K-6	Mathematics 7-12	Science K-6	Science 7-12	Social Studies K-6	Social Studies 7-12	K-3	4-6	7-9	10-12
Teachers	23	25	21	32	29	32	33	33	35	44	46	31	40
Principals	6	6	1	12	15	19	18	17	20	45	38	39	46
Local Subject Specialists/Coordinators	56	51	53	20	12	30	19	26	15	41	48	36	40
State Department Personnel	55	61	47	9	13	13	13	12	12	10	12	12	13
College Courses	6	10	9	9	15	16	26	18	32	30	24	34	17
Local In-Service Programs	22	31	20	28	22	31	25	33	18	47	41	30	25
Federally Sponsored Workshops	26	48	43	18	11	27	24	22	12	13	13	19	12
Teacher Union Meetings	0	2	0	4	1	2	2	1	4	1	1	0	1
Meetings of Professional Organizations	79	66	61	30	31	32	42	22	30	37	29	47	53
Journals and Other Professional Publications	91	72	84	52	49	57	55	56	52	58	50	71	53
Publishers and Sales Representatives	33	28	16	19	14	20	14	16	10	6	9	10	5
Sample N	50	61	62	327	321	326	318	303	298	317	292	298	270

Table 73 (Continued)

PERCENT OF RESPONDENTS INDICATING EACH SOURCE OF INFORMATION AS VERY USEFUL

	Teachers															
	K-3				4-6				7-9				10-12			
	Math	Science	Social Studies	Total	Math	Science	Social Studies	Total	Math	Science	Social Studies	Total	Math	Science	Social Studies	Total
Teachers	47	61	58	55	49	53	44	48	56	52	45	51	39	38	42	40
Principals	23	33	26	27	23	23	28	25	12	13	19	18	11	9	15	12
Local Subject Specialists/Coordinators	21	27	28	25	20	21	17	20	18	17	22	19	16	11	11	12
State Department Personnel	5	6	2	5	8	3	4	3	3	7	5	5	4	4	5	4
College Courses	40	39	46	41	34	32	37	34	28	44	34	35	30	48	34	37
Local In-Service Programs	43	45	44	44	40	32	38	36	25	23	26	25	23	21	14	19
Federally Sponsored Workshops	22	21	16	20	23	22	25	23	16	26	16	19	19	29	13	20
Teacher Union Meetings	5	4	6	5	3	3	5	4	6	4	7	6	3	6	9	6
Meetings of Professional Organizations	14	20	16	17	13	17	13	14	22	21	22	22	25	27	20	24
Journals and Other Professional Publications	47	36	39	41	36	48	47	43	40	49	42	43	42	54	45	47
Publishers and Sales Representatives	8	12	14	11	10	12	10	11	9	9	11	10	11	10	12	11
Sample N	297	287	254	838	277	271	281	829	550	535	453	1538	548	586	490	1624

3. Local Subject Specialists/Coordinators

Teacher ratings of the utility of local subject specialists showed the same pattern as did their ratings of principals; 25 percent of K-3 teachers find local subject specialists very useful sources of information compared to 20 percent in 4-6, 19 percent in 7-9, and 12 percent in 10-12. Principal "very useful" ratings ranged from 36 to 48 percent. Interestingly, district program questionnaire respondents were no more likely than teachers and were less likely than principals to rate local subject specialists very useful sources of information. A possible explanation may be that most districts have no more than one such person in any subject area and there is very little communication between subject specialists across districts. State supervisors, on the other hand, consider local subject specialists a major source of information; slightly more than half of the state supervisors in each subject area rated local specialists very useful sources of information.

4. State Department Personnel

While from 47 to 61 percent of state supervisors find state department personnel to be very useful sources of information, no more than 13 percent of any group of principals or district program questionnaire respondents or 8 percent of any group of teachers consider state department personnel very useful as a source of information.

5. College Courses

The percentages of teachers rating college courses useful sources of information were quite high (41 percent of K-3 teachers, 34 percent in 4-6, 35 percent in 7-9, and 37 percent in 10-12 rated college courses courses very useful); most of the remainder said these courses were somewhat useful. Principal responses showed more variation with grade range (from 17 percent in schools with grades 10-12 to 34 percent in schools with grades 7-9). Respondents to the district program questionnaires also showed considerable variation (from 9 percent to 32 percent); within each subject area, 7-12 questionnaire respondents were significantly more likely to rate college courses very useful. Finally, very few state supervisors in each subject area find college courses very useful as a source of information about new developments in education (ranging from 6 percent in mathematics to 10 percent in science).

6. Local In-service Programs

Local in-service programs appear to be more useful to educators in grades K-6 than to those in grades 7-12. Teachers rating local in-service programs as very useful included 44 percent at K-3, 36 percent at 4-6, 25 percent at 7-9, and 19 percent in 10-12; the differences between each pair are statistically significant. Similarly, the percent of principals rating local in-service programs very useful ranged from 47 percent of those in schools with grades K-3 to 25 percent of those in schools with grades 10-12. District program questionnaire respondents showed the same trend, with percentages finding local in-service programs very useful ranging from 18 to 25 percent of K-6 questionnaire respondents and from 28 to 33 percent of 7-12 questionnaire respondents.

7. Federally Sponsored Workshops

Relatively few principals (from 12 to 19 percent) and only approximately 20 percent of teachers in each grade range indicated that federally sponsored workshops are a major source of information about new developments in education. Significantly fewer social studies teachers rated these workshops as very useful, a reflection of the fact that fewer social studies teachers than science or mathematics teachers have participated in these activities. Similarly, percentages for district program questionnaire respondents were quite low (from 11 to 27 percent). State supervisors, on the other hand, are more likely to find federally sponsored workshops very useful; percentages were 26 percent in mathematics, 43 percent in social studies, and 48 percent in science.

8. Teacher Union Meetings

Very few educators consider teacher union meetings a very useful source of information.

9. Meetings of Professional Organizations

A majority of state supervisors in each subject area (61 percent in social studies, 66 percent in science, and 79 percent in mathematics) find professional meetings very useful as a source of information about new developments in education. Percentages are somewhat lower for principals (from 29 to 53 percent) and district program questionnaire respondents (from 22 to 42 percent), and very low for teachers (17 percent of K-3 teachers, 14 percent in 4-6, 22 percent in 7-9, and 24 percent in 10-12). Secondary teachers are significantly more likely than elementary teachers to rate professional meetings as very useful.

10. Journals and Other Professional Publications

Professional publications are considered a very useful source of information by many science, mathematics, and social studies educators. Percentages for state supervisors ranged from 72 percent in science to 91 percent in mathematics. The range for principals was from 50 to 71 percent "very useful," while between 49 and 57 percent of the district program questionnaire respondents rated journals and professional publications as very useful. The percentages of teachers rating journals very useful were lower than in the other groups (between 36 and 47 percent in grades K-3, 36 to 48 percent in grades 4-6, 42 to 49 percent in grades 7-9 and 42 to 54 percent in 10-12).

Teachers, district program questionnaire respondents, and state supervisors were also asked if there are one or two journals or periodicals which they find particularly helpful to them in their work (for teachers the question was specific to the selected class). The results, shown in Table 74, are consistent with the pattern described above. State supervisors, especially those in mathematics and social studies, were most likely to indicate that journals are useful to them. Teachers, especially elementary teachers, were least likely to find journals useful. One trend apparent in this question is the increase in percent finding journals useful with increase in grade range in each subject.

11. Publishers and Sales Representatives

Approximately 10 percent of principals and teachers, and from 10 to 20 percent of district program questionnaire respondents, rated publishers and sales representatives very useful as sources of information about new developments in education. Percentages for state supervisors were somewhat higher (16 percent in social studies, 28 percent in science, and 33 percent in mathematics).

Table 74

PERCENT OF RESPONDENTS FINDING
ONE OR MORE JOURNALS PARTICULARLY USEFUL

	Yes	No	Missing or Inconsistent 1/
State Supervisors			
Mathematics (N = 50)	88	6	6
Science (N = 61)	72	16	11
Social Studies (N = 62)	86	3	11
K-6 District Program Q. Respondents			
Mathematics (N = 327)	72	16	12
Science (N = 326)	74	14	11
Social Studies (N = 303)	69	19	11
7-12 District Program Q. Respondents			
Mathematics (N = 321)	55	34	11
Science (N = 318)	69	23	8
Social Studies (N = 298)	64	24	12
K-3 Teacher 2/			
Mathematics (N = 297)	16	77	8
Science (N = 287)	21	68	12
Social Studies (N = 254)	23	64	13
4-6 Teacher 2/			
Mathematics (N = 277)	22	71	7
Science (N = 271)	23	67	10
Social Studies (N = 281)	39	51	10
7-9 Teacher 2/			
Mathematics (N = 550)	32	64	4
Science (N = 535)	37	52	11
Social Studies (N = 453)	42	52	6
10-12 Teacher 2/			
Mathematics (N = 548)	35	62	3
Science (N = 586)	61	31	8
Social Studies (N = 490)	52	43	5

1/ Includes persons who indicated one or more journals are useful but did not specify the journal as requested.

2/ These percentages are actually the percent of <u>classes</u> taught by teachers who find one or more journals particularly useful in teaching this class.

Chapter 10

Factors Which Affect Instruction in Science, Mathematics and Social Studies Education

A. Overview

Teachers, principals, and state and local supervisors (or others designated to answer questions about district programs) were given a list of "problems" and asked to rate the seriousness of each one. The exact task differed depending on the type of respondent. Since principals were asked about all 3 subject areas (as well as about reading, to provide a basis for comparison) the task was to indicate the subject areas, if any, in which each factor causes serious problems in their schools. Each teacher was asked about only one subject area and was asked to rate each factor (according to the extent of the problem caused in the school as a whole) as a serious problem, somewhat of a problem, or not a significant problem. Each district program questionnaire respondent was given the same response options but asked to rate each factor's effect on instruction in a single subject/grade range category in the district as a whole. Finally, state supervisors were asked to indicate if each factor is a serious problem in their state as a whole. Response options were (1) serious problem K-6 only, (2) serious problem 7-12 only, (3) serious problem K-6 and 7-12 and (4) not a serious problem. The results for scence, mathematics, and social studies teachers are presented separately in Table 75; the results for teachers broken down by grade range within each subject are included in Appendix Table B.39. Principal, district program questionnaire respondents, and state supervisors results are shown in Tables B.40, B.41, and B.42 in the Appendix.

The fact that the tasks were not exactly the same may well have affected the responses. For example, much larger percentages of state supervisors rated each problem as serious, perhaps because they were not given the opportunity to rate a factor as "somewhat of a problem". For this reason, in the discussion that follows, reference is often made to the "ranking" of a problem by a particular respondent group rather than to the percent labeling a factor as a "serious problem". It should be emphasized that respondents were not asked to rank the factors; rather the ranking is based on the percentage in each group rating each factor as serious.

Table 75

PERCENT OF TEACHERS IN EACH SUBJECT INDICATING THAT EACH FACTOR IS A SERIOUS PROBLEM, SOMEWHAT OF A PROBLEM, OR NOT A SIGNIFICANT PROBLEM

Factor	Mathematics				Science				Social Studies			
	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing
Belief that this subject is less important than other subjects	2	15	83	1	7	39	51	3	11	39	47	2
Compliance with Federal regulations	1	8	88	2	3	14	74	9	3	13	81	4
Inadequate facilities	5	32	62	2	26	42	29	2	12	35	50	3
Insufficient funds for purchasing equipment and supplies	13	39	46	2	26	38	31	4	23	38	37	2
Lack of materials for individualizing instruction	18	42	39	1	29	39	29	3	29	43	27	2
Out-of-date teaching materials	8	25	65	2	13	31	52	4	19	34	45	2
Insufficient numbers of textbooks	4	13	82	1	9	15	71	5	12	20	66	2
Lack of student interest in subject	14	36	49	2	9	32	55	4	12	42	44	2
Inadequate student reading abilities	24	47	28	1	24	43	29	4	32	44	21	2
Lack of teacher interest in subject	3	13	84	1	4	30	62	5	4	21	73	2
Teachers inadequately prepared to teach subject	4	17	78	1	6	36	53	5	4	22	72	2
Lack of teacher planning time	11	32	55	2	18	38	40	4	16	31	52	2
Not enough time to teach subject	4	25	70	1	15	33	50	3	11	30	57	2
Class sizes too large	19	38	42	1	15	34	49	3	18	31	49	2
Difficulty in maintaining discipline	8	28	63	1	5	24	68	3	5	23	70	2
Inadequate articulation of instruction across grade levels	9	34	55	2	9	40	45	6	11	37	50	3
Inadequate diversity of electives	5	20	69	6	8	29	54	9	10	28	57	6
Low enrollments in courses	3	10	82	6	3	11	77	9	2	10	82	7
Sample N	1672				1679				1478			

B. Results for Specific Factors that Affect Instruction

1. The belief that the particular subject is less important than others is more of a problem in social studies and science than it is in mathematics. For example, only 1 percent of principals in schools with grades K-3 indicated that this was a serious problem in mathematics, while 19 percent of this group rated the problem serious in social studies and 28 percent in science. Principals and state supervisors perceive this to be more of a problem in the lower grades in science but teacher responses do not seem to follow a similar pattern.

2. Compliance with Federal regulations is not considered a major problem in any subject/grade range category by any of the respondent groups.

3. Inadequate facilities appears to be only a minor problem in mathematics and social studies. Fewer than 15 percent of the district program questionnaire respondents, principals, or teachers at any grade level rated this a serious problem in either mathematics or social studies. The situation in science, on the other hand, is perceived as considerably more problematical. Twenty-six percent of science teachers rated inadequate facilties a serious problem, giving it a rank of 3 among the 18 possible problems. Similarly, principals and district program questionnaire respondents considered inadequate facilities to be one of the more important problems in science instruction.

4. Insufficient funds for purchasing equipment and supplies is considered a serious problem in all three subjects, with science teacher ratings giving this problem a rank of 2 and social studies and mathematics teachers rating it the third most serious problem. Principals, district program questionnaire respondents, and state supervisors generally considered this a major problem as well.

5. Lack of materials for individualizing instruction is considered a serious problem by 29 percent of the science and social studies teachers and 18 percent of the mathematics teachers, giving this problem a rank of 1 for science, 2 for social studies and 3 for mathematics. Principals, district program questionnaire respondents, and state supervisors also rated this one of the most serious problems in all 3 subject areas.

6. Out-of-date teaching materials cause a major problem in social studies at all grade levels and in science at the lower grades. Teachers of these subjects were significantly more likely than others to indicate that out-of-date teaching materials is a serious problem. The problem ranked fourth among all of the problems in social studies according to teachers.

7. Insufficient numbers of textbooks is not considered a serious problem by any of the respondent groups for any of the subject/grade range categories.

8. Lack of student interest in the particular subject appears to be more of a problem in grades 7-12 than in grades K-6 in each subject. This problem was rated "serious" in each subject by approximately 20 percent of the principals in schools with grades 7-9 and 10-12; similarly between 15 and 21 percent of the district program questionnaire respondents in the 3 subjects rated lack of student interest a serious problem. While fewer than 10 percent of the K-3 and 4-6 mathematics, science, and social studies teachers rated lack of student interest a serious problem, approximately 20 percent of the 7-9 and 10-12 science and social studies teachers and 30 percent of the 7-9 and 10-12 mathematics teachers considered it to be a serious problem in their schools. The differences between grades K-6 and 7-12 are statistically significant. Similarly, state supervisors in each subject rarely rated lack of student interest a serious problem for grades K-6 but frequently did so for grades 7-12.

9. Inadequate student reading ability causes a serious problem in grades 7-12 according to all of the groups queried. For example, 32 percent of social studies teachers considered this a serious problem; the severity increases with grade range, with percentages of social studies teachers rating inadequate student reading abilities a major problem ranging from 14 percent in K-3 to 49 percent in 10-12. Similarly, 24 percent of mathematics and science teachers rated this a serious problem, with percentages ranging from approximately 10 percent in K-3 to approximately 40 percent in 10-12. Principals, district program questionnaire respondents, and state supervisors ratings are quite similar to those of teachers, with each group considering inadequate student reading abilities a serious problem in grades 7-12.

10. Lack of teacher interest in the particular subject is considered a serious problem only in K-6 science, according to principals and district program questionnaire respondents. For example, approximately 20 percent of principals in schools with grades K-3 and those with grades 4-6 rated this a serious problem for science instruction in their schools. State supervisors consider lack of teacher interest a serious problem in both K-6 science and K-6 mathematics. Teachers, on the other hand, do not feel this is a serious problem. Overall, only 4 percent of the teachers in each subject area rated lack of teacher interest a serious problem in their schools. The percentages for K-3 and 4-6 science teachers were not significantly higher than for the other subject/grade range categories.

11. Teachers inadequately prepared to teach the particular subject, like lack of teacher interest in the subject, is considered to be a serious problem in K-6 science by principals, district program questionnaire respondents and by state supervisors. State supervisors of mathematics also consider this a serious problem in K-6 mathematics. However, teachers do not share these perceptions. Fewer than 10 percent of the science and mathematics teachers in grades K-3 or 4-6 rated inadequate teacher preparation a serious problem in their schools. Also, as was reported in Chapter 8, most elementary teachers perceive themselves as adequately qualified to teach science (82 percent) and mathematics (95 percent).

12. Lack of teacher planning time is considered a serious problem in grades K-6 in each of the 3 subject areas; according to teachers, it is significantly less of a problem in grades 7-12. Overall, the perceptions about the severity of this problem are quite similar among the various respondent groups. For example, approximately 20 percent of the principals in schools with grades K-3 and those in schools with grades 4-6 consider this a serious problem for science instruction; similarly, approximately 20 percent of the K-3 and 4-6 science teachers consider lack of teacher planning time a serious problem. However, district program questionnaire respondents were not as likely to consider lack of teacher planning time a serious problem.

13. Inadequate time to teach the particular subject is considered a serious problem in science and social studies in the lower grades, but not a serious problem in these subjects in the higher grades or in mathematics at any grade level. Teachers of K-3 social studies ranked this problem number

2 while K-3 science teachers ranked it third. As in the case of lack of teacher planning time, district program questionnaire respondents did not consider this a serious problem in any subject area or grade range.

14. Large class sizes are a serious problem according to teachers, with the percentages rating this problem increasing with increasing grade range. Secondary mathematics and social studies teachers were significantly more likely than others to rate large class sizes a serious problem. In general, principals and state and local district supervisors do not perceive class size to be as serious a problem for instruction as do teachers.

15. Difficulty in maintaining discipline was cited as a serious problem for instruction in the particular subject by fewer than 10 percent of the teachers, principals, and district program questionnaire respondents in each subject/grade range category. Similarly, most state supervisors did not consider maintaining discipline to be a serious problem for science, mathematics or social studies instruction in their states. These results seem to conflict with other evidence, e.g., about violence in schools. One possible explanation for the low ratings here is that the question was asked about instruction in a specific subject area.

16. Inadequate articulation of instruction across grade levels is the most serious problem in social studies and mathematics, and the fifth most serious problem in science according to state supervisors. Principals and district program questionnaire respondents also consider articulation to be a problem, but do not give it as high a ranking. Similarly, only approximately 10 percent of teachers rate inadequate articulation a serious problem, resulting in a ranking about midway among the 18 potential problems.

17. Inadequate diversity of electives is not rated as one of the more serious problems affecting instruction in science, mathematics, or social studies.

18. Low enrollments in courses ranks fourth among all problems in science and mathematics according to principals in schools with grades 10-12. State supervisors also rate this problem as serious in secondary mathematics and social studies but do not rank it nearly as high. Neither teachers nor district program questionnaire respondents rank low enrollment in courses as one of the most important problems.

Chapter 11

Reliability of the Survey Results

While the National Survey of Science, Mathematics, and Social Studies Education collected data from a number of sources (teachers, principals, superintendents, and state and local supervisors), teachers were considered to be the primary source of data. In order to estimate the stability of teacher responses over time (as a measure of the reliability of the survey data), a subsample of teachers was requested to complete a second questionnaire.

The 10 percent subsample of teachers to receive a "reliability questionnaire" was randomly selected at the time of the initial sampling of teachers. Each designated teacher was mailed the reliability questionnaire approximately two weeks after the receipt of his or her initial questionnaire at RTI. While there were 6 different reliability questionnaires (for K-6 and 7-12 science, mathematics, and social studies teachers), most of the items were common across all 6 questionnaires. The major difference was that elementary teachers were asked about the time spent teaching each of a number of subjects while secondary teachers were asked to indicate the title of a randomly selected class. The only difference between questionnaires of different subjects was use of the terms science, mathematics, and social studies in the stem of various questions. Whenever possible, the reliability questionnaire items were identical in content and format to the items used in the initial questionnaires. Copies of the elementary and secondary versions of the reliability questionnaires are included in Appendix F. The overall response rate was 65 percent. All reliability results were calculated without weights.

A number of the items are categorical in nature. For example, the teachers were asked to rate the utility of each of a number of sources of information about new developments in education. Response options were "not useful," "somewhat useful," and "very useful." Table 76 shows the reliability of each item (computed as the proportion of teachers who gave identical responses to this item in the original and reliability questionnaires). These agreement percentages are quite reasonable for categorical data of this nature.

Table 76

COMPARISON OF RESULTS FROM THE ORIGINAL AND RELIABILITY QUESTIONNAIRES--UTILITY OF SOURCES OF INFORMATION

Source	Percent of Agreement
Teachers	64
Principals	62
Local Subject Specialists/Coordinators	57
State Department Personnel	70
College Courses	64
Local In-Service Programs	58
Federally Sponsored Workshops	56
Sample N = 313	

Similarly, the teachers were asked about the frequency of use of each of a number of techniques in their teaching. The response options were never, less than once a month, at least once a month, at least once a week, and just about daily. The proportion of "hits" for each of these items is shown in Table 77, as well as the proportion of teachers whose reliability questionnaire response was in a category adjacent to their original response. Again, these results are quite reasonable.

Table 77

COMPARISON OF RESULTS FROM THE ORIGINAL AND RELIABILITY QUESTIONNAIRES--FREQUENCY OF USE OF INSTRUCTIONAL TECHNIQUES

	Percent Agreement		
Technique	Exact Match	Off by One Category	Total
Lecture	64	24	88
Discussion	62	26	88
Student reports or projects	57	27	84
Library work	65	22	87
Students working at chalkboard	59	33	92
Individual assignments	52	26	78
Students use hands-on, manipulative, or laboratory materials	46	37	83
Sample N = 313			

Another of the reliability coefficients, while higher than most, was quite disappointing. Eighty-two percent of the teachers gave the same response both times to the question "Are you using one or more published textbooks or programs for teaching social studies[1] to this class?" One would hope for a higher reliability for a question of this nature. Given the large number of discrepancies to the question about use of any textbook/program, it is not surprising that the percent agreement on the question of which textbook/ program is used most frequently was only 56 percent. In addition, it should be noted that the instructions for this question were quite different in the original and reliability questionnaires. Initially teachers were given a list of the most common textbooks in their subject and asked to write in the code number of each text used in their class as well as the one used most often. Only those texts not found on the list were to be written in and subsequently coded at RTI. In the reliability questionnaire all responses were written in and coded at RTI. These differing procedures may have affected the reliability of the item.

Secondary teachers were asked to indicate the title of a particular randomly selected class; only 77 percent of the teachers gave the same responses to the original and reliability questionnaires. Some of the non-matching was due to non-response in one or another of the questionnaires. It is also possible that there were some scheduling changes (e.g., in schools which offer quarter courses or minicourses) or that some teachers have different schedules in different days of the week (so that their nth science class of the day varies from day to day). Cases such as these could account for discrepancies in the responses to items involving the title of the course, whether or not a textbook/program is used, and the name of the textbook used in that class. However, one would not expect such cases to be numerous.

As might be expected, the highest reliability coefficient was obtained for a very factual question: "Have you attended any NSF-sponsored institutes, conferences or workshops?" Ninety-two percent of the respondents gave the same response in the original questionnaire and the reliability questionnaire. Many of the non-matching responses were due to non-response at one of the two measurement points.

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1 The word mathematics or science appeared instead of social studies as appropriate.

Elementary teachers were asked to indicate the number of minutes they spend teaching mathematics, science, social studies and reading. The reliability results were computed for teachers of self-contained classes (i.e., those who teach all 4 of these subjects to one class of students) using the formula for Pearson product-moment correlation coefficients. The results are quite impressive: the correlations between original responses and reliability questionnaire responses are .57 for mathematics, .65 for reading, .66 for social studies, and .82 for science. These reliability results are usually high for continuous variables of this nature.

APPENDIX A

Description of Reporting Variables

APPENDIX A

Description of Reporting Variables

1. Region

Each sample district, school, and teacher was classified as belonging to one of the four census regions as follows:

Northeast:	CT, ME, MA, NH, NJ, NY, PA, RI, VT
South:	AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV
North Central:	IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI
West:	AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY

2. Size of State

For many state-level analyses, responses were classified according to the total K-12 public school enrollment in that state. There are three levels in the reporting variable:

Size of State

Small -- Less than 400,000 students
Medium -- 400,000-1,000,000 students
Large -- More than 1,000,000 students

3. Type of Community

Each superintendent was asked to choose the description most appropriate to his or her district from among the following:

1. A rural or farming community
2. A small city or town of fewer than 50,000 people that is not a suburb of a larger place
3. A medium-sized city (50,000-100,000 people)
4. A suburb of a medium-sized city
5. A large city (100,000-500,000 people)
6. A suburb of a large city
7. A very large city (over 500,000 people)
8. A suburb of a very large city

Similarly, principals were asked to choose the one of those categories which best described the location of the school. The 8 response categories were collapsed into 4 type of community levels as follows:

Type of Community	
1	Rural
2	Small City
3,5,7	Urban
4,6,8	Suburban

District type of community was used as a reporting variable in analyses at the district level (i.e., analyses based on superintendent and district curriculum questionnaire responses); and school type of community was used for all school and teacher level analyses. However, when school type of community was unavailable (either because the principal did not return the questionnaire or because he or she did not answer this question), the district type of community was used as an approximation.

4. Size of District

Superintendents provided the total enrollment of their districts, and these figures were used to classify each district into one of three categories:

Size of District	
Small	Less than 3,000 students
Medium	3,000-12,000 students
Large	More than 12,000 students

When the total district enrollment was not provided by the superintendent (item or questionnaire non-response) the size of district categorization was obtained from sampling information provided by the Curriculum Information Center.

Table A.1 shows the breakdown of district enrollment categories by region and type of community. Note that nearly three-fourths of all school districts have total enrollments under 3,000. These small districts are more common in the North Central region of the United States and in rural communities.

Table A.1

DISTRICT ENROLLMENT, BY REGION AND TYPE OF COMMUNITY

	Percent of Districts			
	Less Than 3,000	3,000-12,000	More than 12,000	Missing
Nation (N = 356)	73	20	5	2
Region				
Northeast (N = 80)	58	36	6	0
South (N = 84)	66	22	6	6
North Central (N = 98)	86	13	2	0
West (N = 94)	68	24	8	0
Type of Community				
Rural (N = 77)	89	8	0	3
Small City (N = 86)	54	45	1	0
Urban (N = 87)	2	29	70	0
Suburban (N = 90)	47	37	16	0
Unknown (N = 16)	90	6	4	0

5. Grade Range

Most results for principals and teachers are reported by grade range--K-3, 4-6, 7-9 or 10-12. It is important to note that the definitions of these levels are not mutually exclusive. For example, all schools with any of the grades K-3 were eligible for selection into the K-3 sample. Many of these schools also contain one or more of the grades 4-6 and were also eligible for selection into the 4-6 sample. When principals answered questions about their schools they answered for the school as a whole and not for any particular grade range. Consequently, for many questions combining results across grade ranges may result in overestimates.

6. Size of School

Principals were asked to provide the total enrollment in their schools as well as the enrollment in each grade and the number of "special" students. Total enrollment was used to categorize each school as small, medium, or large, but as shown below the definitions were dependent on the sample grade range of the school.

K-3 and 4-6

Size of School

Small -- Less than 350 students
Medium -- 350-600 students
Large -- More than 600 students

7-9

Size of School

Small -- Less than 650 students
Medium -- 650-1100 students
Large -- More than 1100 students

10-12

Size of School

Small -- Less than 900 students
Medium -- 900-1600 students
Large -- More than 1600 students

If the principal omitted total enrollment but provided the enrollment by grade, total enrollment was obtained by summing the individual grade enrollments.

The average total school enrollment broken down by region, type of community and sample grade range is shown in Table A.2. As expected, average total enrollment increases with sample grade range. In addition, schools in the Northeast tend to have larger enrollments, as do those in urban and suburban types of community.

Table A.2

AVERAGE SCHOOL TOTAL ENROLLMENT, BY REGION, TYPE OF COMMUNITY, AND SAMPLE GRADE RANGE

	Sample Grade Range			
	K-3	4-6	7-9	10-12
Nation	386	422	609	828
Region				
Northeast	497	522	799	871
South	411	428	637	769
North	326	356	482	876
West	348	405	666	787
Type of Community				
Rural	323	364	455	516
Small City	383	415	664	738
Urban	401	484	779	1660
Suburban	458	446	648	1236
Unknown				
Sample N	299	277	284	260

7. Percent of Students in Free Lunch Program

Each principal was asked to indicate the number of students in the school who qualify for the Federal free lunch program. Total enrollment was then used in conjunction with this figure to classify each school into one of the following categories:

Students in Free Lunch Program

Less than 10%
10-30%
More than 30%

8. Per Pupil Expenditure

Each superintendent was asked to indicate the average per pupil expenditure in that district during the 1975-76 school year, including all annual operating expenses but not including capital outlay. Districts which supplied this information were classified into the following categories:

Per Pupil Expenditure

Low -- Less than $1,050
Medium -- $1,050-$1,350
High -- More than $1,350

9. Teacher/District Supervisor Ratio

The district curriculum questionnaire for each subject/grade range category (K-6 and 7-12 science, mathematics, and social studies) asked for the number of teachers in that category in the district as well as the number of full-time equivalent persons available for district-wide supervision/coordination of instruction in that subject and grade range. These responses were used to calculate the teacher/supervisor ratio for each category; this reporting variable has 3 levels:

Teacher/District Supervisor Ratio

1. No supervisors
2. Greater than 50:1
3. 50:1 or less

10. Subject

Results are generally reported for 3 subject areas-science, mathematics, and social studies. It is important to note that many teachers teach more than one of these subjects; this is especially true at the elementary level.

For the purposes of this survey a sample science teacher was defined as any teacher who was randomly selected to answer questions about science. If a teacher taught 4 science classes and 1 math class he or she was 4 times as likely to be selected for science. In other words, most teachers who teach one subject predominantly would have been selected to answer questions about that subject. However, some teachers would have been selected to answer questions about their "minor" teaching area.

Tables A.3, A.4, A.5, A.6 and A.7 show the breakdown of the samples of teachers, principals, district program questionnaire respondents, superintendents and state supervisors by the reporting variables relevant to that sample.

Table A.3

TEACHER SAMPLE SIZES BY CLASSIFICATION VARIABLES

	MATHEMATICS				SCIENCE				SOCIAL STUDIES				TOTAL			
TOTAL	297	277	550	548	287	271	535	586	254	281	453	490	838	829	1538	1624
	K-3	4-6	7-9	10-12	K-3	4-6	7-9	10-12	K-3	4-6	7-9	10-12	K-3	4-6	7-9	10-12
Region[1]																
Northeast	48	43	121	113	73	63	119	133	51	58	96	114	172	164	336	360
South	109	110	182	199	89	86	187	203	90	100	158	166	288	296	527	568
North Central	81	82	151	154	72	76	143	150	73	79	130	134	226	237	424	438
West	59	42	96	82	53	46	86	190	40	44	69	76	152	132	251	258
Per Pupil Expenditure																
Low	84	92	146	145	80	88	136	139	73	88	132	114	237	268	414	398
Medium	93	77	184	174	81	76	174	191	84	86	150	158	258	239	508	523
High	71	55	143	135	71	55	136	147	51	56	113	127	193	166	392	409
Unknown	49	53	77	94	55	52	89	109	46	51	58	91	150	156	224	294
Size of District																
Small	76	60	118	104	75	78	119	114	68	65	93	109	219	203	330	327
Medium	101	99	211	222	112	102	198	219	81	112	178	184	294	313	587	625
Large	105	107	214	205	91	80	209	226	87	95	174	175	283	282	597	606
Unknown	15	11	7	17	9	11	9	27	18	9	8	22	42	31	24	66
Students in Free Lunch Program																
Less than 10%	72	52	94	150	80	67	99	164	73	64	81	129	225	183	274	443
10-30%	66	80	178	133	76	69	176	136	61	69	150	121	203	218	504	390
More than 30%	84	67	122	94	72	78	108	91	62	89	88	83	218	234	318	268
Unknown	75	78	156	171	59	57	152	195	58	59	134	157	192	194	442	523
Type of Community																
Rural	74	62	111	108	66	83	105	110	59	72	88	100	199	217	304	318
Small City	79	68	143	142	83	77	135	151	85	78	123	125	247	223	401	418
Urban	67	65	141	154	63	56	136	165	54	65	114	128	184	186	391	447
Suburban	74	66	140	121	69	48	144	135	54	57	117	114	197	171	401	370
Unknown	3	16	15	23	6	7	15	25	2	9	11	23	11	32	41	71
Principal Attended NSF Institute																
Yes	23	28	87	121	39	28	88	123	27	27	72	109	89	83	247	353
No	232	191	365	319	210	204	349	341	194	204	303	284	636	599	1017	944
Unknown	42	58	98	108	38	39	98	122	33	50	78	97	113	147	274	327
School Size																
Small	73	59	115	116	74	56	110	130	75	65	99	116	222	180	324	362
Medium	107	93	173	172	93	99	172	171	87	99	147	146	287	291	492	489
Large	73	68	160	144	78	74	151	159	63	72	126	126	214	214	437	429
Unknown	44	57	102	116	42	42	102	126	29	45	81	102	115	144	285	344

1 Refer to Appendix A for a description of these reporting variables and the sample size in each reporting group.

Table A.4

PRINCIPAL SAMPLE SIZES BY CLASSIFICATION VARIABLES

	Total	K-3 (317)	4-6 (292)	7-9 (298)	10-12 (270)
Region					
Northeast	229	60	52	57	60
South	405	111	105	102	87
North Central	335	87	82	89	77
West	208	59	53	50	46
Per Pupil Expenditure					
Low	313	86	87	74	66
Medium	372	95	89	102	86
High	281	72	60	77	72
Unknown	211	64	56	45	46
Size of District					
Small	263	68	62	67	66
Medium	423	115	111	107	90
Large	446	114	109	119	104
Unknown	45	20	10	5	10
Students in Free Lunch Program					
Less than 10%	318	84	75	64	95
10% - 30%	351	86	81	109	75
More than 30%	325	101	98	77	49
Unknown	183	46	38	48	51
Type of Community					
Rural	268	72	71	67	58
Small City	320	90	84	76	70
Urban	296	76	68	78	74
Suburban	289	78	67	77	67
Unknown	4	1	2	0	1
Principal Attendance at NSF Institutes					
Yes	201	38	36	57	70
No	930	265	244	229	192
Unknown	46	14	12	12	8
Size of School					
Small	347	91	81	89	86
Medium	426	121	115	103	87
Large	347	87	81	92	87
Unknown	57	18	15	14	10

Table A.5

DISTRICT PROGRAM QUESTIONNAIRE RESPONDENT
SAMPLE SIZES BY CLASSIFICATION VARIABLES

	Mathematics		Science		Social Studies		TOTAL	
	K-6	7-12	K-6	7-12	K-6	7-12	K-6	7-12
Region								
Northeast	80	79	78	81	67	73	225	233
South	84	81	84	77	78	78	246	236
North Central	87	87	89	91	87	79	263	257
West	76	74	75	69	71	68	222	211
Per Pupil Expenditure								
Low	88	90	92	86	88	84	268	260
Medium	96	87	93	92	85	87	274	266
High	83	89	82	84	77	81	242	254
Unknown	60	55	59	56	53	46	172	157
Size of District								
Small	113	109	112	107	110	106	335	322
Medium	107	105	110	106	101	96	318	307
Large	101	101	100	101	89	92	290	294
Unknown	6	6	4	4	3	4	13	14
Type of Community								
Rural	58	60	57	58	53	55	168	173
Small City	64	66	67	65	63	64	194	195
Urban	71	71	71	70	64	66	206	207
Suburban	76	70	75	69	72	69	223	208
Unknown	58	54	56	56	51	44	165	154
TOTAL	327	321	326	318	303	298	956	937

Table A.6

SUPERINTENDENT SAMPLE SIZES BY CLASSIFICATION VARIABLES

Region	
Northeast	80
South	84
North Central	98
West	94
Type of Community	
Rural	77
Small City	86
Urban	87
Suburban	90
Unknown	16
Per Pupil Expenditure	
Low	113
Medium	111
High	108
Unknown	24
Size of District	
Small	132
Medium	113
Large	109
Unknown	2
TOTAL	356

Table A.7

STATE SUPERVISOR AND STATE SAMPLE SIZES
BY CLASSIFICATION VARIABLES

A. State Supervisors

	Mathematics	Science	Social Studies	Total
Region				
Northeast	11	12	11	34
South	18	24	28	70
North Central	11	12	12	35
West	10	13	11	34
Size of State				
Small	14	16	15	45
Medium	18	20	23	61
Large	18	25	24	67
TOTAL	50	61	62	173

B. States

	Mathematics	Science	Social Studies	Total
Region				
Northeast	7	8	8	23
South	15	16	16	47
North Central	11	12	12	35
West	10	13	11	34
Size of State				
Small	14	16	15	45
Medium	16	18	17	51
Large	13	15	15	43
TOTAL	43	49	47	139

APPENDIX B

Additional Results Tables

APPENDIX B

Additional Results Tables

APPENDIX B (Continued)

APPENDIX B (Continued)

Table B.1

PERCENT OF STATE SUPERVISOR TIME SPENT ON SELECTED ACTIVITIES, BY SUBJECT

Activity	Mathematics					Science					Social Studies				
	None	Small Amount	Moderate Amount	Large Amount	Missing	None	Small Amount	Moderate Amount	Large Amount	Missing	None	Small Amount	Moderate Amount	Large Amount	Missing
Administrative duties	11	52	27	2	9	21	51	20	5	3	22	54	19	2	3
Planning/developing curricula	0	10	66	16	9	5	18	59	13	5	7	11	45	34	3
Locating/evaluating instructional materials	8	46	35	4	6	3	47	36	10	3	11	33	36	17	3
Evaluating district programs	4	33	46	8	9	5	34	48	10	3	10	26	48	14	2
Writing proposals	12	69	9	0	11	21	61	13	2	3	18	58	18	0	6
Coordinating in-service programs	0	10	51	32	6	0	31	36	30	3	9	18	24	44	6
Working with other state supervisors	5	52	32	2	9	7	49	38	3	3	7	53	32	5	3
Working with district supervisors/department heads	4	20	58	10	9	2	23	53	20	3	1	26	52	18	3
Working with college personnel	6	50	31	4	9	5	39	41	12	3	3	61	30	2	5
Attending professional meetings	2	56	35	0	6	5	54	31	7	3	2	50	37	7	5
Sample N			50					61					62		

Table B.2

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS SUPERVISING EACH SUBJECT, BY SUBJECT AND GRADE RANGE[1/]

Subject/ Grade Range of Respondent	Subject Supervised				
	Mathematics	Science	Social Studies	Reading/Language Arts/English	Other Subjects
Mathematics					
K-6 (N=264)	93	72	68	71	63
7-12 (N=246)	92	69	62	60	59
Science					
K-6 (N=266)	75	92	72	75	64
7-12 (N=241)	70	95	64	62	61
Social Studies					
K-6 (N=237)	79	78	90	82	71
7-12 (N=214)	65	67	85	62	67

1/ Respondents who violated the routing pattern, i.e., said they spend no time on supervision and then circled the subjects they supervise, were not included in these analyses.

Table B.3

AMOUNT OF TIME DISTRICT SUPERVISORS SPEND ON EACH ACTIVITY, BY SUBJECT AND GRADE RANGE
(Percent of Respondents)

Activity	A. Mathematics									
	K-6					7-12				
	None	Small Amount	Moderate Amount	Large Amount	Missing	None	Small Amount	Moderate Amount	Large Amount	Missing
Administrative duties such as scheduling, budgeting, filling out forms, ordering supplies, etc.	3	44	34	18	1	8	40	32	19	1
Locating and evaluating instructional materials	0	29	53	17	1	2	36	47	14	2
Disseminating information about curriculum materials	0	38	43	17	3	1	39	48	11	2
Planning and/or developing curricula	1	25	43	29	2	0	23	50	23	3
Obrerving classrooms	15	39	24	20	3	15	36	25	15	9
Hiring teachers	33	35	24	5	4	30	30	26	6	8
Evaluating teachers	27	29	26	14	5	30	28	18	15	9
Working with individual teachers outside the classroom situation	4	42	44	7	3	3	54	31	8	4
Providing/coordinating in-service programs	6	37	39	15	3	6	40	38	12	5
Attending professional meetings	1	62	29	6	3	1	49	37	8	5
Sample N[1/]			264					246		

1/ Respondents who violated the routing pattern, i.e., said they spend no time on supervision and then circled the subjects they supervise, were not included in these analyses.

TABLE B.3 (Continued)

AMOUNT OF TIME DISTRICT SUPERVISORS SPEND ON EACH ACTIVITY, BY SUBJECT AND GRADE RANGE
(Percent of Respondents)

Activity	B. Science									
	K-6					7-12				
	None	Small Amount	Moderate Amount	Large Amount	Missing	None	Small Amount	Moderate Amount	Large Amount	Missing
Administrative duties such as scheduling, budgeting, filling out forms, ordering supplies, etc.	3	46	33	18	0	7	41	32	19	1
Locating and evaluating instructional materials	1	35	46	18	1	1	41	42	14	2
Disseminating information about curriculum materials	0	39	42	17	3	0	45	45	10	1
Planning and/or developing curricula	1	28	37	32	3	3	24	43	28	3
Observing classrooms	15	37	26	18	3	19	35	[illegible]	16	4
Hiring teachers	33	32	26	6	3	32	33	26	5	4
Evaluating teachers	26	31	26	14	4	34	30	20	13	4
Working with individual teachers outside the classroom situation	3	44	43	7	4	6	52	31	7	4
Providing/coordinating in-service programs	7	31	45	15	3	6	44	36	11	4
Attending professional meetings	1	54	37	6	3	3	50	39	3	4
			266					241		

TABLE B.3 (Continued)

AMOUNT OF TIME DISTRICT SUPERVISORS SPEND ON EACH ACTIVITY, BY SUBJECT AND GRADE RANGE
(Percent of Respondents)

Activity	C. Social Studies									
	K-6					7-12				
	None	Small Amount	Moderate Amount	Large Amount	Missing	None	Small Amount	Moderate Amount	Large Amount	Missing
Administrative duties such as scheduling, budgeting, filling out forms, ordering supplies, etc.	6	44	31	20	0	7	35	36	20	1
Locating and evaluating instructional materials	0	31	48	20	0	9	37	38	15	1
Disseminating information about curriculum materials	1	31	45	18	5	3	42	42	13	0
Planning and/or developing curricula	1	25	38	34	3	6	29	36	25	4
Observing classrooms	13	36	26	21	4	22	34	25	15	4
Hiring teachers	28	34	29	6	4	40	28	25	4	3
Evaluating teachers	22	31	24	18	5	36	29	19	13	4
Working with individual teachers outside the classroom situation	4	34	48	9	6	12	42	34	9	4
Providing/coordinating in-service programs	7	32	42	16	3	12	41	32	11	4
Attending professional meetings	2	54	35	7	3	4	53	34	5	4
			237					214		

Table B.4

PERCENT OF ELEMENTARY TEACHERS SPENDING MORE TIME, THE SAME AMOUNT OF TIME, AND LESS TIME ON THE SUBJECT COMPARED TO THREE YEARS AGO, BY SUBJECT AND GRADE RANGE[1/]

Amount of Time	Mathematics			Science			Social Studies		
	K-3	4-6	Total	K-3	4-6	Total	K-3	4-6	Total
More Time Spent Now	26	16	22	22	10	17	28	13	22
About the Same	67	73	70	52	72	60	46	73	57
Less Time Spent Now	2	6	3	14	13	14	15	8	12
Unknown	5	6	6	12	5	9	11	6	9
Sample N	208	203	411	202	195	397	187	201	388

1/ Teachers who indicated they did not teach a class of the same grade level three years ago were not included in these analyses.

Table B.5

PERCENT OF CLASSES OF VARIOUS ABILITY MAKEUPS, BY SUBJECT AND GRADE RANGE

Grade Range	Mathematics				Science				Social Studies			
	High Ability	Low Ability	Average or Mixed Abilities	Missing	High Ability	Low Ability	Average or Mixed Abilities	Missing	High Ability	Low Ability	Average or Mixed Abilities	Missing
K-3	10	18	67	5	14	11	65	11	7	7	77	9
4-6	18	16	60	7	4	11	82	4	6	9	79	6
7-9	22	21	57	0	13	17	69	2	14	17	68	1
10-12	36	11	51	1	32	14	51	3	13	11	75	2
Sample N	1672				1679				1478			

Table B.6

PERCENT OF STATE SUPERVISORS PARTICIPATING IN EACH TYPE OF NSF-SPONSORED ACTIVITY, BY SUBJECT[1/]

Activity	Mathematics	Science	Social Studies
Academic Year Institutes	25	30	2
Administrators Conferences	20	30	15
Cooperative College-School Science Programs	8	21	11
In-service Institutes	43	48	23
Resource Personnel Workshops	2	16	27
Summer Institutes	67	69	32
Leadership Development Projects	12	30	17
School System Projects	6	10	5
Teacher Centered Projects	4	12	12
Chautauqua Short Courses	0	3	0
Sample N	50	61	62

1/ Respondents who violated the routing pattern, i.e., said they had not attended any NSF-sponsored activities and then circled one or more activities, were not counted as participants.

Table B.7

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS PARTICIPATING IN EACH TYPE OF NSF-SPONSORED ACTIVITY, BY SUBJECT AND GRADE RANGE 1/

Activity	Mathematics K-6	Mathematics 7-12	Science K-6	Science 7-12	Social Studies K-6	Social Studies 7-12
Academic Year Institutes	2	14	8	8	4	1
Administrators Conferences	2	2	2	3	3	2
Cooperative College-School Science Programs	2	4	8	8	2	6
In-service Institutes	5	10	10	18	5	8
Resource Personnel Workshops	2	2	1	3	1	1
Summer Institutes	12	33	18	40	9	14
Leadership Development Projects	4	2	4	4	3	2
School System Projects	2	3	5	2	4	3
Teacher Centered Projects	2	1	4	6	2	3
Chautauqua Short Courses	0	0	0	0	0	0
Sample N	327	321	326	318	303	298

1/ Respondents who violated the routing pattern, i.e., said they had not attended any NSF-sponsored activities and then circled one or more activities, were not counted as participants.

Table B.8

PERCENT OF PRINCIPALS PARTICIPATING IN EACH TYPE OF NSF-SPONSORED ACTIVITY, BY GRADE RANGE

Activity	K-3	4-6	7-9	10-12
Academic Year Institutes	1	1	1	3
Administrators Conferences ...	3	1	3	5
Cooperative College-School Science Programs	2	1	2	2
In-Service Institutes	4	2	5	8
Resource Personnel Workshops ..	2	2	2	3
Summer Institutes	7	7	10	20
Leadership Development Projects	3	1	1	2
School System Projects	6	2	2	3
Teacher Centered Projects	3	1	2	1
Chautauqua Short Courses	0	0	0	0
Sample N[1/]	317	292	298	270

1/ Respondents who violated the routing pattern (i.e., said they had not attended any NSF-sponsored activities and then circled one or more activities) were not counted as participants.

Table B.9

PERCENT OF SCIENCE, MATHEMATICS, AND SOCIAL STUDIES TEACHERS PARTICIPATING IN EACH TYPE OF NSF-SPONSORED ACTIVITY, BY GRADE RANGE[1/]

Activity	K-3	4-6	7-9	10-12	Total
Academic Year Institutes	0	1	4	7	2
Administrators Conferences	0	0	0	0	0
Cooperative College-School Science Programs	1	1	2	2	1
In-Service Institutes	3	4	7	11	5
Resource Personnel Workshops	2	2	1	1	1
Summer Institutes	1	5	17	22	9
Leadership Development Projects	0	2	1	0	1
School System Projects	1	2	1	1	1
Teacher Centered Projects	2	2	2	3	2
Chautauqua Short Courses	0	0	0	0	0
Sample N	838	829	1538	1624	4829

1/ Respondents who violated the routing pattern, i.e. said they had not attended any NSF-sponsored activities and then circled one or more activities, were not counted as participants.

Table B.10

PERCENT OF K-12 TEACHERS PARTICIPATING IN EACH TYPE OF NSF-SPONSORED ACTIVITY, BY SUBJECT[1/]

Activity	Mathematics	Science	Social Studies	Total
Academic Year Institutes	3	3	1	2
Administrators Conference	0	0	0	0
Cooperative College-School Science Programs	2	2	1	1
In-Service Institutes	6	7	3	5
Resource Personnel Workshops	2	1	1	1
Summer Institutes	9	15	3	9
Leadership Development Projects	0	2	0	1
School System Projects	1	1	2	1
Teacher Centered Projects	3	3	1	2
Chautauqua Short Courses	0	0	0	0
Sample N	1672	1679	1478	4829

1/ Respondents who violated the routing pattern, i.e. said they had not attended any NSF-sponsored activities and then circled one or more activities, were not counted as participants.

Table B.11

PERCENT OF STATE SUPERVISORS RECEIVING INFORMATION ABOUT A SPECIFIC SET OF CURRICULUM MATERIALS FROM EACH SOURCE, BY SUBJECT

Source	Subject		
	Mathematics	Science	Social Studies
Teachers	51	54	32
Principals	16	24	16
Local Subject Specialists/ Coordinators	64	46	44
State Department Personnel	59	49	35
College Courses	35	41	30
Local In-Service Programs	34	32	26
Federally Sponsored Workshops	56	65	65
Teacher Union Meetings	0	3	3
Meetings of Professional Organizations	80	67	80
Journals and Other Professional Publications	78	76	77
Publishers and Sales Representatives	55	84	74
Project Authors	42	47	72
Involvement in Project Development	27	36	30
Sample N[1/]	26	37	31

1/ These are the Sample N's of state supervisors who specified the one set of curriculum materials they had spent the most time and effort disseminating.

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Table B.12

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS RECEIVING INFORMATION ABOUT A SPECIFIC SET OF CURRICULUM MATERIALS FROM EACH SOURCE, BY SUBJECT AND GRADE RANGE

Source	Mathematics		Science		Social Studies	
	K-6	7-12	K-6	7-12	K-6	7-12
Teachers	50	60	65	62	61	52
Principals	42	21	51	24	39	24
Local Subject Specialists/ Coordinators	12	15	27	24	13	20
State Department Personnel	15	15	34	27	13	17
College Courses	43	55	49	49	43	23
Local In-Service Programs	36	18	43	26	22	17
Federally Sponsored Workshops	12	17	19	31	6	9
Teacher Union Meetings	0	0	1	4	0	2
Meetings of Professional Organizations	30	41	29	44	23	38
Journals and Other Professional Publications	60	61	58	61	42	60
Publishers and Sales Representatives	49	47	55	63	56	69
Project Authors	11	7	7	8	4	11
Involvement in Project Development	10	9	18	12	4	12
Sample N[1/]	248	216	253	243	188	178

1/ These are the sample N's for respondents who specified the <u>one</u> set of curriculum materials with which they are most familiar. Respondents who had not seen any of the materials were instructed to skip this question.

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Table B.13

PERCENT OF TEACHERS RECEIVING INFORMATION ABOUT A SPECIFIC SET OF CURRICULUM MATERIALS FROM EACH SOURCE, BY GRADE RANGE AND SUBJECT

Source	K-3				4-6				7-9				10-12			
	Math	Science	Social Studies	Total	Math	Science	Social Studies	Total	Math	Science	Social Studies	Total	Math	Science	Social Studies	Total
Teachers	60	66	67	64	62	66	54	61	52	66	48	57	54	62	55	57
Principals	28	33	40	33	38	32	35	35	11	12	15	12	8	8	12	9
Local Subject Specialists/Coordinators	21	34	30	28	39	28	24	34	29	26	20	26	15	18	25	20
State Department Personnel	1	2	3	2	2	1	2	2	4	4	8	5	4	3	6	4
College Courses	43	61	40	48	35	52	43	43	56	53	50	54	57	54	33	47
Local In-Service Programs	23	39	31	31	31	42	21	32	22	18	10	18	16	19	10	15
Federally Sponsored Workshops	6	1	2	3	10	16	2	10	16	23	3	16	14	19	5	13
Teacher Union Meetings	0	0	0	0	1	1	1	1	0	1	0	1	1	2	1	1
Meetings of Professional Organizations	3	5	8	5	8	20	6	12	20	11	9	14	18	19	10	16
Journals and Other Professional Publications	24	21	15	21	23	29	30	27	33	28	28	30	38	27	34	33
Publishers and Sales Representatives	15	21	26	20	15	30	26	24	16	37	33	28	17	40	41	34
Project Authors	3	5	2	3	3	5	4	4	6	5	6	6	4	19	3	9
Involvement in Project Development	3	5	2	4	5	5	8	6	3	7	6	5	3	10	7	7
Sample N	126	141	119	386	132	129	111	372	348	415	207	970	390	516	307	1213

1/ Percentages are based on the teachers who specified the one set of curriculum materials with which they were most familiar.

Table B.14

STATE DISSEMINATION OF INFORMATION ABOUT CURRICULUM MATERIALS

A. MATHEMATICS

Mathematics Curriculum Materials	Percent of States		
	Have Disseminated Information	Have Not Disseminated Information	Unknown 1/
Comprehensive School Mathematics Program--Elementary Component (CSMP)....	28	47	25
Comprehensive School Mathematics Program--Elements of Mathematics (CSMP-EM)	23	51	25
Developing Mathematical Processes (DMP)	44	31	25
Educational Research Council Mathematics Program (formerly Greater Cleveland Mathematics Program)	26	48	25
Huntington II	11	53	25
Individually Prescribed Instruction (IPI)	42	32	25
Infinity Factory	26	49	25
Madison Mathematics Project (MAD-M)	33	42	25
MINNEMAST (Minnesota School Mathematics and Science Teaching (MINNEMAST).	34	41	25
Modern Coordinate Geometry	12	62	25
School Mathematics Study Group (SMSG)	54	20	25
Search for Understanding Computation (SUC) 2/	0	75	25
Secondary School Mathematics Curriculum Improvement Study (SSMCIS)	34	41	25
Stretchers and Shrinkers/Motion Geometry (University of Illinois Committee on School Mathematics)	45	30	25
Technology-People-Environment (Engineering Concepts Curriculum Project-ECCP)	15	60	25
The Man Made World (Engineering Concepts Curriculum Project-ECCP)	33	42	25
Unified Science and Mathematics for Elementary Schools (USMES)	40	35	25

Sample N = 43

1/ These state supervisors (N = 11) did not answer the question; typically they wrote that the state did not disseminate information about particular projects but would help educators in their state obtain information when requested to do so.

2/ This is a fictitious curriculum material; it was included as a validity check.

Table B.14 (continued)

STATE DISSEMINATION OF INFORMATION ABOUT CURRICULUM MATERIALS

B. SCIENCE

Science Curriculum Materials	Percent of States: Have Disseminated Information	Have Not Disseminated Information	Unknown 1/
BSCS Elementary School Science Project	64	30	6
Conceptually Oriented Program in Elementary Science (COPES)	59	35	6
Elementary Science Study (ESS)	82	12	6
Individualized Science (IS)	43	51	6
MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	33	62	6
Science — A Process Approach (SAPA)	80	15	6
Science Curriculum Improvement Study (SCIS)	86	8	6
Unified Science and Mathematics for Elementary Schools (USMES)	53	41	6
Biological Science: An Ecological Approach (BSCS Green)	88	6	6
Biological Science: An Inquiry into Life (BSCS Yellow)	80	14	6
Biological Science: Molecules to Man (BSCS Blue)	78	16	6
Biological Science: Interaction of Experiments and Ideas	43	51	6
Biological Science: Me Now	35	59	6
Biological Science: Me and My Environment	39	55	6
Biological Science: Patterns and Processes	68	26	6
Biomedical Interdisciplinary Curriculum Project	8	86	6
Chemical Bond Approach (CBA)	46	49	6
Chemical Education Materials Study (CHEM Study)	76	18	6
Environmental Studies for Urban Youth (ESSENCE)	20	74	6
Human Sciences Program (BSCS)	37	58	6
Huntington II	17	78	6
Individualized Science Instructional Systems (ISIS)	86	8	6
Introductory Physical Science (IPS)	74	20	6
Investigating the Earth — Earth Science Curriculum Project (ESCP)	76	18	6
Outdoor Biology Instructional Strategies (OBIS)	62	33	6
Physical Science II (PSII)	46	49	6
Physical Science Study Committee Physics (PSSC)	72	22	6
Probing the Natural World — Intermediate Science Curriculum Study (ISCS)	85	10	6
Project Physics Course (Harvard)	76	18	6
Science Explorations for the Future 2/	2	92	6
Technology-People-Environment (Engineering Concepts Curriculum Project-ECCP)	46	49	6
The Man Made World (Engineering Concepts Curriculum Project-ECCP)	58	36	6
Time, Space, and Matter — Secondary School Science Project	49	45	6
University of Illinois Astronomy Program	10	84	6

Sample N = 49

1/ These state supervisors (N = 3) did not answer the question; typically they wrote that the state did not disseminate information about particular projects but would help educators in their state obtain information when requested to do so.

2/ This is a fictitious curriculum material; it was included as a validity check.

Table B.14 (continued)

STATE DISSEMINATION OF INFORMATION ABOUT CURRICULUM MATERIALS

C. SOCIAL STUDIES

Social Studies Curriculum Materials	Percent of States: Have Disseminated Information	Have Not Disseminated Information	Unknown 1/
American Political Behavior	72	2	25
Biomedical Interdisciplinary Curriculum Project	4	71	25
Black in White America	19	56	25
Carnegie-Mellon Social Studies Curriculum Project (Holt Social Studies Curriculum)	66	9	25
Comparing Political Experiences	40	34	25
Concepts and Inquiry (Educational Research Council)	51	24	25
Economics in Society (ECON 12)	49	25	25
Elementary School Economics I, II (University of Chicago)	15	59	25
Elementary Social Science Education Program Laboratory Units (SRA)	47	27	25
Environmental Studies for Urban Youth (ESSENCE)	8	66	25
Exploring Childhood	24	51	25
Exploring Human Nature	24	51	26
Family of Man (Minnesota Project Social Studies)	44	31	25
Georgia Anthropology Curriculum Project	45	30	25
Geography in an Urban Age--High School Geography Project	61	13	25
Human Behavior Curriculum Project	6	68	25
Human Sciences Program (BSCS)	8	66	25
Huntington II	2	73	25
Man: A Course of Study (MACOS)	64	10	25
Materials and Activities for Teachers and Children (MATCH)	31	43	25
Our Working World	60	15	25
Patterns in Human History--Anthropology Curriculum Study Project	47	27	25
People and Technology	26	49	25
Project Africa	27	47	25
Social Studies Dynamics Program 2/	5	70	25
Sociological Resources for the Social Studies (Episodes in Social Inquiry Ser s, Inquiries in Sociology, Readings in Sociology)	57	18	25
Taba Program in Social Science	71	4	25

Sample N = 47

1/ Theses state supervisors (N = 12) did not answer the question; typically they wrote that the state did not disseminate information about particular projects but would help educators in their state obtain information when requested to do so.

2/ This is a fictitious curriculum materials; it was included as a validity check.

Table B.15

PERCENT OF STATE SUPERVISORS PERFORMING EACH DISSEMINATION ACTIVITY FOR A SPECIFIC SET OF CURRICULUM MATERIALS, BY SUBJECT

Dissemination Activity	Mathematics	Science	Social Studies
Conducted an in-service meeting or workshop about the materials	61	89	73
Supplied sample materials for consideration	83	76	84
Arranged for a consultant or sales person to meet with instructional staff to discuss the materials	54	81	78
Sent a written description of the materials to instructional staff	66	81	78
Discussed the materials with instructional staff	84	95	96
Arranged for instructional staff to visit a school to see the materials in use	52	73	55
Arranged for instructional staff to attend a presentation or institute to learn about the materials	51	65	82
Helped instructional staff try the materials on a pilot basis	46	73	64
Sample N[1/]	26	37	31

1/ These are the Sample N's of supervisors who specified the one set of curriculum materials they had spent the most time and effort disseminating.

Table B.16.

PERCENT OF DISTRICTS USING SELECTED CURRICULUM MATERIALS IN EACH SUBJECT AREA AND GRADE RANGE

K-6 Mathematics	During 1976-1977	Prior to 1976-1977
Comprehensive School Mathematics Program--Elementary Component (CSMP)	0	0
Developing Mathematical Processes (DMP)	1	3
Educational Research Council Mathematics Program (formerly Greater Cleveland Mathematics Program)	0	8
Individualized Mathematics System (IMS)	4	11
Individually Prescribed Instruction (IPI)	2	3
Infinity Factory	1	0
Madison Mathematics Project (MAD-M)	1	0
MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	0	3
School Mathematics Study Group (SMSG)	0	18
Search for Understanding Computation (SUC)[1/]	0	0
Unified Science and Mathematics for Elementary Schools (USMES)	1	0

Sample N = 327

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.16 (Continued)

PERCENT OF DISTRICTS USING SELECTED CURRICULUM MATERIALS

7-12 Mathematics	During 1976-1977	Prior to 1976-1977
Comprehensive School Mathematics Program -- Elements of Mathematics (CSMP-EM)	0	0
Huntington II	1	1
Individualized Mathematics System (IMS)	2	4
Madison Mathematics Project (MAD-M)	0	2
Modern Coordiate Geometry	3	3
School Mathematics Study Group (SMSG)	2	18
Search for Understanding Computation (SUC)1/	0	0
Secondary School Mathematics Curriculum Improvement Study (SSMCIS)	1	3
Stretchers and Shrinkers/Motion Geometry (University of Illinois Committee on School Mathematics) ..	0	7
Technology-People-Environment (Engineering Concepts Curriculum Project - ECCP)	0	0
The Man Made World (Engineering Concepts Curriculum Project (ECCP)	1	2
Sample N = 321		

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.16 (Continued)

PERCENT OF DISTRICTS USING SELECTED CURRICULUM MATERIALS

K-6 Science	During 1976-1977	Prior to 1976-1977
BSCS Elementary School Science Project	1	2
Conceptually Oriented Program in Elementary Science (COPES)	1	1
Elementary Science Study (ESS)	15	13
Environmental Studies for Urban Youth (ESSENCE)	0	0
Human Sciences Program (BSCS)	0	2
Individualized Science (IS)	1	2
MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	0	1
Science--A Process Approach (SAPA)	9	10
Science Curriculum Improvement Study (SCIS)	8	8
Science Explorations for the Future 1/	0	0
Unified Science and Mathematics for Elementary Schools (USMES)	1	1
University of Illinois Astronomy Program	3	0

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.16 (Continued)

PERCENT OF DISTRICTS USING SELECTED CURRICULUM MATERIALS IN EACH SUBJECT AND GRADE RANGE

7-12 Science	During 1976-1977	Prior to 1976-1977
Biological Science: An Ecological Approach (BSCS Green)	19	30
Biological Science: An Inquiry into Life (BSCS Yellow)	16	31
Biological Science: Molecules to Man (BSCS Blue)	8	11
Biological Science: Interaction of Experiments and Ideas	3	7
Biological Science: Me Now	0	0
Biological Science: Me and My Environment	1	1
Biological Science: Patterns and Processes	6	16
Biomedical Interdisciplinary Curriculum Project	0	0
Chemical Bond Approach (CBA)	2	3
Chemical Education Materials Study (CHEM Study)	15	19
Environmental Studies for Urban Youth (ESSENCE)	0	1
Human Sciences Program (BSCS)	2	2
Huntington II	0	0
Individualized Science Instructional Systems (ISIS)	7	3
Introductory Physical Science (IPS)	25	21
Investigating the Earth--Earth Science Curriculum Project (ESCP)	10	12
Outdoor Biology Instructional Strategies (OBIS)	2	3
Physical Science II (PSII)	2	3
Physical Science Study Committee Physics (PSSC)	11	18
Probing the Natural World--Intermediate Science Curriculum Study (ISCS)	12	11
Project Physics Course (Harvard)	12	9
Science Explorations for the Future[1/]	0	0
Technology-People-Environment (Engineering Concepts Curriculum Project - ECCP)	1	1
The Man Made World (Engineering Concepts Curriculum Project - ECCP)	2	1
Time, Space, and Matter--Secondary School Science	1	3
University of Illinois Astronomy Program	3	1

Sample N = 318

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.16 (Continued)

PERCENT OF DISTRICTS USING SELECTED CURRICULUM MATERIALS

K-6 Social Studies	During 1976-1977	Prior to 1976-1977
Concepts and Inquiry (Educational Research Council	2	2
Elementary School Economics I, II (University of Chicago)	1	1
Elementary Social Science Education Program Laboratory Units (SRA)	12	3
Environmental Studies for Urban Youth (ESSENCE)	0	0
Family of Man (Minnesota Project Social Studies)	1	2
Georgia Anthropology Curriculum Project	0	1
Human Sciences Program (BSCS)	1	2
Man: A Course of Study (MACOS)	3	3
Our Working World	8	16
Social Studies Dynamics Program 1/	0	0
Taba Program in Social Science	2	2

Sample N = 303

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.16 (Continued)

PERCENT OF DISTRICTS USING SELECTED CURRICULUM MATERIALS

7-12 Social Studies	During 1976-1977	Prior to 1976-1977
American Political Behavior	12	11
Biomedical Interdisciplinary Curriculum Project	0	0
Black in White America	1	3
Carnegie-Mellon Social Studies Curriculum Project (Holt Social Studies Curriculum)	10	11
Comparing Political Experiences	3	3
Concepts and Inquiry (Educational Research Council)	1	3
Economics in Society (ECON 12)	2	3
Environmental Studies for Urban Youth (ESSENCE)	0	2
Exploring Childhood	2	0
Exploring Human Nature	2	2
Family of Man (Minnesota Project Social Studies)	1	1
Georgia Anthropology Curriculum Project	0	1
Georgraphy in an Urban Age--High School Geography Project	4	7
Human Behavior Curriculum Project	2	0
Human Sciences Program (BSCS)	4	3
Huntington II	0	0
Patterns in Human History--Anthropology Curriculum Study Project	3	4
People and Technology	1	1
Project Africa	0	2
Social Studies Dynamics Program[1/]	0	2
Sociological Resources for the Social Studies (Episodes in Social Inquiry Series; Inquiries in Sociology; Readings in Sociology)	7	7

Sample N = 298

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.17

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS WHO HAVE SEEN SELECTED CURRICULUM MATERIALS IN EACH SUBJECT AREA AND GRADE RANGE

K-6 Mathematics	Percent
Comprehensive School Mathematics Program--Elementary Component (CSMP)	33
Developing Mathematical Processes (DMP)	29
Educational Research Council Mathematics Program (formerly Greater Cleveland Mathematics Program.	44
Individualized Mathematics System (IMS)	30
Individually Prescribed Instruction (IPI)	42
Infinity Factory	10
Madison Mathematics Project (MAD-M)	24
MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	26
School Mathematics Study Group (SMSG)	30
Search for Understanding Computation (SUC)[1/]	7
Unified Science and Mathematics for Elementary Schools (USMES)	9
Sample N = 327	

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.17 (Continued)

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS WHO HAVE SEEN SELECTED CURRICULUM MATERIALS IN EACH SUBJECT AREA AND GRADE RANGE

7-12 Mathematics	Percent
Comprehensive School Mathematics Program -- Elements of Mathematics (CSMP-EM)	23
Huntington II	13
Individualized Mathematics System (IMS)	30
Madison Mathematics Project (MAD-M)	16
Modern Coordiate Geometry	27
School Mathematics Study Group (SMSG)	34
Search for Understanding Computation (SUC)1/	5
Secondary School Mathematics Curriculum Improvement Study (SSMCIS)	21
Stretchers and Shrinkers/Motion Geometry (University of Illinois Committee on School Mathematics)	19
Technology-People-Environment (Engineering Concepts Curriculum Project - ECCP)	10
The Man Made World (Engineering Concepts Curriculum Project (ECCP)	11

Sample N = 321

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.17 (Continued)

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS WHO HAVE SEEN SELECTED CURRICULUM MATERIALS IN EACH SUBJECT AREA AND GRADE RANGE

K-6 Science	Percent
BSCS Elementary School Science Project	41
Conceptually Oriented Program in Elementary Science (COPES)	23
Elementary Science Study (ESS)	39
Environmental Studies for Urban Youth (ESSENCE)	6
Human Sciences Program (BSCS)	13
Individualized Science (IS)	19
MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	34
Science--A Process Approach (SAPA)	27
Science Curriculum Improvement Study (SCIS)	46
Science Explorations for the Future[1/]	6
Unified Science and Mathematics for Elementary Schools (USMES)	12
University of Illinois Astronomy Program	6

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.17 (Continued)

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS WHO HAVE SEEN SELECTED CURRICULUM MATERIALS IN EACH SUBJECT AREA AND GRADE RANGE

7-12 Science	Percent
Biological Science: An Ecological Approach (BSCS Green)	55
Biological Science: An Inquiry into Life (BSCS Yellow)	58
Biological Science: Molecules to Man (BSCS Blue)	64
Biological Science: Interaction of Experiments and Ideas	30
Biological Science: Me Now	14
Biological Science: Me and My Environment	19
Biological Science: Patterns and Processes	35
Biomedical Interdisciplinary Curriculum Project	7
Chemical Bond Approach (CBA)	35
Chemical Education Materials Study (CHEM Study)	45
Environmental Studies for Urban Youth (ESSENCE)	7
Human Sciences Program (BSCS)	22
Huntington II	6
Individualized Science Instructional Systems (ISIS)	38
Introductory Physical Science (IPS)	44
Investigating the Earth--Earth Science Curriculum Project (ESCP)	43
Outdoor Biology Instructional Strategies (OBIS)	16
Physical Science II (PSII)	27
Physical Science Study Committee Physics (PSSC)	35
Probing the Natural World--Intermediate Science Curriculum Study (ISCS)	33
Project Physics Course (Harvard)	36
Science Explorations for the Future[1/]	6
Technology-People-Environment (Engineering Concepts Curriculum Project - ECCP)	13
The Man Made World (Engineering Concepts Curriculum Project - ECCP)	16
Time, Space, and Matter--Secondary School Science	24
University of Illinois Astronomy Program	6

Sample N = 318

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.17 (Continued)

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS WHO HAVE SEEN SELECTED CURRICULUM MATERIALS IN EACH SUBJECT AREA AND GRADE RANGE

K-6 Social Studies	Percent
Concepts and Inquiry (Educational Research Council	13
Elementary School Economics I, II (University of Chicago)	18
Elementary Social Science Education Program Laboratory Units (SRA)	20
Environmental Studies for Urban Youth (ESSENCE)	4
Family of Man (Minnesota Project Social Studies)	24
Georgia Anthropology Curriculum Project	5
Human Sciences Program (BSCS)	9
Man: A Course of Study (MACOS)	25
Our Working World	20
Social Studies Dynamics Program 1/	4
Taba Program in Social Science	16

Sample N = 303

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.17 (Continued)

PERCENT OF DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS WHO HAVE SEEN SELECTED CURRICULUM MATERIALS IN EACH SUBJECT AREA AND GRADE RANGE

7-12 Social Studies	Percent
American Political Behavior	26
Biomedical Interdisciplinary Curriculum Project	7
Black in White America	25
Carnegie-Mellon Social Studies Curriculum Project (Holt Social Studies Curriculum)	33
Comparing Political Experiences	15
Concepts and Inquiry (Educational Research Council)	23
Economics in Society (ECON 12)	20
Environmental Studies for Urban Youth (ESSENCE)	14
Exploring Childhood	7
Exploring Human Nature	11
Family of Man (Minnesota Project Social Studies)	31
Georgia Anthropology Curriculum Project	10
Georgraphy in an Urban Age--High School Geography Project	15
Human Behavior Curriculum Project	18
Human Sciences Program (BSCS)	12
Huntington II	5
Patterns in Human History--Anthropology Curriculum Study Project	15
People and Technology	9
Project Africa	9
Social Studies Dynamics Program 1/	13
Sociological Resources for the Social Studies (Episodes in Social Inquiry Series; Inquiries in Sociology; Readings in Sociology)	24

Sample N = 298

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.18

PERCENT OF SCHOOLS USING AT LEAST ONE OF THE SELECTED CURRICULUM MATERIALS BY REGION, TYPE OF COMMUNITY, SIZE OF DISTRICT, PER PUPIL EXPENDITURE, PERCENT OF STUDENTS IN FREE LUNCH PROGRAM, SCHOOL SIZE, AND PRINCIPAL ATTENDANCE AT ONE OR MORE NSF INSTITUTES

	Percent of Schools
Nation (N = 1177)	43
Region 1/	
Northeast (N = 229)	64
South (N = 405)	34
North Central (N = 335)	41
West (N = 208)	40
Type of Community	
Rural (N = 268)	42
Small City (N = 320)	46
Urban (N = 296)	29
Suburban (N = 289)	34
Unknown (N = 4)	72
Size of District	
Small (N = 263)	46
Medium (N = 423)	51
Large (N = 446)	38
Unknown (N = 45)	28
Per Pupil Expenditure	
Low (N = 313)	29
Medium (N = 372)	42
High (N = 281)	64
Unknown (N = 211)	42
Students in Free Lunch Program	
Less than 10% (N = 318)	50
10-30% (N = 351)	57
More than 30% (N = 325)	31
Unknown (N = 183)	33
School Size	
Small (N = 347)	40
Medium (N = 426)	45
Large (N = 347)	54
Unknown (N = 57)	33
Principal Attend an NFS Institute	
Yes (N = 201)	68
No (N = 930)	39
Unknown (N = 46)	53

1/ Refer to Appendix A for definitions of reporting variables.

Table B.19

PERCENT OF SCHOOLS USING EACH CURRICULUM MATERIAL
BY SAMPLE GRADE RANGE 1/

	Grade Range			
	K-3	4-6	7-9	10-12
Mathematics				
Comprehensive School Mathematics Program--Elementary Component (CSMP)	0	1	4	0
Developing Mathematical Processes (DMP)	5	2	2	1
Educational Research Council Mathematics Program (formerly Greater Cleveland Mathematics Program)	0	1	0	0
Individualized Mathematics System (IMS)	6	10	8	2
Individually Prescribed Instruction (IPI)	2	2	1	1
Infinity Factory	0	0	0	1
Madison Mathematics Project (MAD-M)	2	0	3	0
Comprehensive School Mathematics Program--Elements of Mathematics (CSMP-EM)	1	0	1	2
Modern Coordinate Geometry	0	0	3	4
School Mathematics Study Group (SMSG)	2	1	2	8
Search for Understanding Computation (SUC) 2/	0	0	0	0
Secondary School Mathematics Curriculum Improvement Study (SSMCIS)	0	0	3	4
Stretchers and Shrinkers/Motion Geometry (University of Illinois Committee on School Mathematics)	1	1	5	2
Science				
BSCS Elementary School Science Project	1	0	1	2
Conceptually Oriented Program in Elementary Science (COPES)	0	1	4	0
Elementary Science Study (ESS)	10	6	3	1
Individualized Science (IS)	0	2	2	1
Science--A Process Approach (SAPA)	9	10	0	1
Science Curriculum Improvement Study (SCIS)	11	13	2	2
Biological Science: An Ecological Approach (BSCS Green)	0	0	10	19
Biological Science: An Inquiry into Life (BSCS Yellow)	1	1	7	19
Biological Science: Molecules to Man (BSCS Blue)	2	2	5	15
Sample N	317	292	298	270

1/ A school selected for one grade range may contain other grades as well. For example, schools in the K-3 and 4-6 sample grade ranges which reported using secondary curriculum materials are likely K-8 or K-12 schools.

2/ These are fictitious curriculum materials; they were included as a validity check.

Table B.19 (Continued)

PERCENT OF SCHOOLS USING EACH CURRICULUM MATERIAL
BY SAMPLE GRADE RANGE 1/

	Grade Range			
	K-3	4-6	7-9	10-12
Science (Cont'd)				
Biological Science: Interaction of Experiments and Ideas	0	0	1	1
Biological Science: Me Now	0	0	0	1
Biological Science: Me and My Environment	0	0	1	1
Biological Science: Patterns and Processes	1	0	2	9
Chemical Bond Approach (CBA)	0	0	0	1
Chemical Education Materials Study (CHEM Study)	0	0	3	11
Individualized Science Instructional SystemS (ISIS)	0	0	3	4
Introductory Physical Science (IPS)	1	1	14	16
Investigating the Earth--Earth Science Curriculum Project (ESCP)	0	1	4	7
Outdoor Biology Instructional Strategies (OBIS)	0	1	0	0
Physical Science II (PSII)	0	0	1	1
Physical Science Study Committee Physics (PSSC)	1	0	3	9
Probing the Natural World--Intermediate Science Curriculum Study (ISCS)	1	2	7	10
Project Physics Course (Harvard)	1	0	3	13
Science Explorations for the Future2/	0	0	0	0
Time, Space, and Matter--Secondary School Science Project	0	0	1	1
University of Illinois Astronomy Program	0	0	0	0
Social Studies				
Concepts and Inquiry (Educational Research Council)	2	1	1	4
Elementary Schools Economics I, II (University of Chicago)	0	0	0	0
Elementary Social Science Education Program Laboratory Units (SRA)	2	2	0	0
Man: A Course of Study (MACOS)	5	4	1	0
Materials and Activities for Teachers and Children (MATCH)	0	0	0	0
Our Working World	7	5	4	7
Taba Program in Social Science	4	3	1	2
American Political Behavior	1	1	3	5
Black in White America	0	0	2	2
SAMPLE N	317	292	298	270

1/ A school selected for one grade range may contain other grades as well. For example, schools in the K-3 and 4-6 sample grade ranges which reported using secondary curriculum materials are likely K-8 or K-12 schools.

2/ These are fictitious curriculum materials; they were included as a validity check.

Table B.19 (Continued)

PERCENT OF SCHOOLS USING EACH CURRICULUM MATERIAL
BY SAMPLE GRADE RANGE 1/

	Grade Range			
	K-3	4-6	7-9	10-12
Social Studies (Continued)				
Carnegie-Mellon Social Studies Curriculum Project (Holt Social Studies Curriculum)	1	0	1	5
Comparing Political Experiences	0	0	1	2
Economics in Society (ECON 12)	0	0	2	5
Exploring Childhood	0	0	0	1
Exploring Human Nature	0	0	1	1
Family of Man (Minnesota Project Social Studies)	1	2	2	0
Georgia Anthropology Curriculum Project	0	0	0	0
Geography in an Urban Age--High School Geography Project	0	0	2	3
Human Behavior Curriculum Project	0	0	0	1
Patterns in Human History--Anthropology Curriculum Study Project	0	0	1	2
People and Technology	0	1	0	0
Project Africa	1	0	0	0
Social Studies Dynamics Program 2/	0	0	0	0
Sociological Resources for the Social Studies (Episodes in Social Inquiry) Series, Inquiries in Sociology, Readings in Sociology	0	0	2	8
Interdisciplinary				
MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	0	0	0	0
Unified Science and Mathematics for Elementary Schools (USMES)	0	0	3	0
Environmental Studies for Urban Youth (ESSENCE)	0	1	0	0
Human Sciences Program (BSCS)	0	0	0	0
Biomedical Interdisciplinary Curriculum Project	0	0	0	0
Huntington II	0	0	0	0
Technology-People-Environment (Engineering Concepts Curriculum Project-ECCP)	0	0	0	1
The Man Made World (Engineering Concepts Curriculum Project-ECCP)	0	0	0	1
Sample N	317	292	298	270

1/ A school selected for one grade range may contain other grades as well. For example, schools in the K-3 and 4-6 sample grade ranges which reported using secondary curriculum materials are likely K-8 or K-12 schools.

2/ These are fictitious curriculum materials; they were included as a validity check.

Table B.20

TEACHERS' EXPERIENCE WITH SELECTED CURRICULUM MATERIALS, BY GRADE RANGE
A. ELEMENTARY MATHEMATICS

Elementary Mathematics	Have Never Seen		Have Seen But Not Used		Have Used in Teaching		Using in 1976-77		Missing	
	K-3	4-6	K-3	4-6	K-3	4-6	K-3	4-6	K-3	4-6
Comprehensive School Mathematics Program-Elementary Component (CSMP)	92	79	4	16	2	1	1	1	2	5
Developing Mathematical Processes (DMP)	82	78	10	13	3	4	1	3	6	5
Educational Research Mathematics Program (formerly Greater Cleveland Mathematics Program)	53	66	23	23	22	8	2	1	1	3
Individualized Mathematics System (IMS)	76	63	15	25	7	9	4	3	2	3
Individually Prescribed Instruction (IPI)	80	73	14	15	3	7	1	2	3	5
Infinity Factory	91	89	6	4	1	2	1	2	2	6
Madison Mathematics Project (MAD-M)	81	82	11	13	4	0	0	0	3	5
MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	85	84	12	12	2	1	0	0	2	4
School Mathematics Study Group (SMSG)	81	77	12	11	4	9	0	0	3	4
Search for Understanding Computation (SUC)1/	94	90	4	5	0	1	0	0	3	5
Unified Science and Mathematics for Elementary Schools (USMES)	92	85	5	9	0	1	0	1	3	5

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.20 (continued)

TEACHERS' EXPERIENCE WITH SELECTED CURRICULUM MATERIALS, BY GRADE RANGE
B. SECONDARY MATHEMATICS

Secondary Mathematics	Have Never Seen		Have Seen But Not Used		Have Used in Teaching		Using in 1976-77		Missing	
	7-9	10-12	7-9	10-12	7-9	10-12	7-9	10-12	7-9	10-12
Comprehensive School Mathematics Program--Elements of Mathematics (CSMP-EM)	74	74	20	23	4	2	0	0	2	1
Huntington II	94	90	4	7	0	2	0	2	2	2
Individualized Mathematics System (IMS)	63	64	29	30	7	3	3	1	2	3
Madison Mathematics Project (MAD-M)	84	82	13	14	2	1	0	0	1	3
Modern Coordinate Geometry	66	56	26	32	6	13	3	5	2	1
School Mathematics Study Group (SMSG)	41	30	32	38	26	31	7	6	1	1
Search for Understanding Computation (SUC) 1/	92	90	5	5	1	0	0	0	3	5
Secondary School Mathematics Curriculum Improvement Study (SSMCIS)	76	71	17	24	2	4	1	2	6	2
Stretchers and Shrinkers/Motion Geometry (University of Illinois Committee on School Mathematics)	76	81	17	15	6	3	1	0	1	1
Technology-People-Environment (Engineering Concepts Curriculum Project-ECCP)	95	93	2	6	0	0	0	0	3	1
The Man Made World (Engineering Concepts Curriculum Project-ECCP)	95	88	3	9	0	2	0	1	2	1

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.20 (continued)

TEACHERS' EXPERIENCE WITH SELECTED CURRICULUM MATERIALS, BY GRADE RANGE
C. ELEMENTARY SCIENCE

Elementary Science	Have Never Seen		Have Seen But Not Used		Have Used in Teaching		Using in 1976-77		Missing	
	K-3	4-6	K-3	4-6	K-3	K-6	K-3	4-6	K-3	4-6
BSCS Elementary School Science Project	81	70	12	22	0	1	0	0	8	7
Conceptually Oriented Program in Elementary Science (COPES)	80	79	13	12	0	1	0	0	8	8
Elementary Science Study (ESS)	60	51	25	28	7	14	5	9	8	7
Environmental Studies for Urban Youth (ESSENCE)	89	89	2	4	1	1	0	1	8	6
Human Sciences Program (BSCS)	84	75	7	15	1	2	0	1	8	8
Individualized Science (IS)	76	69	15	20	1	3	0	0	8	7
MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	78	78	12	15	1	1	0	0	9	6
Science-A Process Approach (SAPA)	63	59	17	22	10	13	4	9	10	6
Science Curriculum Improvement Study (SCIS)	61	52	16	25	16	16	11	12	7	7
Science Explorations for the Future 1/	84	76	7	13	2	1	0	0	8	10
Unified Science and Mathematics for Elementary Schools (USMES)	87	82	5	9	1	2	0	0	8	8
University of Illinois Astronomy Program	92	91	1	1	0	2	0	2	8	6

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.20 (continued)

TEACHERS' EXPERIENCE WITH SELECTED CURRICULUM MATERIALS, BY GRADE RANGE

D. SECONDARY SCIENCE

Secondary Science	Have Never Seen		Have Seen But Not Used		Have Used in Teaching		Using in 1976-77		Missing	
	7-9	10-12	7-9	10-12	7-9	10-12	7-9	10-12	7-9	10-12
Biological Science: An Ecological Approach (BSCS Green)	40	17	41	48	14	30	3	17	5	5
Biological Science: An Inquiry into Life (BSCS Yellow)	39	17	42	47	14	31	5	13	5	5
Biological Science: Molecules to Man (BSCS Blue)	42	22	46	57	11	16	6	5	2	5
Biological Science: Interaction of Experiments and Ideas	71	57	20	30	3	5	0	2	6	8
Biological Science: Me Now	85	77	8	16	1	1	0	0	6	7
Biological Science: Me and My Environment	77	71	15	21	2	1	0	0	6	7
Biological Science. Patterns and Processes	61	42	26	36	8	18	1	3	5	4
Biomedical Interdisciplinary Curriculum Project	85	82	8	11	0	1	0	0	6	7
Chemical Bond Approach (CBA)	71	52	22	37	2	5	0	2	6	6
Chemical Education Materials Study (CHEM Study)	60	38	29	43	5	14	1	7	5	6
Environmental Studies for Urban Youth (ESSENCE)	85	83	9	10	0	0	0	0	6	7
Human Sciences Program (BSCS)	73	65	19	28	3	1	0	0	6	7
Huntington II	92	85	1	5	0	1	0	1	7	10
Individualized Science Instructional Systems (ISIS)	59	51	27	37	7	6	1	1	7	6
Introductory Physical Science (IPS)	36	27	39	40	23	29	9	7	3	5
Investigating the Earth-Earth Science Curriculum Project (ESCP)...	43	45	29	37	22	10	10	4	7	8
Outdoor Biology Instructional Strategies (OBIS)	81	85	10	7	2	1	0	1	7	6
Physical Science II (PSII)	65	58	26	34	3	3	1	1	6	5
Physical Science Study Committee Physics (PSSC)	64	38	24	39	4	14	1	4	8	10
Probing the Natural World-Intermediate Science Curriculum Study (ISCS)	53	62	27	26	19	6	12	2	2	7
Project Physics Course (Harvard)	70	47	20	35	4	14	1	10	6	4
Science Explorations for the Future1/	89	79	4	12	1	1	0	1	6	8
Technology-People-Environment (Engineering Concepts Curriculum Project--ECCP)	89	80	4	13	0	1	0	0	7	7
The Man-Made World (Engineering Concepts Curriculum Project--ECCP)	85	76	8	15	1	3	0	0	6	7
Time, Space and Matter-Secondary School Science Project...........	69	65	22	23	4	5	1	0	5	7
University of Illinois Astronomy Program	89	90	4	2	1	3	1	1	6	5

1/ This is a fictitious curriculum material; it was used as a validity check.

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Table B.20 (continued)

TEACHERS' EXPERIENCE WITH SELECTED CURRICULUM MATERIALS, BY GRADE RANGE
E. ELEMENTARY SOCIAL STUDIES

Elementary Social Studies	Have Never Seen		Have Seen But Not Used		Have Used in Teaching		Using in 1976-77		Missing	
	K-3	4-6	K-3	4-6	K-3	K-6	K-3	4-6	K-3	4-6
Concepts and Inquiry (Educational Research Council)	84	77	9	15	4	4	2	2	3	4
Elementary School Economics I, II (University of Chicago)	95	88	2	6	1	2	0	1	3	5
Elementary Social Science Education Program Laboratory Units (SRA)	49	53	31	28	14	5	3	6	5	5
Environmental Studies for Urban Youth (ESSENCE)	86	85	10	11	0	1	1	0	4	3
Family of Man (Minnesota Project Social Studies)	76	74	16	22	4	1	1	1	5	3
Georgia Anthropology Curriculum Project	95	92	2	3	0	2	0	0	3	3
Human Sciences Program (BSCS)	89	87	7	9	0	1	0	0	4	4
Man: A Course of Study (MACOS)	80	74	17	18	0	5	0	2	3	4
Materials and Activities for Teachers and Children (MATCH)	87	79	9	12	1	5	1	3	4	4
Our Working World	66	72	16	14	15	10	5	2	4	4
Social Studies Dynamics Program[1/]	93	86	3	9	0	2	0	0	4	3
Taba Program in Social Science	88	85	6	10	2	3	1	1	4	3

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.20 (continued)

TEACHERS' EXPERIENCE WITH SELECTED CURRICULUM MATERIALS, BY GRADE RANGE
F. SECONDARY SOCIAL STUDIES

Secondary Social Studies	Have Never Seen		Have Seen But Not Used		Have Used in Teaching		Using in 1976-77		Missing	
	7-9	10-12	7-9	10-12	7-9	10-12	7-9	10-12	7-9	10-12
American Political Behavior	77	61	17	26	6	12	3	7	0	1
Biomedical Interdisciplinary Curriculum Project	98	93	1	2	0	0	0	0	1	4
Black in White America	71	65	22	27	6	6	2	1	1	2
Carnegie-Mellon Social Studies Curriculum Project (Holt Science Studies Curriculum)	75	66	21	20	4	12	2	4	0	2
Comparing Political Experiences	91	86	6	8	2	4	2	1	1	2
Concepts and Inquiry (Educational Research Council)	78	73	17	20	4	5	1	1	2	2
Economics in Society (ECON 12)	84	74	12	21	3	3	1	1	1	2
Environmental Studies for Urban Youth (ESSENCE)	89	89	9	8	1	1	0	1	1	1
Exploring Childhood	89	87	9	8	1	3	0	2	2	2
Exploring Human Nature	88	80	10	14	1	4	0	1	1	2
Family of Man (Minnesota Project Social Studies)	78	75	19	19	2	4	1	3	1	2
Georgia Anthropology Curriculum Project	95	94	3	3	1	1	0	0	1	2
Georgraphy in an Urban Age--High School Geography Project	86	82	9	10	4	7	2	3	1	1
Human Behavior Curriculum Project	91	86	7	12	1	1	1	0	1	1
Human Sciences Program (BSCS)	90	90	8	8	1	0	0	0	1	2
Huntington II	98	96	1	2	0	0	0	0	2	2
Patterns in Human History--Anthropology Curriculum Study Project	93	91	5	6	2	1	1	0	1	1
People and Technology	92	88	6	7	1	2	0	1	1	2
Project Africa	90	83	7	14	1	2	0	0	2	1
Social Studies Dynamics Program1/	92	89	5	8	2	2	1	0	1	2
Sociological Resources for the Social Studies (Episodes in Social Inquiry Series; Inquiries in Sociology; Readings in Sociology)	89	73	7	15	3	10	1	6	1	3

1/ This is a fictitious curriculum material; it was included as a validity check.

Table B.21

MOST COMMONLY USED MATHEMATICS TEXTBOOKS/PROGRAMS, BY GRADE RANGE 1/

Textbook/Program	Percent of K-3 Classes
Holt School Mathematics (Nichols)	18
Mathematics Around Us: Skills and Applications (Bolster)	13
Modern School Mathematics: Structure and Use (Duncan)	8
Elementary School Mathematics (Eicholz)	8
The Understanding Mathematics Program (Gundlach)	8 2/
Investigating School Mathematics (Eicholz)	5
Exploring Elementary Mathematics (Keedy)	4
Heath Elementary Mathematics Program (Dilley)	3
Mathematics for Individual Achievement (Denholm)	2
Laidlaw Mathematics Series (McSwain)	2
Silver Burdett Mathematics System (LeBlanc)	2
Using Numbers (Gundlach)	2

	Percent of 4-6 Classes
Holt School Mathematics (Nichols)	19
Modern School Mathematics: Structure and Use (Duncan)	10
Mathematics Around Us: Skills and Applications (Bolster)	9
Investigating School Mathematics (Eicholz)	9
Elementary School Mathematics (Eicholz)	8
Exploring Elementary Mathematics (Keedy)	5
Laidlaw Mathematics Series (McSwain)	4
Mathematics for Individual Achievement (Denholm)	4
Silver Burdett Mathematics System (LeBlanc)	4
Heath Elementary Mathematics Program (Dilley)	3
Unifying Math (Deans)	3

1/ In classes which are using multiple textbooks/programs, only the one designated as "used most often" was included in this analysis.

2/ This percent includes the percent of use for *Using Numbers* (Gundlach) which is a part of the program.

Table B.21 (Continued)

MOST COMMONLY USED MATHEMATICS TEXTBOOKS/PROGRAMS, BY GRADE RANGE 1/

Textbook/Program	Percent of 7-9 Classes
Holt School Mathematics (Nichols)	7
Modern Algebra: Structure and Method (Dolciani)	7
Exploring Modern Mathematics (Keedy)	6
Modern School Mathematics: Structure and Method (Dolciani)	5
Modern Mathematics Through Discovery (Morton)	5
School Mathematics (Eicholz)	4
Mathematics Around Us: Skills and Applications (Bolster)	4
Elementary Algebra (Denholm)	3
The Understanding Mathematics Program (Gundlach)	3
Refresher Mathematics (Stein)	2
Fundamentals of Mathematics (Stein)	2
Modern School Mathematics: Pre-Algebra (Dolciani)	2
Modern School Mathematics: Structure and Use (Duncan)	2

Textbook/Program	Percent of 10-12 Classes
Modern Algebra and Trigonometry: Structure and Method (Dolciani)	13
Modern School Mathematics: Geometry (Jurgensen)	12
Modern Algebra: Structure and Method (Dolciani)	4
Geometry (Jurgensen)	3
Geometry (Morgan)	3
Modern Introductory Analysis (Dolciani)	3
Algebra II with Trigonometry (Smart)	2
Holt Algebra II with Trigonometry	2

1/ In classes which are using multiple textbooks/programs, only the one designated as "used most often" was included in this analysis.

Table B.22

MOST COMMONLY USED SCIENCE TEXTBOOKS/PROGRAMS, BY GRADE RANGE 1/

Textbook/Program	Percent of K-3 Classes
Concepts in Science (Brandwein)	12
Science: Understanding Your Environment (Mallinson)	5
New Laidlaw Science Program (Smith)	5
Heath Science Series (Schneider)	4
Science Curriculum Improvement Study (SCIS): Life Science	4
Modern Elementary Science (Fischler)	4
Science: A Process Approach (SAPA)	2
Science Curriculum Improvement Study (SCIS): Physical Science	2
Modular Activities Program in Science (Berger)	2
Kindergarten Keys (Economy)	2

Textbook/Program	Percent of 4-6 Classes
Concepts in Science (Brandwein)	16
Science: Understanding Your Environment (Mallinson)	10
New Laidlaw Science Program (Smith)	7
Today's Basic Science Series (Navarra)	7
Elementary Science: Learning by Investigating (ESLI)	5
Heath Science Series (Schneider)	5
Steck-Vaughn Elementary Science Series (Ware)	4
Introductory Physical Science (Haber-Schaim)	3
Science: A Process Approach (SAPA)	3
Science Curriculum Improvement Study (SCIS): Life Science	3
Investigating In Science (Jacobson)	2
Science Curriculum Improvement Study (SCIS): Physical Science	2

1/ In classes which are using multiple textbooks/programs, only the one designated as "used most often" was included in this analysis.

Table B.22 (Continued)

MOST COMMONLY USED SCIENCE TEXTBOOKS/PROGRAMS, BY GRADE RANGE 1/

Textbook/Program	Percent of 7-9 Classes
Focus on Earth Science (Bishop)	8
Intermediate Science Curriculum Study: Probing the Natural World	7
Principals of Science Series (Heimler)	6
Introductory Physical Science (IPS) (Haber-Schaim)	4
Living Things (Fitzpatrick)	3
Study Lessons in General Science (Gross)	3
Focus on Life Science (Heimler)	3
Modern Science Series (Blanc)	3
Life: Its Forms and Changes	3
Modern Biology (Otto)	2
Modern Earth Science (Ramsey)	2
Life in the Environment (Navarra)	2
Interaction of Man and the Biosphere: Inquiry in Life Science (Abraham)	2

	Percent of 10-12 Classes
Modern Biology (Otto)	12
Modern Chemistry (Metcalfe)	7
Biological Science: An Ecological Approach (BSCS Green)	6
Biological Science: An Inquiry Into Life (BSCS Yellow) (Moore)	4
Biology: Introduction to Life (Nason)	3
Biology: Living Systems (Oram)	3
College Physics (Schaum)	3
Modern Physics (Williams)	3
Biology (Kroeber)	2
Biological Science: Molecules to Man (BSCS Blue)	2
Biology (Smallwood)	2
The Project Physics (Rutherford)	2
Modern Physical Science (Tracy)	2

1/ In classes which are using multiple textbooks/programs, only the one designated as "used most often" was included in this analysis.

Table B.23

MOST COMMONLY USED SOCIAL STUDIES TEXTBOOKS/PROGRAMS, BY GRADE RANGE 1/

Textbook/Program	Percent of K-3 Classes
Laidlaw Social Science Program (King)	14
Social Sciences: Concepts and Values (Brandwein)	9
Concepts & Inquiry Series	5
Our Working World (Senesh)	3
Investigating Man's World Program	3
Silver Burdett Social Science (Anderson)	3
Focus on Active Learning: Social Studies	3
Contemporary Social Science Curriculum (Anderson)	2
Holt Databank System for Elementary Social Studies (Fielder)	2
Map & Globe Skills (Nasaland)	2

Textbook/Program	Percent of 4-6 Classes
Exploring Series	14
Social Sciences: Concepts and Values (Brandwein)	13
Laidlaw Social Science Program (King)	10
Contemporary Social Science Curriculum (Anderson)	7
Man and His World Series	5
Concepts & Inquiry Series	4
Tiegs-Adams Series	4
Field Social Studies Program	3
Holt Databank System for Elementary Social Studies (Fielder)	3
Focus on Active Learning: Social Studies	2
Silver Burdett Social Science (Anderson)	2

1/ In classes which are using multiple textbooks/programs, only the one designated as "used most often" was included in this analysis.

Table B.23 (Continued)

MOST COMMONLY USED SOCIAL STUDIES TEXTBOOKS/PROGRAMS, BY GRADE RANGE 1/

Textbook/Program	Percent of 7-9 Classes
This is America's Story (Wilder)	5
The Free and the Brave (Graff)	4
America: It's Peoples and Values (Wood)	3
Liberty and Union: A History of the U. S. (Ridge)	3
Quest for Liberty (Chapin)	3
Challenge & Change (Eibling)	2
American Civics (Hartley)	2
Foundations of Freedom (Eibling)	2
	Percent of 10-12 Classes
Rise of the American Nation (Todd)	7
Magruder's American Government (McClenaghan)	5
Economics: Principles and Practices (Brown)	4
Carnegie-Mellon Social Studies Curriculum Project-Holt Social Studies (Fenton)	3
History of a Free People (Bragdon)	3
Sociology: The Study of Human Relationships (Thomas)	3
American History (Abramowitz)	2
Concepts in American History (Morzello)	2
Medieval and Early Modern Times (Hayes)	2
Men and Nations: A World History (Mazour)	2
Modern History (Becker)	2

1/ In classes which are using multiple textbooks/programs, only the one designated as "used most often" was included in this analysis.

Table B.24

PRINCIPALS' PERCEPTIONS OF INDIVIDUALS INVOLVED IN SCHOOL TEXTBOOK SELECTION

	Percent of Schools			
	Not Involved	Somewhat Involved	Heavily Involved	Don't Know/ Missing
Superintendent or assistant superintendent	23	35	17	25
District-wide supervisors1/	15	23	31	31
Principals	2	39	56	3
Teacher committees	2	16	70	12
Individual teachers	3	32	62	3
School board members	47	21	3	30
Parents	57	23	3	17
Students	62	20	1	18

Sample N = 1177

1/ It should be noted that many districts indicated that they have no district-wide supervisors.

Table B.25

SUPERINTENDENTS' PERCEPTIONS OF INDIVIDUALS INVOLVED IN DISTRICT TEXTBOOK SELECTION

	Percent of Districts			
	Not Involved	Somewhat Involved	Heavily Involved	Don't Know/ Missing
Superintendent or assistant superintendent	16	57	18	9
District-wide supervisors1/	22	12	32	33
Principals	1	43	49	7
Teacher committees	1	20	72	6
Individual teachers	1	38	54	7
School board members	56	24	4	17
Parents	58	22	2	17
Students	53	26	0	21
Sample N = 356				

1/ It should be noted that many districts indicated that they have no district-wide supervisors.

Table B.26

DISTRICT CURRICULUM PROGRAM QUESTIONNAIRE[1/]
RESPONDENTS' PERCEPTIONS OF INDIVIDUALS INVOLVED IN
DISTRICT TEXTBOOK SELECTION

A. K-6 Mathematics

	Percent of Districts			
	Not Involved	Somewhat Involved	Heavily Involved	Don't Know or Missing
Superintendent or assistant superintendent ...	28	39	21	11
District-wide supervisors	31	22	28	20
Principals	2	44	50	3
Teacher committees	3	9	85	3
Individual teachers	0	40	59	1
School board members	63	21	1	14
Parents	64	22	2	12
Students	66	21	2	10
Sample N = 327				

1/ It should be noted that many districts have no district-wide supervisors.

Table B.26 (Continued)

DISTRICT CURRICULUM PROGRAM QUESTIONNAIRE[1/]
RESPONDENTS' PERCEPTIONS OF INDIVIDUALS INVOLVED IN
DISTRICT TEXTBOOK SELECTION

B. 7-12 Mathematics

	Percent of Districts			
	Not Involved	Somewhat Involved	Heavily Involved	Don't Know or Missing
Superintendent or assistant superintendent ...	41	30	12	17
District-wide supervisors	32	17	23	27
Principals	21	50	20	8
Teacher committees	7	31	59	3
Individual teachers	1	25	73	1
School board members	60	19	1	20
Parents	67	15	2	16
Students	70	18	2	10

Sample N = 321

1/ It should be noted that many districts have no district-wide supervisors.

Table B.26 (Continued)

DISTRICT CURRICULUM PROGRAM QUESTIONNAIRE[1/]
RESPONDENTS' PERCEPTIONS OF INDIVIDUALS INVOLVED IN
DISTRICT TEXTBOOK SELECTION

C. K-6 Science

	Percent of Districts			
	Not Involved	Somewhat Involved	Heavily Involved	Don't Know or Missing
Superintendent or assistant superintendent ...	31	33	22	14
District-wide supervisors	31	19	25	25
Principals	8	45	43	4
Teacher committees	5	11	82	2
Individual teachers	0	34	63	3
School board members	63	19	2	17
Parents	65	23	2	10
Students	66	22	4	8

Sample N = 326

1/ It should be noted that many districts have no district-wide supervisors.

Table B.26 (Continued)

DISTRICT CURRICULUM PROGRAM QUESTIONNAIRE[1/]

RESPONDENTS' PERCEPTIONS OF INDIVIDUALS INVOLVED IN DISTRICT TEXTBOOK SELECTION

D. 7-12 Science

	Percent of Districts			
	Not Involved	Somewhat Involved	Heavily Involved	Don't Know or Missing
Superintendent or assistant superintendent ...	30	39	19	12
District-wide supervisors	23	14	30	33
Principals	15	51	27	6
Teacher committees	14	19	64	2
Individual teachers	2	28	70	1
School board members	56	27	3	14
Parents	69	18	2	11
Students	62	27	4	7

Sample N = 318

1/ It should be noted that many districts have no district-wide supervisors.

Table B.26 (Continued)

DISTRICT CURRICULUM PROGRAM QUESTIONNAIRE[1/]
RESPONDENTS' PERCEPTIONS OF INDIVIDUALS INVOLVED IN
DISTRICT TEXTOOK SELECTION

E. K-6 Social Studies

	Percent of Districts			
	Not Involved	Somewhat Involved	Heavily Involved	Don't Know or Missing
Superintendent or assistant superintendent ...	29	33	26	12
District-wide supervisors	30	21	28	21
Principals	4	41	50	5
Teacher committees	4	10	83	4
Individual teachers	0	36	61	3
School board members	65	19	3	13
Parents	68	23	2	7
Students	71	22	2	4

Sample N = 303

1/ It should be noted that many districts have no district-wide supervisors.

Table B.26 (Continued)

DISTRICT CURRICULUM PROGRAM QUESTIONNAIRE[1/]
RESPONDENTS' PERCEPTIONS OF INDIVIDUALS INVOLVED IN
DISTRICT TEXTOOK SELECTION

F. 7-12 Social Studies

	Percent of Districts			
	Not Involved	Somewhat Involved	Heavily Involved	Don't Know or Missing
Superintendent or assistant superintendent ...	27	34	19	19
District-wide supervisors	23	13	26	38
Principals	8	53	29	10
Teacher committees	8	22	65	5
Individual teachers	0	28	66	6
School board members	57	26	0	17
Parents	69	14	4	12
Students	60	30	2	8

Sample N = 298

1/ It should be noted that many districts have no district-wide supervisors.

Table B.27

FREQUENCY OF USE OF VARIOUS TECHNIQUES
A. K-3 MATHEMATICS CLASSES

Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
	Percent of Classes					
Lecture	41	3	2	16	31	7
Discussion	8	2	2	13	73	3
Student reports or projects	55	13	17	6	6	4
Library work	81	7	1	4	1	7
Students working at chalkboard	4	3	9	40	41	3
Individual assignments	9	5	3	22	58	3
Students use hands-on manipulative or laboratory materials	7	12	11	37	29	6
Televised instruction	86	5	2	6	0	1
Programmed instruction	75	3	5	4	5	8
Computer-assisted instruction	94	2	0	1	1	2
Tests or quizzes	13	12	28	39	6	2
Contracts	83	2	4	3	4	3
Simulations (role-play, debates, panels)	70	8	9	10	1	2
Field trips, excursions	70	24	1	0	0	4
Guest speakers	90	5	2	0	0	2
Teacher demonstrations	6	8	10	31	40	5

SAMPLE N = 297

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
B. 4-6 MATHEMATICS CLASSES

Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
	Percent of Classes					
Lecture	26	8	3	24	34	5
Discussion	3	3	2	16	72	4
Student reports or projects	36	34	16	6	4	5
Library work	63	21	5	8	0	4
Students working at chalkboard	3	6	11	35	43	3
Individual assignments	4	6	3	21	62	4
Students use hands-on manipulative or laboratory materials	10	30	21	25	9	5
Televised instruction	78	7	4	7	1	3
Programmed instruction	65	10	8	6	6	7
Computer-assisted instruction	91	2	1	1	1	5
Tests or quizzes	3	1	29	54	10	3
Contracts	58	11	12	6	9	4
Simulations (role-play, debates, panels)	80	10	4	2	0	4
Field trips, excursions	75	20	1	1	0	3
Guest speakers	86	9	2	1	0	4
Teacher demonstrations	12	6	14	27	37	4

SAMPLE N = 277

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
C. 7-9 MATHEMATICS CLASSES

	Percent of Classes					
Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
Lecture	5	4	3	25	61	2
Discussion	4	3	4	19	68	1
Student reports or projects	44	37	11	4	2	2
Library work	75	19	2	2	0	2
Students working at chalkboard	8	13	19	31	29	1
Individual assignments	9	9	7	12	62	1
Students use hands-on manipulative or laboratory materials	31	28	19	16	5	1
Televised instruction	93	4	1	1	0	1
Programmed instruction	77	9	7	2	3	2
Computer-assisted instruction	90	3	2	4	1	1
Tests or quizzes	0	1	22	70	4	3
Contracts	82	11	2	1	2	2
Simulations (role-play, debates, panels)	89	7	2	1	0	2
Field trips, excursions	87	12	0	0	0	1
Guest speakers	87	13	0	0	0	1
Teacher demonstrations	11	9	15	27	35	3

SAMPLE N = 550

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
D. 10-12 MATHEMATICS CLASSES

Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
	Percent of Classes					
Lecture	4	2	2	18	72	2
Discussion	4	2	6	18	69	1
Student reports or projects	43	36	14	2	3	2
Library work	74	22	2	0	0	2
Students working at chalkboard	9	14	19	36	22	1
Individual assignments	15	11	11	9	52	3
Students use hands-on manipulative or laboratory materials	41	28	15	8	6	2
Televised instruction	93	6	0	0	0	1
Programmed instruction	89	8	2	0	1	1
Computer-assisted instruction	86	6	5	2	0	1
Tests or quizzes	1	0	20	76	2	1
Contracts	93	3	2	1	1	2
Simulations (role-play, debates, panels)	93	5	1	1	0	1
Field trips, excursions	86	13	1	0	0	1
Guest speakers	78	19	2	0	0	1
Teacher demonstrations	19	13	13	25	28	2

SAMPLE N = 548

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
E. K-3 SCIENCE CLASSES

	Percent of Classes					
Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
Lecture	33	5	12	22	18	11
Discussion	1	3	10	37	39	10
Student reports or projects	30	16	24	10	9	11
Library work	53	13	11	11	1	11
Students working at chalkboard	39	19	16	9	3	13
Individual assignments	34	14	20	12	6	14
Students use hands-on manipulative or laboratory materials	11	15	23	30	7	14
Televised instruction	67	9	3	7	0	14
Programmed instruction	72	4	3	3	1	17
Computer-assisted instruction	83	1	0	0	0	17
Tests or quizzes	46	16	19	7	0	13
Contracts	81	2	1	2	1	14
Simulations (role-play, debates, panels)	53	18	7	7	1	14
Field trips, excursions	23	53	10	1	0	13
Guest speakers	60	24	1	1	0	14
Teacher demonstrations	5	19	30	22	13	12

SAMPLE N = 287

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
F. 4-6 SCIENCE CLASSES

	Percent of Classes					
Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
Lecture	12	6	9	43	23	8
Discussion	1	1	4	32	58	5
Student reports or projects	2	31	43	15	3	7
Library work	10	35	33	14	2	6
Students working at chalkboard	33	29	16	16	2	5
Individual assignments	7	18	28	29	13	6
Students use hands-on manipulative or laboratory materials	13	19	25	25	11	8
Televised instruction	68	12	4	12	1	3
Programmed instruction	73	13	3	2	1	7
Computer-assisted instruction	94	1	0	0	0	5
Tests or quizzes	5	12	48	29	1	5
Contracts	73	11	6	3	1	7
Simulations (role-play, debates, panels)	54	27	8	2	0	8
Field trips, excursions	24	65	6	0	0	4
Guest speakers	47	45	2	0	0	5
Teacher demonstrations	5	16	37	32	5	5

SAMPLE N = 271

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
G. 7-9 SCIENCE CLASSES

	Percent of Classes					
Techniques	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
Lecture	5	6	9	48	30	2
Discussion	1	2	4	34	56	3
Student reports or projects	8	43	29	16	2	2
Library work	18	51	20	7	1	3
Students working at chalkboard	36	35	18	9	1	2
Individual assignments	10	24	16	24	23	4
Students use hands-on manipulative or laboratory materials	5	16	17	37	24	2
Televised instruction	70	16	10	3	0	2
Programmed instruction	70	15	5	2	6	2
Computer-assisted instruction	96	2	1	0	0	2
Tests or quizzes	4	4	24	60	6	2
Contracts	75	14	3	4	1	3
Simulations (role-play, debates, panels)	68	23	5	1	0	3
Field trips, excursions	42	51	4	0	0	2
Guest speakers	60	36	2	0	0	2
Teacher demonstrations	3	14	38	38	5	2

SAMPLE N = 535

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
H. 10-12 SCIENCE CLASSES

	Percent of Classes					
Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
Lecture	4	2	5	45	42	2
Discussion	1	2	5	37	52	3
Student reports or projects	14	38	22	17	6	3
Library work	22	54	17	4	1	3
Students working at chalkboard	36	35	16	9	1	3
Individual assignments	10	23	17	21	25	3
Students use hands-on manipulative or laboratory materials	1	7	18	60	12	3
Televised instruction	72	18	6	1	0	3
Programmed instruction	67	22	6	1	2	3
Computer-assisted instruction	89	7	1	0	0	3
Tests or quizzes	1	2	34	57	5	3
Contracts	85	9	1	1	1	4
Simulations (role-play, debates, panels)	77	16	5	0	0	3
Field trips, excursions	40	52	5	0	0	3
Guest speakers	45	51	1	0	0	3
Teacher demonstrations	2	16	38	34	7	2

SAMPLE N = 586

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
I. K-3 SOCIAL STUDIES CLASSES

	Percent of Classes					
Technique	Never	Less than once a month	At least once a month	At least once a week	Just abcut daily	Missing
Lecture	27	8	10	26	20	9
Discussion	1	0	4	34	54	7
Student reports or projects	25	23	23	19	2	9
Library work	40	18	15	18	1	7
Students working at chalkboard	48	21	12	7	3	8
Individual assignments	31	20	15	25	2	7
Students use hands-on manipulative or laboratory materials	24	16	20	26	5	9
Televised instruction	65	12	6	9	2	6
Programmed instruction	63	6	3	17	2	9
Computer-assisted instruction	90	2	0	1	0	6
Tests or quizzes	40	18	15	19	1	8
Contracts	83	6	3	2	0	7
Simulations (role-play, debates, panels)	27	28	30	8	1	7
Field trips, excursions	19	53	17	1	0	9
Guest speakers	42	45	3	1	0	8
Brainstorming	35	21	24	9	2	8

SAMPLE N = 254

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
J. 4-6 SOCIAL STUDIES CLASSES

Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
	Percent of Classes					
Lecture	16	9	10	35	24	6
Discussion	0	0	2	23	68	6
Student reports or projects	1	25	42	22	5	5
Library work	7	26	34	23	4	6
Students working at chalkboard	37	33	12	9	4	7
Individual assignments	4	10	29	31	21	5
Students use hands-on manipulative or laboratory materials	20	29	15	21	9	6
Televised instruction	66	10	3	15	1	5
Programmed instruction	63	10	7	4	6	11
Computer-assisted instruction	93	1	0	1	0	6
Tests or quizzes	4	8	44	37	1	6
Contracts	64	15	7	3	3	7
Simulations (role-play, debates, panels)	20	46	24	5	0	6
Field trips, excursions	32	58	5	0	1	5
Guest speakers	48	42	4	0	0	6
Brainstorming	36	26	21	11	1	6

SAMPLE N = 281

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES
K. 7-9 SOCIAL STUDIES CLASSES

Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
	Percent of Classes					
Lecture	3	8	13	53	21	2
Discussion	0	1	6	27	63	3
Student reports or projects	2	31	42	22	2	1
Library work	10	42	33	14	1	2
Students working at chalkboard	40	33	13	7	4	2
Individual assignments	3	13	21	27	35	2
Students use hands-on manipulative or laboratory materials	35	34	8	15	5	4
Televised instruction	69	20	6	4	0	1
Programmed instruction	69	15	6	6	1	3
Computer-assisted instruction	95	4	0	0	0	1
Tests or quizzes	0	2	33	62	2	1
Contracts	61	21	8	3	2	5
Simulations (role-play, debates, panels)	16	43	32	6	0	2
Field trips, excursions	45	52	2	0	0	2
Guest speakers	42	53	4	0	0	1
Brainstorming	36	32	18	9	1	4

SAMPLE N = 453

Table B.27 (Continued)

FREQUENCY OF USE OF VARIOUS TECHNIQUES

L. 10-12 SOCIAL STUDIES CLASSES

	Percent of Classes					
Technique	Never	Less than once a month	At least once a month	At least once a week	Just about daily	Missing
Lecture	1	9	8	48	32	2
Discussion	0	1	2	34	62	1
Student reports or projects	4	30	44	20	2	1
Library work	11	39	34	16	1	1
Students working at chalkboard	60	25	7	4	2	2
Individual assignments	5	27	23	24	18	3
Students use hands-on manipulative or laboratory materials	59	17	11	8	3	2
Televised instruction	55	27	12	4	0	2
Programmed instruction	70	17	8	4	0	2
Computer-assisted instruction	96	3	0	0	0	1
Tests or quizzes	1	2	35	54	6	1
Contracts	75	15	5	1	1	4
Simulations (role-play, debates, panels)	22	42	27	7	0	2
Field trips, excursions	47	47	4	0	0	1
Guest speakers	40	51	7	1	0	1
Brainstorming	32	33	17	12	4	3

SAMPLE N = 490

Table B.28

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS
A. K-3 MATHEMATICS CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	38	20	27	9	2	2
Filmstrips	29	19	38	11	2	2
Film loops	62	24	8	2	1	4
Tapes	48	23	14	9	4	2
Slides	61	23	11	2	1	3
Records	36	24	20	12	7	1
Overhead projectors	33	9	25	18	12	3
Standard TV	71	10	5	5	7	3
Closed circuit TV	75	15	3	3	2	3
Videotape recorder/player	69	11	10	4	2	5

SAMPLE N = 297

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS

B. 4-6 MATHEMATICS CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	29	18	42	6	1	4
Filmstrips	29	14	41	10	4	2
Film loops	58	19	15	2	0	6
Tapes	38	16	26	9	8	3
Slides	63	20	10	1	1	5
Records	41	19	27	5	6	3
Overhead projectors	25	3	31	16	24	2
Standard TV	64	14	11	1	7	3
Closed circuit TV	74	13	6	1	3	4
Videotape recorder/player	62	16	15	2	2	3

SAMPLE N = 277

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS

C. 7-9 MATHEMATICS CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	40	24	27	6	1	2
Filmstrips	37	18	33	9	1	2
Film loops	61	22	12	1	1	4
Tapes	61	16	16	3	2	2
Slides	68	19	9	2	0	2
Records	70	17	9	2	0	2
Overhead projectors	22	4	26	13	33	1
Standard TV	81	12	5	1	1	2
Closed circuit TV	80	12	5	1	0	2
Videotape recorder/player	75	12	7	1	2	2

SAMPLE N = 550

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS
D. 10-12 MATHEMATICS CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	43	21	32	3	0	1
Filmstrips	51	16	27	5	0	2
Film loops	66	18	13	1	0	2
Tapes	76	9	13	1	0	1
Slides	72	13	11	0	3	2
Records	86	8	5	0	0	1
Overhead projectors	21	4	27	19	28	2
Standard TV	89	8	2	0	0	1
Closed circuit TV	88	8	4	0	0	1
Videotape recorder/player	83	9	7	0	0	1

SAMPLE N = 548

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS
E. K-3 SCIENCE CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	8	12	21	31	17	11
Filmstrips	7	11	33	28	12	10
Film loops	41	23	13	3	1	20
Tapes	40	16	15	9	7	12
Slides	40	18	23	4	1	14
Records	31	18	22	11	5	13
Overhead projectors	26	3	42	11	6	13
Standard TV	54	10	13	5	6	12
Closed circuit TV	65	12	6	1	1	16
Videotape recorder/player	56	12	10	5	4	13

SAMPLE N = 287

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS
F. 4-6 SCIENCE CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	3	7	29	45	14	3
Filmstrips	3	7	31	41	14	5
Film loops	36	21	25	8	1	9
Tapes	31	17	29	12	4	7
Slides	25	27	33	5	1	9
Records	38	20	25	8	4	6
Overhead projectors	13	6	35	26	14	6
Standard TV	50	17	15	4	8	7
Closed circuit TV	58	21	7	4	3	8
Videotape recorder/player	51	20	14	6	2	7

SAMPLE N = 271

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS

G. 7-9 SCIENCE CLASSES

Audiovisual materials	Percent of Classes: Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	6	8	21	45	19	3
Filmstrips	12	4	27	39	17	1
Film loops	43	21	20	6	1	9
Tapes	44	10	27	12	3	5
Slides	30	17	37	11	1	4
Records	50	9	26	12	2	2
Overhead projectors	18	4	25	26	27	1
Standard TV	68	12	10	7	1	2
Closed circuit TV	65	18	10	5	1	2
Videotape recorder/player	54	15	17	11	1	2

SAMPLE N = 535

Table B. 28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS

H. 10-12 SCIENCE CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	3	7	32	41	14	3
Filmstrips	11	7	38	36	7	2
Film loops	28	24	25	17	2	3
Tapes	48	13	27	7	1	4
Slides	28	15	35	14	3	4
Records	59	7	24	6	1	3
Overhead projectors	17	1	26	26	27	3
Standard TV	74	11	10	2	0	4
Closed circuit TV	67	17	11	1	1	3
Videotape recorder/player	55	19	18	4	1	3

SAMPLE N = 586

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS
I. K-3 SOCIAL STUDIES CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	2	11	30	25	25	7
Filmstrips	4	8	20	39	22	7
Film loops	44	16	12	6	12	11
Tapes	23	14	25	25	6	7
Slides	26	19	29	17	1	8
Records	13	14	40	17	8	9
Overhead projectors	26	4	30	27	5	8
Standard TV	57	9	12	6	9	8
Closed circuit TV	71	11	5	3	3	8
Videotape recorder/player	60	12	12	5	4	7

SAMPLE N = 254

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS
J. 4-6 SOCIAL STUDIES CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	2	11	19	39	25	4
Filmstrips	1	4	19	53	19	4
Film loops	41	18	15	11	1	15
Tapes	17	20	32	20	6	5
Slides	23	28	33	9	1	6
Records	15	16	41	20	4	5
Overhead projectors	14	3	34	26	18	5
Standard TV	41	15	21	8	10	6
Closed circuit TV	59	22	6	2	4	7
Videotape recorder/player	50	17	19	6	1	6

SAMPLE N = 281

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS
K. 7-9 SOCIAL STUDIES CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	3	12	21	43	20	1
Filmstrips	3	7	23	48	18	1
Film loops	51	24	10	8	1	6
Tapes	20	14	36	22	7	1
Slides	22	18	51	7	1	2
Records	16	11	50	16	5	2
Overhead projectors	13	5	31	32	18	1
Standard TV	56	18	18	3	1	5
Closed circuit TV	63	23	8	3	1	4
Videotape recorder/player	41	23	24	9	1	2

SAMPLE N = 453

Table B.28 (Continued)

FREQUENCY OF USE OF VARIOUS AUDIOVISUAL MATERIALS
L. 10-12 SOCIAL STUDIES CLASSES

Audiovisual materials	Percent of Classes					
	Not needed	Needed but not available	Less than once a month	At least once a month	At least once a week	Missing
Films	5	13	30	32	20	1
Filmstrips	5	4	33	38	19	1
Film loops	57	19	13	5	1	5
Tapes	30	15	36	12	4	2
Slides	30	19	35	12	1	4
Records	25	13	36	21	3	2
Overhead projectors	22	6	32	24	14	1
Standard TV	47	17	27	6	1	3
Closed circuit TV	53	26	13	3	2	4
Videotape recorder/player	32	15	36	12	3	2

SAMPLE N = 490

Table B.29
FREQUENCY OF USE OF VARIOUS TYPES OF EQUIPMENT AND SUPPLIES
A. K-3 MATHEMATICS CLASSES

Manipulative materials	Percent of Classes: Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Games and puzzles	0	7	9	25	58	2
Handheld calculators	77	15	1	2	3	2
Computers or computer terminals	85	11	0	1	1	2
Metric measurement tools (rulers, containers, weights, etc.)	16	24	23	31	4	3
Nonmetric measurement tools	7	14	28	37	11	4
Activity cards or kits	4	20	13	28	29	6
Numeration and place value manipulatives (rods, blocks, etc.)	14	13	14	28	29	2
Geometric tools	27	20	23	18	9	2

SAMPLE N = 297

Table B.29 (Continued)

FREQUENCY OF USE OF VARIOUS TYPES OF EQUIPMENT AND SUPPLIES

B. 4-6 MATHEMATICS CLASSES

Manipulative materials	Percent of Classes					
	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Games and puzzles	5	5	25	39	19	8
Handheld calculators	44	39	6	7	1	3
Computers or computer terminals	63	26	1	2	2	6
Metric measurement tools (rulers, containers, weights, etc.)	7	29	20	32	5	7
Nonmetric measurement tools	6	13	22	39	16	5
Activity cards or kits	8	10	25	27	25	5
Numeration and place value manipulatives (rods, blocks, etc.)	20	16	26	22	14	2
Geometric tools	13	21	26	27	9	4

SAMPLE N = 277

Table B.29 (Continued)

FREQUENCY OF USE OF VARIOUS TYPES OF EQUIPMENT AND SUPPLIES

C. 7-9 MATHEMATICS CLASSES

	Percent of Classes					
Manipulative materials	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Games and puzzles	12	8	33	36	9	2
Handheld calculators	42	28	15	10	5	1
Computers or computer terminals	66	19	5	4	2	3
Metric measurement tools (rulers, containers, weights, etc.)	19	18	25	31	5	2
Nonmetric measurement tools	22	5	35	30	7	2
Activity cards or kits	41	19	22	11	6	1
Numeration and place value manipulatives (rods, blocks, etc.)	58	14	17	7	2	1
Geometric tools	28	7	29	32	3	1

SAMPLE N = 550

Table B.29 (Continued)

FREQUENCY OF USE OF VARIOUS TYPES OF EQUIPMENT AND SUPPLIES

D. 10-12 MATHEMATICS CLASSES

	Percent of Classes					
Manipulative materials	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Games and puzzles	40	9	38	11	1	1
Handheld calculators	33	18	19	15	14	1
Computers or computer terminals	59	17	5	7	4	7
Metric measurement tools (rulers, containers, weights, etc.)	61	9	15	11	3	1
Nonmetric measurement tools	48	5	20	20	7	1
Activity cards or kits	79	12	4	2	1	1
Numeration and place value manipulatives (rods, blocks, etc.)	88	6	4	1	1	1
Geometric tools	42	8	16	24	9	1

SAMPLE N = 548

Table B.30

FREQUENCY OF USE OF VARIOUS TYPES OF EQUIPMENT AND SUPPLIES

A. K-3 SCIENCE CLASSES

	Percent of Classes					
Manipulative materials	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Hand-held calculators	69	15	0	1	1	15
Microscopes	37	21	24	4	0	14
Cameras	54	20	7	4	0	15
Models (e.g., the solar system, parts of organisms, etc.)	27	26	17	12	4	15
Games and puzzles	19	25	14	18	13	12
Magnifying glass	6	17	29	20	18	11
Meter sticks, rulers	16	9	21	24	20	10
Balance, scale	27	16	23	12	12	10
Batteries, bulbs	32	18	22	9	5	14
Magnets	8	10	40	19	14	9
Rocks	10	8	35	22	14	10
Living plants	4	5	15	33	34	9
Living animals	12	9	25	20	21	11

SAMPLE N = 287

Table B.30 (Continued)
FREQUENCY OF USE OF VARIOUS TYPES OF
EQUIPMENT AND SUPPLIES
B. 4-6 SCIENCE CLASSES

	Percent of Classes					
Manipulative materials	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Hand-held calculators	61	19	9	2	0	8
Microscopes	8	27	35	21	3	7
Cameras	61	25	6	1	0	7
Models (e.g., the solar system, parts of organisms, etc.)	9	25	22	29	8	8
Games and puzzles	10	25	25	29	4	8
Magnifying glass	8	10	43	26	8	5
Meter sticks, rulers	9	13	27	35	13	4
Balance, scale	19	20	30	21	4	5
Batteries, bulbs	23	16	32	20	3	5
Magnets	17	11	41	20	5	5
Rocks	16	11	33	25	9	6
Living plants	8	10	21	35	21	6
Living animals	21	18	19	24	12	5

SAMPLE N = 271

Table B.30 (Continued)

FREQUENCY OF USE OF VARIOUS TYPES OF EQUIPMENT AND SUPPLIES

C. 7-9 SCIENCE CLASSES

Manipulative materials	Percent of Classes					
	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Hand-held calculators	69	19	4	3	3	2
Microscopes	30	7	22	32	5	3
Cameras	62	23	5	4	0	6
Models (e.g., the solar system, parts of organisms, etc.)	17	11	24	30	15	3
Games and puzzles	29	17	30	16	6	2
Magnifying glass	17	5	44	25	9	2
Meter sticks, rulers	11	2	25	38	23	2
Balance, scale	10	4	35	29	20	2
Batteries, bulbs	27	6	30	24	12	2
Magnets	31	4	42	13	10	2
Rocks	38	3	23	26	8	2
Living plants	39	7	16	29	8	1
Living animals	47	8	18	19	7	2

SAMPLE N = 535

Table B.30 (Continued)
FREQUENCY OF USE OF VARIOUS TYPES OF
EQUIPMENT AND SUPPLIES
D. 10-12 SCIENCE CLASSES

	Percent of Classes					
Manipulative materials	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Hand-held calculators	47	14	9	6	20	3
Microscopes	33	1	13	36	14	3
Cameras	61	14	13	4	5	4
Models (e.g., the solar system, parts of organisms, etc.)	15	12	26	34	10	4
Games and puzzles	42	12	33	9	0	4
Magnifying glass	20	2	45	24	4	5
Meter sticks, rulers	7	2	29	39	20	3
Balance, scale	9	1	30	40	17	3
Batteries, bulbs	40	2	32	18	5	4
Magnets	50	2	37	6	2	3
Rocks	74	3	13	4	2	5
Living plants	39	4	17	26	12	3
Living animals	43	7	19	19	9	4

SAMPLE N = 586

Table B.31
FREQUENCY OF USE OF VARIOUS TYPES OF EQUIPMENT AND SUPPLIES
A. K-3 SOCIAL STUDIES CLASSES

	Percent of Classes					
Manipulative materials	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Learning kits	32	37	9	10	3	10
Games and puzzles	10	20	17	33	11	10
Maps, charts, globes	3	5	21	36	28	8
Copies of original documents	62	13	16	2	0	7
Computer or computer terminals	84	6	1	1	0	7
Reference books	18	9	16	23	27	8
Paperbacks	45	12	18	13	5	7
Artifacts, models	22	22	20	22	5	10
Photographs, posters	3	12	19	29	31	7

SAMPLE N = 254

Table B.31 (Continued)

FREQUENCY OF USE OF VARIOUS TYPES OF EQUIPMENT AND SUPPLIES

B. 4-6 SOCIAL STUDIES CLASSES

	Percent of Classes					
Manipulative materials	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Learning kits	23	39	13	11	7	7
Games and puzzles	9	22	22	31	11	6
Maps, charts, globes	0	4	6	29	56	5
Copies of original documents	22	18	32	16	7	5
Computer or computer terminals	74	15	2	0	0	8
Reference books	4	5	9	27	50	5
Paperbacks	17	15	18	20	24	6
Artifacts, models	10	28	23	19	14	6
Photographs, posters	3	12	18	29	32	5

SAMPLE N = 281

Table B.31 (Continued)
FREQUENCY OF USE OF VARIOUS TYPES OF
EQUIPMENT AND SUPPLIES
C. 7-9 SOCIAL STUDIES CLASSES

	Percent of Classes					
Manipulative materials	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Learning kits	23	40	18	12	5	2
Games and puzzles	14	18	21	40	6	2
Maps, charts, globes	2	4	7	44	42	1
Copies of original documents	17	14	36	28	5	1
Computer or computer terminals	78	18	2	1	0	1
Reference books	2	8	13	45	31	1
Paperbacks	14	18	20	31	16	2
Artifacts, models	22	24	28	17	8	1
Photographs, posters	5	13	20	30	31	1

SAMPLE N = 453

Table B.31 (Continued)

FREQUENCY OF USE OF VARIOUS TYPES OF EQUIPMENT AND SUPPLIES

D. 10-12 SOCIAL STUDIES CLASSES

Manipulative materials	Percent of Classes					
	Not needed	Needed but not available	Use less than 10 days	Use between 10 and 50 days	Use more than 50 days	Missing
Learning kits	43	28	19	6	1	3
Games and puzzles	29	20	34	13	1	2
Maps, charts, globes	12	9	17	33	28	1
Copies of original documents	23	19	34	19	4	1
Computer or computer terminals	74	20	3	0	0	3
Reference books	3	8	23	39	27	1
Paperbacks	11	15	24	34	15	2
Artifacts, models	38	27	22	7	2	3
Photographs, posters	11	16	34	23	15	2

SAMPLE N = 490

331

Table B.32

PERCENT OF SCHOOLS WITH VARIOUS TYPES OF EQUIPMENT BY REGION, TYPE OF COMMUNITY, SIZE OF DISTRICT, PER PUPIL EXPENDITURE, PERCENT OF STUDENTS IN FREE LUNCH PROGRAM, AND SCHOOL SIZE

	Computers or Computer Terminals	Hand-Held Calculators	Resource Centers for Individualized Instruction	Mathematics Laboratories
Nation (N = 1177)	12	41	47	20
Region				
Northeast (N = 229)	12	44	51	20
South (N = 405)	8	44	47	19
North Central (N = 335)	14	38	43	19
West (N = 208)	13	40	48	22
Type of Community				
Rural (N = 268)	8	47	40	13
Small City (N = 320)	6	33	40	12
Urban (N = 296)	14	30	51	27
Suburban (N = 289)	21	49	63	32
Unknown (N = 4)	72	72	15	0
Size of District				
Small (N = 263)	7	46	34	6
Medium (N = 423)	11	43	50	19
Large (N = 446)	17	30	54	29
Unknown (N = 45)	12	54	53	28
Per Pupil Expenditure				
Low (N = 313)	5	33	41	19
Medium (N = 372)	14	36	43	15
High (N = 281)	17	55	55	24
Unknown (N = 211)	13	44	50	22
Students In Free Lunch Program				
Less than 10% (N = 318)	14	46	52	11
10-30% (N = 351)	16	55	51	19
More than 30% (N = 325)	7	33	39	24
Unknown (N = 183)	9	27	45	24
School Size				
Small (N = 347)	7	37	44	18
Medium (N = 426)	16	47	48	19
Large (N = 34[illegible])	20	46	53	25
Unknown (N = 57)	8	31	50	23

Table B.33

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA,
BY SUBJECT AND GRADE RANGE
A. K-3 MATHEMATICS

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	10	34	45	7	4
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	12	16	34	36	3
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	2	37	35	22	3
Money to buy supplies on a day-to-day basis	17	9	20	48	5
Storage space for equipment and supplies	4	22	34	36	3
Space available for classroom preparation	4	29	40	24	4
Spaces for small groups to work	3	28	32	33	3
Availability of laboratory assistants or paraprofessional help	34	6	18	37	4

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA,
BY SUBJECT AND GRADE RANGE
B. 4-6 MATHEMATICS

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	8	31	43	13	6
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	3	16	29	52	6
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	1	25	32	36	6
Money to buy supplies on a day-to-day basis	12	6	20	57	6
Storage space for equipment and supplies	3	15	41	35	7
Space available for classroom preparation	5	20	56	13	6
Spaces for small groups to work	4	10	37	43	6
Availability of laboratory assistants or paraprofessional help	16	6	19	54	6

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA, BY SUBJECT AND GRADE RANGE
C. 7-9 MATHEMATICS

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	3	32	43	20	1
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	6	22	32	40	1
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	2	35	41	22	1
Money to buy supplies on a day-to-day basis	20	15	21	43	1
Storage space for equipment and supplies	3	19	48	30	1
Space available for classroom preparation	2	31	49	17	1
Spaces for small groups to work	8	12	29	49	2
Availability of laboratory assistants or paraprofessional help	28	4	14	51	2

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA
BY SUBJECT AND GRADE RANGE
D. 10-12 MATHEMATICS

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	2	37	41	18	2
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	9	20	40	30	1
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	6	47	33	13	1
Money to buy supplies on a day-to-day basis	25	11	25	39	1
Storage space for equipment and supplies	4	24	42	29	1
Space available for classroom preparation	4	36	46	13	1
Spaces for small groups to work	9	16	34	41	1
Availability of laboratory assistants or paraprofessional help	34	4	16	46	1

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA, BY SUBJECT AND GRADE RANGE

E. K-3 SCIENCE

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	17	10	34	27	12
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	14	9	23	46	8
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	22	8	21	38	10
Money to buy supplies on a day-to-day basis	18	5	18	49	10
Storage space for equipment and supplies	7	8	38	40	9
Space available for classroom preparation	6	10	44	30	10
Spaces for small groups to work	8	8	40	35	10
Availability of laboratory assistants or paraprofessional help	33	3	8	48	9

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA,
BY SUBJECT AND GRADE RANGE
F. 4-6 SCIENCE

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	8	11	33	42	6
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	5	14	22	55	5
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	6	13	22	53	6
Money to buy supplies on a day-to-day basis	10	6	19	57	8
Storage space for equipment and supplies	5	9	30	50	6
Space available for classroom preparation	4	10	30	50	6
Spaces for small groups to work	1	10	30	54	6
Availability of laboratory assistants or paraprofessional help	27	1	10	56	6

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA, BY SUBJECT AND GRADE RANGE

G. 7-9 SCIENCE

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	2	19	35	44	1
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	2	23	34	38	4
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	2	31	37	27	3
Money to buy supplies on a day-to-day basis	4	15	22	57	2
Storage space for equipment and supplies	1	23	32	42	4
Space available for classroom preparation	1	19	38	39	4
Spaces for small groups to work	2	12	26	56	4
Availability of laboratory assistants or paraprofessional help	8	5	12	72	4

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA, BY SUBJECT AND GRADE RANGE

H. 10-12 SCIENCE

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	1	31	33	34	2
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	1	24	38	35	2
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	2	30	45	21	2
Money to buy supplies on a day-to-day basis	5	12	35	47	2
Storage space for equipment and supplies	0	26	33	39	3
Space available for classroom preparation	0	32	38	28	2
Spaces for small groups to work	2	17	34	44	3
Availability of laboratory assistants or paraprofessional help	15	7	14	62	3

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA,
BY SUBJECT AND GRADE RANGE
I. K-3 SOCIAL STUDIES

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	10	19	51	12	9
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	3	17	45	26	8
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	18	9	39	27	8
Money to buy supplies on a day-to-day basis	16	4	26	46	9
Storage space for equipment and supplies	5	20	36	31	8
Space available for classroom preparation	7	22	46	17	9
Spaces for small groups to work	4	22	39	28	8
Availability of laboratory assistants or paraprofessional help	28	12	9	42	9

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA, BY SUBJECT AND GRADE RANGE

J. 4-6 SOCIAL STUDIES

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	16	22	43	13	6
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	4	26	36	28	5
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	5	22	30	38	5
Money to buy supplies on a day-to-day basis	19	5	19	53	5
Storage space for equipment and supplies	7	13	37	39	5
Space available for classroom preparation	8	18	50	20	5
Spaces for small groups to work	6	13	33	42	7
Availability of laboratory assistants or paraprofessional help	27	6	12	50	5

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA,
BY SUBJECT AND GRADE RANGE
K. 7-9 SOCIAL STUDIES

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	6	27	43	24	1
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	1	25	40	33	1
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	1	21	39	38	1
Money to buy supplies on a day-to-day basis	9	10	28	53	1
Storage space for equipment and supplies	4	16	42	38	1
Space available for classroom preparation	4	24	43	28	1
Spaces for small groups to work	5	4	36	53	2
Availability of laboratory assistants or paraprofessional help	28	4	14	54	1

Table B.33 (Continued)

PERCENT TEACHERS INDICATING THAT IMPROVEMENT IS NEEDED IN EACH AREA, BY SUBJECT AND GRADE RANGE

L. 10-12 SOCIAL STUDIES

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed	Missing
Facilities-building and classroom fixtures	4	33	45	17	1
Equipment-nonconsumable, nonperishable items such as microscopes, scales, etc.	4	21	41	32	1
Supplies-materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	2	21	37	39	1
Money to buy supplies on a day-to-day basis	17	7	20	52	4
Storage space for equipment and supplies	4	21	36	38	1
Space available for classroom preparation	3	28	41	27	2
Spaces for small groups to work	4	13	30	51	2
Availability of laboratory assistants or paraprofessional help	36	3	12	48	1

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Table B.34

TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
A. K-3 MATHEMATICS

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	75	14	10	1
Lesson planning	91	6	2	1
Learning new teaching methods	34	44	19	3
Actually teaching lessons	80	15	4	1
Obtaining information about instructional materials	34	43	23	1
Obtaining subject matter information	57	24	18	2
Implementing discovery/inquiry approach	49	38	11	3
Using manipulative or hands-on materials	59	24	15	2
Maintaining equipment	69	16	14	2
Working with small groups of students	59	27	12	1
Maintaining discipline	84	9	6	1
Articulating instruction across grade levels	66	24	7	4
Using calculators	59	23	6	12

Sample N = 297

Table B.34 (Continued)
TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
B. K-3 SCIENCE

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	58	19	12	11
Lesson planning	72	14	7	8
Learning new teaching methods	25	44	21	10
Actually teaching lessons	66	20	6	8
Obtaining information about instructional materials..	27	40	25	9
Obtaining subject matter information	35	33	21	11
Implementing discovery/inquiry approach	39	30	21	10
Using manipulative or hands-on materials	47	27	16	10
Maintaining equipment	49	29	11	11
Working with small groups of students	55	29	4	12
Maintaining discipline	79	7	3	10
Articulating instruction across grade levels	53	28	4	16
Maintaining live animals and plants	49	31	8	12

Sample N = 287

Table B.34 (Continued)

TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
C. K-3 SOCIAL STUDIES

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	68	17	9	6
Lesson planning	75	14	6	5
Learning new teaching methods	44	37	16	4
Actually teaching lessons	81	11	4	4
Obtaining information about instructional materials..	36	36	23	5
Obtaining subject matter information	47	31	17	6
Implementing discovery/inquiry approach	52	31	11	6
Using manipulative or hands-on materials	43	34	17	6
Maintaining equipment	66	15	14	6
Working with small groups of students	65	25	5	5
Maintaining discipline	87	6	4	3
Articulating instruction across grade levels	64	21	9	6

Sample N = 254

Table 34 (Continued)
TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
D. 4-6 MATHEMATICS

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	74	10	14	3
Lesson planning	85	6	6	3
Learning new teaching methods	34	37	26	3
Actually teaching lessons	78	12	5	4
Obtaining information about instructional materials	34	37	26	3
Obtaining subject matter information	57	21	19	3
Implementing discovery/inquiry approach	53	31	13	4
Using manipulative or hands-on materials	46	32	20	3
Maintaining equipment	68	11	16	6
Working with small groups of students	61	29	8	3
Maintaining discipline	86	7	5	3
Articulating instruction across grade levels	62	22	12	5
Using calculators	65	18	9	9

Sample N = 277

Table B.34 (Continued)
TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
E. 4-6 SCIENCE

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	69	18	7	6
Lesson planning	78	13	4	5
Learning new teaching methods	35	47	12	6
Actually teaching lessons	70	20	4	6
Obtaining information about instructional materials..	27	48	21	4
Obtaining subject matter information	44	35	16	6
Implementing discovery/inquiry approach	43	38	13	6
Using manipulative or hands-on materials	49	37	7	7
Maintaining equipment	55	28	10	7
Working with small groups of students	58	33	4	5
Maintaining discipline	81	11	3	5
Articulating instruction across grade levels	57	30	6	8
Maintaining live animals and plants	62	28	7	4

Sample N = 271

Table B.34 (Continued)
TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
F. 4-6 SOCIAL STUDIES

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	77	11	8	4
Lesson planning	84	11	3	3
Learning new teaching methods	35	44	14	8
Actually teaching lessons	80	13	4	3
Obtaining information about instructional materials..	30	48	20	3
Obtaining subject matter information	44	36	17	4
Implementing discovery/inquiry approach	43	44	8	5
Using manipulative or hands-on materials	40	42	13	5
Maintaining equipment	67	19	11	3
Working with small groups of students	62	30	4	4
Maintaining discipline	84	5	9	2
Articulating instruction across grade levels	54	35	5	6

Sample N = 281

Table B.34 (Continued)
TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
G. 7-9 MATHEMATICS

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	76	11	11	1
Lesson planning	91	4	4	1
Learning new teaching methods	40	40	19	2
Actually teaching lessons	88	7	3	1
Obtaining information about instructional materials	30	37	31	1
Obtaining subject matter information	59	20	20	2
Implementing discovery/inquiry approach	53	27	16	4
Using manipulative or hands-on materials	47	33	18	2
Maintaining equipment	65	12	21	2
Working with small groups of students	54	38	7	2
Maintaining discipline	77	11	12	1
Articulating instruction across grade levels	51	33	13	3
Using calculators	69	19	8	3

Sample N = 550

Table B.34 (Continued)
TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
H. 7-9 SCIENCE

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	73	13	12	2
Lesson planning	89	6	3	2
Learning new teaching methods	36	46	14	5
Actually teaching lessons	83	10	5	2
Obtaining information about instructional materials	30	47	21	2
Obtaining subject matter information	55	27	16	2
Implementing discovery/inquiry approach	50	38	9	2
Using manipulative or hands-on materials	55	34	8	3
Maintaining equipment	57	30	11	2
Working with small groups of students	59	34	5	2
Maintaining discipline	79	10	9	3
Articulating instruction across grade levels	55	29	11	5
Maintaining live animals and plants	61	27	6	6

Sample N = 535

Table B.34 (Continued)
TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
I. 7-9 SOCIAL STUDIES

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	65	17	15	3
Lesson planning	82	7	8	4
Learning new teaching methods	30	45	21	4
Actually teaching lessons	74	14	8	4
Obtaining information about instructional materials	20	50	26	4
Obtaining subject matter information	43	30	23	5
Implementing discovery/inquiry approach	41	46	9	5
Using manipulative or hands-on materials	42	40	14	5
Maintaining equipment	70	10	16	4
Working with small groups of students	64	26	7	3
Maintaining discipline	85	7	5	3
Articulating instruction across grade levels	56	30	10	4

Sample N = 453

Table B.34 (Continued)

TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE

J. 10-12 MATHEMATICS

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	77	7	15	1
Lesson planning	92	3	4	1
Learning new teaching methods	38	42	19	1
Actually teaching lessons	88	7	4	1
Obtaining information about instructional materials..	34	41	24	1
Obtaining subject matter information	58	21	19	2
implementing discovery/inquiry approach	56	35	7	2
Using manipulative or hands-on materials	53	35	11	2
Maintaining equipment	73	11	15	2
Working with small groups of students	65	28	6	1
Maintaining discipline	80	14	6	0
Articulating instruction across grade levels	57	33	9	1
Using calculators	75	16	8	1

Sample N = 1098

Table B.34 (Continued)
TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
K. 10-12 SCIENCE

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	65	17	11	7
Lesson planning	77	10	7	7
Learning new teaching methods	38	43	16	3
Actually teaching lessons	82	9	5	4
Obtaining information about instructional materials	32	41	23	4
Obtaining subject matter information	53	27	15	5
Implementing discovery/inquiry approach	51	36	9	5
Using manipulative or hands-on materials	53	34	8	5
Maintaining equipment	44	36	15	4
Working with small groups of students	58	31	7	5
Maintaining discipline	83	5	9	4
Articulating instruction across grade levels	48	40	7	5
Maintaining live animals and plants	56	25	13	6

Sample N = 586

Table B.34 (Continued)
TEACHER NEEDS FOR ASSISTANCE BY SUBJECT AND GRADE RANGE
L. 10-12 SOCIAL STUDIES

	Do Not Need Assistance	Do Not Receive Adequate Assistance	Receive Adequate Assistance	Missing
Establishing instructional objectives	69	20	8	4
Lesson planning	85	10	2	3
Learning new teaching methods	29	52	17	3
Actually teaching lessons	82	12	4	2
Obtaining information about instructional materials	26	52	20	2
Obtaining subject matter information	53	31	15	2
Implementing discovery/inquiry approach	46	43	8	2
Using manipulative or hands-on materials	46	43	8	4
Maintaining equipment	65	18	16	2
Working with small groups of students	68	27	3	2
Maintaining discipline	81	10	8	2
Articulating instruction across grade levels	55	35	8	2

Sample N = 490

Table B.35

TEACHERS' RATINGS OF THE UTILITY OF EACH OF A NUMBER OF SOURCES OF INFORMATION BY SUBJECT AND GRADE RANGE

A. MATHEMATICS

	K-3				4-6				7-9				10-12			
	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing
Teachers	3	48	47	3	2	47	49	3	5	36	56	4	4	56	39	1
Principals	23	52	23	2	19	53	23	4	29	47	22	3	47	41	11	1
Local Subject Specialists/Coordinators	31	44	21	5	26	49	20	5	33	44	18	6	36	42	16	7
State Department Personnel	62	28	5	5	60	26	8	6	66	27	3	4	67	[illegible]	4	7
College Courses	5	53	40	2	11	50	34	4	11	57	28	5	17	51	30	2
Local In-Service Programs	6	49	43	2	14	43	40	4	18	53	25	5	25	51	23	2
Federally Sponsored Workshops	28	35	32	15	26	32	23	18	33	33	16	19	37	30	19	14
Teacher Union Meetings	57	23	5	15	62	21	3	14	60	22	6	11	62	28	3	7
Meetings of Professional Organizations	27	53	14	6	31	48	13	9	25	49	22	4	24	45	25	6
Journals and Other Professional Publications	4	49	47	1	8	52	36	4	6	53	40	1	6	51	42	1
Publishers and Sales Representatives	29	60	8	3	27	57	10	6	29	59	9	3	41	46	11	2

Table B.35 (Continued)

TEACHERS' RATINGS OF THE UTILITY OF EACH OF A NUMBER OF SOURCES OF INFORMATION BY SUBJECT AND GRADE RANGE

B. SCIENCE

	K-3				4-6				7-9				10-12			
	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing
Teachers	3	36	61	1	6	40	52	2	7	40	52	1	4	54	38	4
Principals	12	54	33	1	16	59	23	3	42	45	13	1	49	39	9	3
Local Subject Specialists/Coordinators	25	42	27	6	25	47	21	7	48	33	17	3	48	36	11	5
State Department Personnel	63	27	6	4	58	31	3	7	65	26	7	2	63	26	4	8
College Courses	7	52	39	2	11	54	32	4	6	50	44	1	9	40	48	4
Local In-Service Programs	8	45	45	2	11	53	32	5	27	48	23	2	34	39	21	5
Federally Sponsored Workshops	30	37	21	13	28	38	22	13	28	39	26	7	36	24	29	11
Teacher Union Meetings	57	30	4	10	62	22	3	14	70	22	4	5	61	22	6	11
Meetings of Professional Organizations	29	46	20	6	28	47	17	8	29	48	21	3	24	44	27	6
Journals and Other Professional Publications	4	59	36	1	3	47	48	3	7	43	49	1	6	37	54	3
Publishers and Sales Representatives	31	56	12	2	26	56	12	6	35	55	9	2	30	55	10	5

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Table B.35 (Continued)

TEACHERS' RATINGS OF THE UTILITY OF EACH OF A NUMBER OF SOURCES OF INFORMATION BY SUBJECT AND GRADE RANGE

C. SOCIAL STUDIES

	K-3				4-6				7-9				10-12			
	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing
Teachers	1	39	58	2	4	51	44	1	6	49	45	1	4	52	42	2
Principals	13	59	26	2	21	50	28	1	26	52	19	3	40	42	15	2
Local Subject Specialists/Coordinators	20	45	28	8	31	48	17	4	32	43	22	4	33	52	11	5
State Department Personnel	64	28	2	6	58	33	4	5	60	29	5	5	64	28	5	3
College Courses	6	46	46	2	8	53	37	3	12	51	34	4	7	56	34	4
Local In-Service Programs	7	47	44	3	11	51	38	1	18	55	26	1	22	61	14	4
Federally Sponsored Workshops	31	33	16	20	23	37	25	15	32	39	16	13	42	35	13	10
Teacher Union Meetings	56	26	6	12	55	26	5	14	60	26	7	8	55	27	9	9
Meetings of Professional Organizations	27	50	16	7	31	50	13	7	24	49	22	6	18	56	20	5
Journals and Other Professional Publications	4	54	39	3	5	45	47	2	6	50	42	2	5	48	45	2
Publishers and Sales Representatives	24	57	14	5	23	64	20	4	30	56	11	3	32	51	12	5

Table B.36

PRINCIPAL RATINGS OF THE UTILITY OF EACH OF A NUMBER OF SOURCES OF INFORMATION, BY GRADE RANGE

Source	K-3 Not Useful	K-3 Somewhat Useful	K-3 Very Useful	K-3 Unknown	4-6 Not Useful	4-6 Somewhat Useful	4-6 Very Useful	4-6 Unknown
Teachers	4	51	44	1	3	49	46	2
Principals	3	51	45	2	5	56	38	1
Local Subject Specialists/Coordinators	7	38	41	13	5	40	48	6
State Department Personnel	49	38	10	3	40	44	12	4
College Courses	16	52	30	2	10	64	2[illegible]	2
Local In-Service Programs	8	44	47	2	8	50	41	2
Federally Sponsored Workshops	24	48	13	15	27	53	13	8
Teacher Union Meetings	66	17	1	16	72	18	1	9
Meetings of Professional Organizations	17	43	37	3	11	58	29	3
Journals and Other Professional Publications	1	41	58	0	1	48	50	1
Publishers and Sales Representatives	19	73	6	2	20	69	9	3

Table B.36 (Continued)

PRINCIPAL RATINGS OF THE UTILITY OF EACH OF A NUMBER OF SOURCES OF INFORMATION, BY GRADE RANGE

Source	7-9 Not Useful	7-9 Somewhat Useful	7-9 Very Useful	7-9 Unknown	10-12 Not Useful	10-12 Somewhat Useful	10-12 Very Useful	10-12 Unknown
Teachers	3	60	31	5	7	51	40	2
Principals	4	47	39	10	6	46	46	1
Local Subject Specialists/Coordinators	13	39	36	12	17	39	40	4
State Department Personnel	29	46	12	14	28	55	13	4
College Courses	12	51	34	3	14	65	17	3
Local In-Service Programs	8	60	30	2	20	53	25	2
Federally Sponsored Workshops	19	48	19	14	31	50	12	7
Teacher Union Meetings	59	16	0	25	77	16	1	6
Meetings of Professional Organizations	11	41	47	2	6	39	53	2
Journals and Other Professional Publications	0	27	71	2	3	43	53	1
Publishers and Sales Representatives	21	67	10	2	38	55	5	2

Table B.37

DISTRICT CURRICULUM RESPONDENTS' RATINGS OF THE UTILITY OF EACH OF A NUMBER OF SOURCES OF INFORMATION, BY SUBJECT AND GRADE RANGE

	K-6											
	Mathematics				Science				Social Studies			
	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing
Teachers	7	49	32	12	6	51	32	10	5	50	33	11
Principals	10	70	12	8	13	63	19	5	14	66	17	3
Local Subject Specialists/-Coordinators	26	45	20	8	21	42	30	8	27	43	26	4
State Department Personnel	33	52	9	5	36	50	13	1	33	55	12	0
College Courses	17	66	9	9	19	62	16	3	16	63	18	3
Local In-Service Programs	7	59	28	6	9	58	31	2	8	57	33	2
Federally Sponsored Workshops	22	49	18	10	19	46	27	9	24	49	22	5
Teacher Union Meetings	66	10	4	20	65	16	2	18	75	10	1	14
Meetings of Professional Organizations	9	56	30	6	10	58	32	0	17	62	22	0
Journals and Other Professional Publications	0	46	52	3	2	41	57	0	0	44	56	0
Publishers and Sales Representatives	20	56	19	5	20	60	20	0	18	66	16	0

Table B.37 (continued)

DISTRICT CURRICULUM RESPONDENTS' RATINGS OF THE UTILITY OF EACH OF A NUMBER OF SOURCES OF INFORMATION, BY SUBJECT AND GRADE RANGE

	7-12											
	Mathematics				Science				Social Studies			
	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing
Teachers	5	63	29	3	10	56	33	1	7	56	35	1
Principals	21	51	15	13	34	44	18	4	21	56	20	3
Local Subject Specialists/-Coordinators	31	36	12	21	33	41	19	7	36	36	15	14
State Department Personnel	29	44	13	14	36	50	13	1	35	50	12	3
College Courses	19	49	15	17	19	51	26	5	18	45	32	4
Local In-Service Programs	12	51	22	15	23	51	25	1	26	52	18	4
Federally Sponsored Workshops	33	36	11	19	33	37	24	5	45	34	12	10
Teacher Union Meetings	71	11	1	18	72	18	2	8	77	9	4	10
Meetings of Professional Organizations	10	56	31	3	8	49	42	1	12	52	30	6
Journals and Other Professional Publications	4	46	49	1	5	40	55	0	4	43	52	0
Publishers and Sales Representatives	17	65	14	4	17	67	14	2	19	68	10	4

Table B.38

STATE SUPERVISOR RATINGS OF THE UTILITY OF SOURCES OF INFORMATION, BY SUBJECT

	Mathematics				Science				Social Studies			
	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing	Not Useful	Somewhat Useful	Very Useful	Missing
Teachers	19	56	23	2	15	58	25	3	18	58	21	3
Principals	48	45	6	2	46	43	6	5	50	44	1	5
Local Subject Specialists	4	36	56	4	8	36	51	5	2	43	53	2
State Department Personnel	4	35	55	6	10	24	61	5	7	38	47	9
College Courses	36	54	6	4	20	67	10	3	29	57	9	5
Local In-Service Programs	16	56	22	6	5	61	31	3	6	68	20	7
Federally Sponsored Workshops	19	39	26	17	7	39	48	6	8	42	43	6
Teacher Union Meetings	79	6	0	15	74	16	2	8	71	10	0	19
Meetings of Professional Organizations	2	16	79	4	5	26	66	3	2	34	61	3
Journals and Other Professional Publications	0	8	91	2	0	26	72	2	0	13	84	3
Publishers and Sales Representatives	16	47	33	4	7	62	28	3	6	72	16	5
Sample N	50				61				62			

Table B.39

PERCENT OF TEACHERS INDICATING THAT EACH FACTOR IS A SERIOUS PROBLEM, SOMEWHAT OF A PROBLEM, OR NOT A SIGNIFICANT PROBLEM BY SUBJECT AND GRADE RANGE

A. ELEMENTARY MATHEMATICS

	K-3				4-6			
	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing
Belief that this subject is less important than other subjects	0	11	87	2	1	9	88	2
Compliance with Federal regulations	1	10	88	2	1	7	90	3
Inadequate facilities	2	30	66	2	3	28	65	3
Insufficient funds for purchasing equipment and supplies	15	33	51	2	11	43	44	3
Lack of materials for individualizing instruction	16	36	46	2	17	48	34	2
Out-of-date teaching materials	10	24	65	2	6	26	65	3
Insufficient numbers of textbooks	2	9	88	2	5	12	82	2
Lack of student interest in subject	3	22	72	2	5	40	53	2
Inadequate student reading abilities	10	45	44	1	21	47	29	3
Lack of teacher interest in subject	4	15	80	1	1	10	87	2
Teachers inadequately prepared to teach subject	5	21	73	1	2	15	82	2
Lack of teacher planning time	13	34	52	2	16	34	48	3
Not enough time to teach subject	3	30	66	1	5	15	78	2
Class sizes too large	16	35	48	2	17	40	42	2
Difficulty in maintaining discipline	4	26	70	1	8	25	65	2
Inadequate articulation of instruction across grade levels	6	27	66	2	9	35	54	2
Inadequate diversity of electives	3	11	78	9	4	18	71	7
Low enrollments in courses	1	5	86	9	1	3	90	6
Sample N =	297				277			

Table B.39 (Continued)

PERCENT OF TEACHERS INDICATING THAT EACH FACTOR IS A SERIOUS PROBLEM, SOMEWHAT OF A PROBLEM, OR NOT A SIGNIFICANT PROBLEM BY SUBJECT AND GRADE RANGE

B. SECONDARY MATHEMATICS

	7-9				10-12			
	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing
Belief that this subject is less important than other subjects	2	20	78	1	5	26	68	0
Compliance with Federal regulations	2	10	85	3	2	5	91	2
Inadequate facilities	10	34	56	1	7	39	54	0
Insufficient funds for purchasing equipment and supplies	13	42	44	1	15	48	37	0
Lack of materials for individualizing instruction	21	43	36	1	19	43	38	1
Out-of-date teaching materials	7	26	66	1	9	27	65	0
Insufficient numbers of textbooks	8	16	76	1	6	21	73	0
Lack of student interest in subject	31	53	16	1	30	43	26	1
Inadequate student reading abilities	42	47	10	1	39	50	11	0
Lack of teacher interest in subject	2	10	87	1	2	15	83	1
Teachers inadequately prepared to teach subject	5	17	77	1	1	11	88	0
Lack of teacher planning time	6	27	67	1	4	33	63	0
Not enough time to teach subject	4	23	73	1	4	30	66	0
Class sizes too large	23	42	35	1	24	35	40	1
Difficulty in maintaining discipline	12	35	53	1	11	31	57	0
Inadequate articulation of instruction across grade levels	10	42	47	1	16	40	44	1
Inadequate diversity of electives	6	31	61	2	12	33	55	0
Low enrollments in courses	4	16	78	3	7	30	64	0
Sample N =	550				1098			

Table B.39 (Continued)

PERCENT OF TEACHERS INDICATING THAT EACH FACTOR IS A SERIOUS PROBLEM, SOMEWHAT OF A PROBLEM, OR NOT A SIGNIFICANT PROBLEM BY SUBJECT AND GRADE RANGE

C. ELEMENTARY SCIENCE

	K-3				4-6			
	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing
Belief that this subject is less important than other subjects	7	40	50	5	8	47	43	3
Compliance with Federal regulations	3	14	69	14	4	19	68	10
Inadequate facilities	25	41	30	4	32	46	21	1
Insufficient funds for purchasing equipment and supplies	28	33	33	6	30	40	26	3
Lack of materials for individualizing instruction	29	37	30	4	31	42	25	2
Out-of-date teaching materials	17	24	54	6	14	35	48	3
Insufficient number of textbooks	10	14	67	9	11	15	71	3
Lack of student interest in subject	2	14	75	9	4	37	58	1
Inadequate student reading abilities	10	37	46	8	22	49	26	3
Lack of teacher interest in subject	4	40	47	9	5	31	62	2
Teachers inadequately prepared to teach subject	8	46	38	8	9	37	50	3
Lack of teacher planning time	21	35	36	8	22	44	32	2
Not enough time to teach subject	25	29	42	4	12	38	49	1
Class sizes too large	11	31	54	4	12	30	56	3
Difficulty in maintaining discipline	4	17	75	5	5	25	66	3
Inadequate articulation of instruction across grade levels	7	30	53	10	10	43	43	5
Inadequate diversity of electives	8	22	55	15	8	24	59	10
Low enrollments in courses	2	6	79	13	2	6	80	13
Sample N =	287				271			

Table B.39 (Continued)

PERCENT OF TEACHERS INDICATING THAT EACH FACTOR IS A SERIOUS PROBLEM, SOMEWHAT OF A PROBLEM, OR NOT A SIGNIFICANT PROBLEM BY SUBJECT AND GRADE RANGE

D. SECONDARY SCIENCE

	7-9				10-12			
	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing
Belief that this subject is less important than other subjects	9	29	61	1	5	39	53	3
Compliance with Federal regulations	3	14	81	3	3	7	85	5
Inadequate facilities	26	40	34	0	20	42	36	3
Insufficient funds for purchasing equipment and supplies	24	39	36	1	27	42	28	3
Lack of materials for individualizing instruction	27	36	37	0	28	46	23	3
Out-of-date teaching materials	10	37	53	1	8	34	54	5
Insufficient numbers of textbooks	7	16	77	0	6	16	74	4
Lack of student interest in subject	19	46	35	0	20	48	28	4
Inadequate student reading abilities	40	47	13	0	45	41	11	3
Lack of teacher interest in subject	2	17	80	0	1	21	74	4
Teachers inadequately prepared to teach subject	3	23	74	0	2	27	67	4
Lack of teacher planning time	7	31	61	1	14	45	38	2
Not enough time to teach subject	4	31	65	1	10	38	49	4
Class sizes too large	19	44	37	0	22	35	41	3
Difficulty in maintaining discipline	6	30	64	0	9	31	58	3
Inadequate articulation of instruction across grade levels	10	46	42	3	11	50	35	5
Inadequate diversity of electives	8	43	49	0	11	39	47	3
Low enrollments in courses	4	12	83	1	7	30	59	4
Sample N =	535				586			

Table B.39 (Continued)

PERCENT OF TEACHERS INDICATING THAT EACH FACTOR IS A SERIOUS PROBLEM, SOMEWHAT OF A PROBLEM, OR NOT A SIGNIFICANT PROBLEM BY SUBJECT AND GRADE RANGE

E. ELEMENTARY SOCIAL STUDIES

	K-3				4-6			
	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing
Belief that this subject is less important than other subjects	8	42	47	4	12	40	46	3
Compliance with Federal regulations	2	15	77	6	2	13	81	5
Inadequate facilities	11	30	55	5	8	37	52	2
Insufficient funds for purchasing equipment and supplies	18	36	43	4	23	35	40	3
Lack of materials for individualizing instruction	23	43	31	3	25	42	31	2
Out-of-date teaching materials	17	32	47	4	21	29	48	2
Insufficient numbers of textbooks	11	17	67	5	11	19	68	3
Lack of student interest in subject	4	23	70	4	9	36	52	3
Inadequate student reading abilities	14	47	35	4	27	46	25	2
Lack of teacher interest in subject	4	31	62	3	8	15	76	2
Teachers inadequately prepared to teach subject	3	29	65	4	8	16	74	3
Lack of teacher planning time	18	35	44	3	22	32	45	2
Not enough time to teach subject	19	46	33	3	11	21	67	2
Class sizes too large	12	27	59	3	20	24	54	2
Difficulty in maintaining discipline	4	18	75	3	5	20	73	2
Inadequate articulation of instruction across grade levels	9	33	55	3	9	33	54	4
Inadequate diversity of electives	7	23	58	12	4	19	69	8
Low enrollments in courses	1	8	78	14	1	1	90	9
[a] Sample N =	254				281			

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Table B.39 (Continued)

PERCENT OF TEACHERS INDICATING THAT EACH FACTOR IS A SERIOUS PROBLEM, SOMEWHAT OF A PROBLEM, OR NOT A SIGNIFICANT PROBLEM BY SUBJECT AND GRADE RANGE

F. SECONDARY SOCIAL STUDIES

	7-9				10-12			
	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Missing
Belief that this subject is less important than other subjects	9	36	54	1	18	39	41	2
Compliance with Federal regulations	5	10	83	2	1	14	83	2
Inadequate facilities	16	41	43	2	14	35	50	1
Insufficient funds for purchasing equipment and supplies	30	40	29	1	25	41	33	1
Lack of materials for individualizing instruction	37	45	18	1	32	42	25	1
Out-of-date teaching materials	21	39	39	1	16	37	47	0
Insufficient numbers of textbooks	13	26	61	1	13	19	68	0
Lack of student interest in subject	21	58	21	0	19	60	21	0
Inadequate student reading abilities	49	42	8	1	48	41	10	1
Lack of teacher interest in subject	2	12	85	1	3	21	75	1
Teachers inadequately prepared to teach subject	3	17	80	0	2	23	74	1
Lack of teacher planning time	8	25	67	0	16	28	56	0
Not enough time to teach subject	5	23	72	0	8	25	67	1
Class sizes too large	22	38	39	0	22	38	39	0
Difficulty in maintaining discipline	7	28	64	0	5	29	65	1
Inadequate articulation of instruction across grade levels	13	37	49	0	14	49	36	2
Inadequate diversity of electives	16	33	50	1	15	39	46	0
Low enrollments in courses	1	12	86	1	4	21	75	1
Sample N =	453				490			

Table B.40

PERCENT OF PRINCIPALS INDICATING THAT EACH FACTOR IS A SERIOUS PROBLEM IN THEIR SCHOOL, BY SUBJECT AND GRADE RANGE

Factor	Mathematics				Science				Social Studies				Reading/ Language Arts/English			
	K-3	4-6	7-9	10-12	K-3	4-6	7-9	10-12	K-3	4-6	7-9	10-12	K-3	4-6	7-9	10-12
Belief that this subject is less important than other subjects	1	1	3	8	28	24	11	5	19	25	18	20	1	1	2	2
Compliance with Federal regulations	3	9	4	3	3	7	1	4	3	6	0	3	7	11	7	5
Inadequate facilities	6	9	11	5	43	43	41	18	6	9	9	6	3	7	14	14
Insufficient funds for purchasing equipment and supplies	20	17	15	15	42	38	32	24	23	19	17	13	16	12	13	16
Lack of materials for individualizing instruction	17	16	14	23	32	29	21	18	20	25	22	19	13	10	16	21
Out-of-date teaching materials	5	4	6	7	20	15	11	10	14	15	14	10	1	1	3	2
Insufficient numbers of textbooks	2	1	4	3	5	5	5	3	6	7	6	5	2	1	3	2
Lack of student interest in subject	6	8	22	23	7	9	19	21	10	15	22	21	4	6	18	21
Inadequate student reading abilities	8	12	24	29	18	27	40	44	24	28	44	50	14	15	33	41
Lack of teacher interest in subject	1	2	1	4	24	21	8	1	6	4	2	4	1	1	5	8
Teachers inadequately prepared to teach subject	3	6	3	2	29	29	6	2	7	5	1	5	4	5	8	9
Lack of teacher planning time	13	15	7	3	25	18	8	5	17	16	7	4	13	15	8	4
Not enough time to teach subject	3	5	1	0	21	14	8	1	15	18	6	1	3	6	5	5
Class sizes too large	9	10	13	8	11	12	12	13	9	10	13	14	10	12	11	7
Difficulty in maintaining discipline	2	4	5	6	5	9	7	6	4	9	7	4	2	4	4	6
Inadequate articulation of instruction across grade levels	8	9	14	14	13	17	15	13	10	14	13	15	5	8	12	8
Inadequate diversity of electives	1	1	5	11	1	2	7	12	1	2	7	14	2	3	6	10
Low enrollments in courses	0	0	8	21	0	0	8	20	0	0	1	3	0	0	2	6
Sample N	317	292	298	270	317	292	298	270	317	292	298	270	317	292	298	270

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Table B.41

DISTRICT CURRICULUM QUESTIONNAIRE RESPONDENTS' RATINGS OF PROBLEMS AFFECTING INSTRUCTION IN THEIR DISTRICT BY GRADE RANGE

A. Mathematics

	Percent of Districts							
	K-6				7-12			
Factor	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Unknown	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Unknown
Belief that this subject is less important than other subjects	1	8	90	0	7	20	71	1
Compliance with Federal regulations	1	5	91	3	0	4	87	9
Inadequate facilities	4	19	76	1	6	22	70	2
Insufficient funds for purchasing equipment and supplies	5	41	53	0	6	35	57	2
Lack of materials for individualizing instruction	6	44	49	0	12	37	46	5
Out-of-date teaching materials	2	15	82	1	1	14	81	4
Insufficient numbers of textbooks	1	4	95	0	1	8	87	4
Lack of student interest in subject	5	36	58	0	21	62	13	4
Inadequate student reading abilities	15	54	30	0	33	45	21	1
Lack of teacher interest in subject	3	27	69	0	3	14	81	2
Teachers inadequately prepared to teach subject	9	32	59	0	2	17	79	2
Lack of teacher planning time	6	34	59	0	3	22	72	2
Not enough time to teach subject	3	30	67	0	1	15	80	4
Class sizes too large	6	33	60	0	3	32	62	2
Difficulty in maintaining discipline	1	20	79	0	1	29	66	3
Inadequate articulation of instruction across grade levels	6	41	52	0	10	39	45	6
Inadequate diversity of electives	1	22	74	2	6	30	57	6
Low enrollments in courses	3	5	89	3	9	38	47	6
Sample N	327				321			

Table B.41 (continued)

DISTRICT CURRICULUM QUESTIONNAIRE RESPONDENTS' RATINGS OF PROBLEMS AFFECTING INSTRUCTION IN THEIR DISTRICT BY GRADE RANGE

B. Science

Factor	Percent of Districts							
	K-6				7-12			
	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Unknown	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Unknown
Belief that this subject is less important than other subjects	13	44	41	2	3	29	64	4
Compliance with Federal regulations	1	10	79	9	1	5	86	8
Inadequate facilities	15	38	45	2	13	34	47	5
Insufficient funds for purchasing equipment and supplies	19	38	41	2	19	38	38	5
Lack of materials for individualizing instruction	15	39	44	2	16	43	35	5
Out-of-date teaching materials	13	21	63	2	8	24	63	5
Insufficient numbers of textbooks	7	9	81	2	1	11	81	7
Lack of student interest in subject	5	28	65	2	15	50	33	2
Inadequate student reading abilities	17	57	24	2	28	59	7	5
Lack of teacher interest in subject	13	46	28	13	1	17	77	5
Teachers inadequately prepared to teach subject	19	58	21	2	3	15	76	5
Lack of teacher planning time	8	37	53	2	4	32	59	5
Not enough time to teach subject	10	40	48	2	3	22	70	5
Class sizes too large	7	27	64	2	4	34	57	4
Difficulty in maintaining discipline	1	17	80	2	7	22	66	5
Inadequate articulation of instruction across grade levels	11	36	50	3	12	40	42	5
Inadequate diversity of electives	6	11	77	6	4	37	55	5
Low enrollments in courses	3	5	83	9	7	39	49	5
Sample N	326				318			

Table B.41 (continued)

DISTRICT CURRICULUM QUESTIONNAIRE RESPONDENTS' RATINGS OF PROBLEMS AFFECTING INSTRUCTION IN THEIR DISTRICT BY GRADE RANGE

C. Social Studies

	Percent of Districts							
	K-6				7-12			
	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Unknown	Serious Problem	Somewhat of a Problem	Not a Significant Problem	Unknown
Belief that this subject is less important than other subjects	4	38	54	4	11	31	57	1
Compliance with Federal regulations	2	3	90	5	2	3	89	7
Inadequate facilities	4	11	82	4	7	25	64	4
Insufficient funds for purchasing equipment and supplies	9	34	55	2	13	42	40	5
Lack of materials for individualizing instruction	12	36	50	2	18	39	36	7
Out-of-date teaching materials	9	21	68	2	8	23	64	6
Insufficient numbers of textbooks	4	10	82	4	8	13	75	3
Lack of student interest in subject	2	38	58	2	15	51	31	3
Inadequate student reading abilities	14	57	26	2	33	51	13	3
Lack of teacher interest in subject	3	37	57	2	0	17	79	4
Teachers inadequately prepared to teach subject	6	36	56	2	3	19	75	3
Lack of teacher planning time	5	35	57	2	6	27	64	3
Not enough time to teach subject	6	30	61	2	1	21	74	3
Class sizes too large	6	23	69	2	9	34	54	3
Difficulty in maintaining discipline	1	18	78	3	1	19	76	3
Inadequate articulation of instruction across grade levels	8	36	52	4	12	39	43	6
Inadequate diversity of electives	1	26	68	4	10	36	53	1
Low enrollments in courses	3	3	90	4	1	11	84	3
Sample N	303				298			

Table B.42

STATE SUPERVISOR RATINGS OF PROBLEMS AFFECTING INSTRUCTION IN THEIR STATE

A. Mathematics

Factor	Serious Problem: K-6 only	Serious Problem: 7-12 only	Serious Problem: K-6 and 7-12	Not a Serious Problem	Unknown
Belief that this subject is less important than other subjects	12	7	10	67	5
Compliance with Federal regulations	3	0	11	81	5
Inadequate facilities	3	0	22	69	7
Insufficient funds for purchasing equipment and supplies	7	2	66	16	9
Lack of materials for individualizing instruction	5	10	51	30	5
Out-of-date teaching materials	5	2	27	61	5
Insufficient numbers of textbooks	0	2	17	76	5
Lack of student interest in subject	0	38	35	18	9
Inadequate student reading abilities	3	19	56	16	7
Lack of teacher interest in subject	46	5	15	25	9
Teachers inadequately prepared to teach subject	56	3	21	13	7
Lack of teacher planning time	34	3	31	28	5
Not enough time to teach subject	32	0	8	56	5
Class sizes too large	0	5	31	60	5
Difficulty in maintaining discipline	0	16	14	63	7
Inadequate articulation of instruction across grade levels	12	0	75	9	5
Inadequate diversity of electives	0	43	7	46	5
Low enrollments in courses	0	54	2	37	7

Table 3.42 (continued)

STATE SUPERVISOR RATINGS OF PROBLEMS AFFECTING INSTRUCTION IN THEIR STATE

B. Science

Factor	Serious Problem K-6 only	Serious Problem 7-12 only	Serious Problem K-6 and 7-12	Not a Serious Problem	Unknown
Belief that this subject is less important than other subjects	51	0	20	18	10
Compliance with Federal regulations	0	2	4	84	10
Inadequate facilities	15	4	35	39	8
Insufficient funds for purchasing equipment and supplies	8	4	68	12	8
Lack of materials for individualizing instruction	4	4	61	20	10
Out-of-date teaching materials	15	4	26	45	10
Insufficient numbers of textbooks	10	0	10	68	12
Lack of student interest in subject	2	24	13	51	10
Inadequate student reading abilities	0	14	53	23	10
Lack of teacher interest in subject	47	2	13	28	10
Teachers inadequately prepared to teach subject	51	2	20	16	10
Lack of teacher planning time	26	2	33	29	10
Not enough time to teach subject	49	2	12	26	10
Class sizes too large	6	10	35	37	12
Difficulty in maintaining discipline	0	15	16	59	10
Inadequate articulation of instruction across grade levels	4	4	61	21	10
Inadequate diversity of electives	2	33	18	39	8
Low enrollments in courses	2	40	10	39	8

Table B.42 (continued)

STATE SUPERVISOR RATINGS OF PROBLEMS AFFECTING INSTRUCTION IN THEIR STATE

C. Social Studies

Factor	Serious Problem: K-6 only	Serious Problem: 7-12 only	Serious Problem: K-6 and 7-12	Not a Serious Problem	Unknown
Belief that this subject is less important than other subjects	38	4	27	29	2
Compliance with Federal regulations	2	2	7	80	9
Inadequate facilities	0	0	14	71	15
Insufficient funds for purchasing equipment and supplies	2	0	53	34	11
Lack of materials for individualizing instruction	4	8	44	33	11
Out-of-date teaching materials	2	0	40	43	15
Insufficient numbers of textbooks	4	2	7	70	17
Lack of student interest in subject	0	28	38	28	6
Inadequate student reading abilities	0	10	59	22	9
Lack of teacher interest in subject	23	13	14	37	13
Teachers inadequately prepared to teach subject	23	7	27	30	13
Lack of teacher planning time	21	2	29	32	16
Not enough time to teach subject	35	5	10	37	14
Class sizes too large	5	5	14	61	15
Difficulty in maintaining discipline	0	9	13	61	18
Inadequate articulation of instruction across grade levels	2	4	79	8	7
Inadequate diversity of electives	2	19	19	49	11
Low enrollments in courses	2	13	4	69	13

APPENDIX C

Estimation and Sampling Error Computation Procedures

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Estimation and Sampling Error Computation Procedures

A. Computation of Sampling Weights and Nonresponse Weight Adjustments

Since all of the samples selected for this study are probability samples, it is possible to make unbiased estimates of population characteristics from properly weighted sample data and to calculate the estimated sampling error associated with these population estimates. The weights used in making these estimates are determined from the probabilities of selecting the sample members. Since a multi-stage design was used to select the sample members, each final weight will consist of several components.

A zone sampling technique in which a district could be selected more than once was used in the district selection phase. (If a district was selected more than once, additional schools were selected.) The district weight component assigned the district depended on the number of zones in which the district was included and the number of times the district was selected. In general, each sample member was assigned a weight equal to the reciprocal of the probability of its being selected into the sample except for those districts included in more than one zone.

The computation of the overall probability of selecting a sample member depends on the number of sampling stages involved in selecting the sample members. For example, the probability of selecting a district supervisor or superintendent is given by

$$\begin{bmatrix}\text{overall}\\ \text{probability}\\ \text{of selecting}\\ \text{supervisor}\end{bmatrix} = \begin{bmatrix}\text{probability of}\\ \text{selecting PSU}\end{bmatrix} \times \begin{bmatrix}\text{probability of}\\ \text{selecting district}\\ \text{given the zones in}\\ \text{which it was included}\\ \text{and given the PSU was selected}\end{bmatrix}.$$

The probability of selecting a principal has an additional component since the principal or school sample involved an additional sampling stage. The probability of selecting a principal is given by:

$$\begin{bmatrix}\text{overall}\\ \text{probability}\\ \text{of selecting}\\ \text{principal}\end{bmatrix} = \begin{bmatrix}\text{probability of}\\ \text{selecting PSU}\end{bmatrix} \times \begin{bmatrix}\text{probability}\\ \text{of selecting}\\ \text{district given}\\ \text{zone and}\\ \text{PSU}\end{bmatrix} \times \begin{bmatrix}\text{probability}\\ \text{of selecting}\\ \text{school given}\\ \text{the district}\\ \text{was selected}\end{bmatrix}.$$

Since the sample of teachers involved still another sampling stage, its overall probability is given by the product of four components:

$$\begin{bmatrix}\text{overall}\\ \text{probability}\\ \text{of selecting}\\ \text{a teacher}\end{bmatrix} = \begin{bmatrix}\text{probability}\\ \text{of}\\ \text{selecting}\\ \text{PSU}\end{bmatrix} \times \begin{bmatrix}\text{probability of}\\ \text{selecting}\\ \text{district}\\ \text{given zone}\\ \text{and PSU}\end{bmatrix} \times \begin{bmatrix}\text{probability of}\\ \text{selecting school}\\ \text{given the}\\ \text{district was}\\ \text{selected}\end{bmatrix} \times \begin{bmatrix}\text{probability}\\ \text{of selecting}\\ \text{the teacher}\\ \text{given the}\\ \text{school was}\\ \text{selected}\end{bmatrix}$$

The sampling weight assigned a sample member was then determined by taking the reciprocal of the overall probability of selecting that member. For example, each teacher was assigned a weight defined as

$$(\text{teacher weight}) = \frac{1}{(\text{overall probability of selecting the teacher})} .$$

Since there was some nonresponse at the various selection stages (district, school, or teacher level), the final weight used in the computations of the population estimates and associated sampling error estimates involved a nonresponse adjustment factor. Nonresponse adjustment factors were determined within a given weighting class. This weighting class could be a school, a subject matter within a school, a district, a stratum, a size and/or type of district or school, a geographical region, a size and type of community, or a combination of any of the above.

For weighting class-h and sample member hi, the nonresponse adjustment factor-f_{hi} is given by

$$f_{hi} = \frac{\sum_{i=1}^{n_h} W_{hi}}{\sum_{i=1}^{n_h(r)} W_{hi}(r)} ,$$

where

W_{hi} = weight for sample member hi,

n_h = number of sample members in weighting class-h,

$W_{hi}(r)$ = weight for sample respondent member hi, and

$n_h(r)$ = number of sample respondent members in weighting class-h.

Thus, the sum of the weights for all respondent members in weighting class h is given by

$$\sum_{i=1}^{n_h(r)} W_{hi}(r) \cdot f_{hi} = \sum_{i=1}^{n_h} W_{hi}$$

which is the total weight of both respondents and nonrespondents in the weighting class.

The purpose of defining weighting classes was to adjust the weight of the sample respondent members most similar to the nonrespondent sample members. This in effect states the estimates of population characteristics of the nonresponding members are equal to corresponding population estimates of responding members within weighting class.

The equations used in computing the population estimates and their associated sampling error estimates are developed in sections B and C. Constructing generalized sampling error tables is discussed in section D.

B. Estimation of Population Characteristics

To estimate population proportions, define the following variables:

$$Y_{hij} = \begin{cases} 1 \text{ if sample member (hij) belongs to subpopulation of interest and gives the indicated response to a given item.} \\ 0 \text{ otherwise.} \end{cases}$$

For each reporting group or subpopulation of interest, define an indicator variable X_{hij} by

$$X_{hij} = \begin{cases} 1 \text{ if sample member (hij) belongs to be reporting group or subpopulation of interest.} \\ 0 \text{ otherwise.} \end{cases}$$

Let h define the stratum, of which there are a total of 59; i define the PSU within stratum, of which there are generally two; and j define the sample member within PSU. Then

W_{hij} = the weight adjusted for any nonresponse assigned sample respondent member (hij),

m_{hi} = the number of respondent sample members in PSU-i, stratum-h,

n_h = the number of PSU's in stratum-h which in general is 2, and

L = the number of strata involved in the computation, which is generally 59.

The sample estimate, $\hat{p}$, of a population proportion is then given by

$$\hat{p} = \frac{\sum_{h=1}^{L} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} W_{hij} Y_{hij}}{\sum_{h=1}^{L} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} W_{hij} X_{hij}} . \qquad (1)$$

The above equation can also be used to compute means or averages, such as, average number of textbooks used in a particular class, average amount of time spent on math per day in grades K-6, average enrollment in a physics class, etc., by using the actual value of the desired variable for Y_{hij} instead of the zero-one values as defined.

If totals are wanted, they can be obtained using two methods. Calculate the mean or average, and if the population total for X is known (actual number of schools, number of classes, etc), multiply the above ratio estimate ($\hat{p}$) by the population total X. For example, to estimate total number of different textbooks used in a particular study, first calculate the average number of different textbooks per school, then multiply by the number of schools.

Another method of obtaining the estimate for a population total is as follows:

Let Y_{hij} = sample total for member (hij)

then $\hat{Y}$ is the sample estimate of the population total and is given by

$$\hat{Y} = \sum_{h=1}^{L} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} W_{hij} Y_{hij} . \qquad (2)$$

For example, let Y_{hij} = total number of physics students in school j, then $\hat{Y}$ is the estimate of the total number of physics students in the nation. This estimate could also be obtained by first calculating the average number of physics students per school and then multiplying by the total number of schools.

C. Estimating Precision of the Survey Data

The variance of a proportion or ratio estimator defined by eq. (1) in section B will be developed in this section. Let

$$\hat{Y} = \sum_{h=1}^{L} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} W_{hij} Y_{hij}$$

where

Y_{hij} = either the zero-one variable defined for a proportion or a discrete variable (such as number of students, etc.)

and

$$\hat{X} = \sum_{h=1}^{L} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} W_{hij} X_{hij} ,$$

then

$$\hat{p} = \frac{\hat{Y}}{\hat{X}} .$$

The estimate of the variance is then given by

$$\widehat{\operatorname{var}(\hat{p})} = \frac{1}{(\hat{X})^2} \left[\operatorname{var}(\hat{Y}) + \hat{p}^2 \operatorname{var}(\hat{X}) - 2\hat{p} \operatorname{cov}(\hat{Y},\hat{X})\right] . \qquad (3)$$

A more compact way of writing equation (3) for the estimated variance can be expressed as follows: Let

$$Z_{hij} = \frac{W_{hij} Y_{hij} - \hat{p} W_{hij} X_{hij}}{\hat{X}} , \qquad (4)$$

then

$$\widehat{\operatorname{var}(\hat{p})} \doteq \sum_{h=1}^{L} \frac{\sum_{i=1}^{n_h} (Z_{hi+} - Z_{h.+})^2 \cdot n_h}{n_h - 1} , \qquad (5)$$

where

$$Z_{hi+} = \sum_{j=1}^{m_{hi}} Z_{hij} \quad \text{and} \quad Z_{h.+} = \frac{1}{n_h} Z_{hi+} , \qquad (6)$$

and ignoring the finite population coefficient (FDC). In some cases the FDC is not needed since with replacement sampling of districts was employed.

The sampling error or standard error is obtained by taking the square root of the variance.

In a similar fashion the sampling error for the estimated difference between two ratios or proportions can be obtained. Let,

$\hat{p}_1$ = the estimated proportion for population group (1) (or item 1) and

$\hat{p}_2$ = the estimated proportion for population group (2) (or item 2),

then the estimated difference between the two population proportions (or the two item proportions) is given by

$$\hat{p}_1 - \hat{p}_2 \quad .$$

The estimated variance of $(\hat{p}_1 - \hat{p}_2)$ is given by

$$\text{var}(\hat{p}_1 - \hat{p}_2) = \text{var}\ \hat{p}_1 + \text{var}\ \hat{p}_2 - 2\ \text{cov}(\hat{p}_1, \hat{p}_2) \quad . \tag{7}$$

When the two proportions are obtained from independent samples, the covariance term is zero. Many times the two proportions are highly correlated as, for example, K-3 teachers may respond very similarly to 4-6 teachers on a given item. In this case, the covariance term is positive and the $\text{var}(\hat{p}_1 - \hat{p}_2)$ can be very small. A form similar to equation (5) can be derived by defining

$$D_{hij} = Z_{hij}(1) - Z_{hij}(2) \tag{8}$$

where $Z_{hij}(1)$ was defined in eq. (4) when estimating $\hat{p}_1$ and $Z_{hij}(2)$ was similarly defined when estimating $\hat{p}_2$. Then

$$D_{hi+} = \sum_{j=1}^{m_{hi}} D_{hij} \quad \text{and} \tag{9}$$

$$D_{hi.} = \frac{1}{m_{hi}} D_{hi+} \quad . \tag{10}$$

Then eq. (7) can be written as

$$\hat{var}(\hat{p}_1 - \hat{p}_2) \doteq \sum_{h=1}^{L} \frac{n_h \left(\sum_{i=1}^{n_h} D_{hi+} - D_{h.+} \right)^2}{n_h - 1} \qquad (11)$$

The sampling error of the difference is then the square root of the estimated variance as calculated above.

D. Constructing Generalized Sampling Error Tables

In order to construct a generalized sampling error table, a measure for indicating the inefficiency of the sample design must be defined. The design effect (DEFF) is a measure of the inefficiency of the design compared to a simple random sample design of the same size. The DEFF is defined by

$$\text{DEFF} = \frac{\text{Sampling variance calculated for design used}}{\text{Sampling variance for a simple random sample of the same size}}.$$

A DEFF greater than one indicates that the sample design is less efficient than a simple random sample; that is, the estimated variance for the survey is greater than the variance for a simple random sample of the same size. A DEFF less than one indicates the sample design is more efficient than a simple random sample.

Usually, stratification prior to sample selection decreases the DEFF making the sample more efficient by decreasing the size of the sampling error. Cluster designs and designs in which the final selection probabilities (and hence the weights) are very unequal serve to increase the size of the DEFF and the corresponding sampling error. Nonresponse can drastically affect the weights causing a sample in which sample members originally had approximately equal weights to have very unequal weights and thus a larger sampling error than originally planned.

DEFFs are used in the production of generalized sampling error tables. After sampling errors have been calculated for a specified number of proportions and reporting groups, the DEFFs are averaged for those proportions of like magnitude and denominators of similar size within the same type of reporting group. Once the average DEFF is obtained, the sampling error for a given proportion $\hat{p}$, sample size n, and reporting group can be determined using the generalized table or calculated by

$$SE(\hat{p}) = \sqrt{DEFF\ \hat{p}(1-\hat{p})/(n-1)}$$

where $\hat{p}$ is the estimated proportion and n the sample size. The value of $\hat{p}(1-\hat{p})/(n-1)$ is the estimated variance of $\hat{p}$ based on a simple random sample. The entries in the generalized sampling error tables are based on average DEFFs obtained from many different items. They can differ for different values of $\hat{p}$, different sample sizes, and types of reporting groups. Thus, they provide only a general order of magnitude of the sampling error of any given estimated proportion.

Table C.1 is a generalized table of sampling errors (or standard errors) for estimates based on data collected from teachers in this study; Tables C.2, C.3 and C.4 present standard error estimates for principal, superintendent, and district program questionnaire respondents.

The following examples will illustrate the use of these tables. In Chapter 4 it was estimated that 5 percent of grade 10-12 social studies teachers have attended one or more NSF-sponsored workshops, institutes, or conferences. Table C.1 (teacher standard errors) would be entered with the p-value (in this case 5 percent) determining the column and the sample size determining the row. Since there is no row for N = 490, the 500 row would be used.[1/] The intersection of the 5 percent column and the 450 row indicates that the standard error is 1.15. The 95 percent confidence interval for the percent of teachers is the estimated 5 percent ± 2.30, or roughly from 3 percent to 7 percent. Similarly, the standard error for grade 10-12 mathematics teachers (p = 37, n = 548) is approximately 2.47 (the tabled value for p = 40 and n = 550) and the 95 percent confidence interval is roughly 32 percent to 42 percent. Since these two confidence intervals do not overlap, it is clear that grade 10-12 mathematics teachers are significantly more likely than social studies teachers in those grades to have attended one or more NSF activities.

1/ Using the smaller N and the p-value closer to 50 percent when the exact values are not in the table would be the more conservative approach. However, for most purposes it is sufficient to use the closest value. In either case one can interpolate the standard error value if a more precise estimate is desired.

Table C.1

TABLE OF GENERALIZED STANDARD ERRORS-- TEACHERS 1/

Sample Size (N)	Average Sampling Errors in Percents P-Values in Percents						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
75	1.91	2.98	4.10	5.47	6.26	6.69	6.93
100	1.66	2.58	3.55	4.73	5.42	5.80	5.92
150	1.35	2.11	2.90	3.86	4.43	4.73	4.83
200	1.17	1.82	2.51	3.35	3.83	4.10	4.18
250	1.05	1.63	2.24	2.99	3.43	3.67	3.74
300	.96	1.49	2.05	2.73	3.13	3.35	3.42
350	.89	1.38	1.90	2.53	2.90	3.10	3.16
400	.83	1.29	1.77	2.37	2.71	2.90	2.96
450	.78	1.22	1.67	2.23	2.56	2.73	2.79
500	.74	1.15	1.59	2.12	2.42	2.59	2.65
550	.71	1.10	1.51	2.02	2.31	2.47	2.52
600	.68	1.05	1.45	1.93	2.21	2.37	2.42
700	.63	.97	1.34	1.79	2.05	2.19	2.24
800	.59	.91	1.25	1.67	1.92	2.05	2.09
900	.55	.86	1.18	1.58	1.81	1.93	1.97
1000	.52	.82	1.12	1.50	1.71	1.83	1.87
1100	.50	.78	1.07	1.43	1.63	1.75	1.78
1200	.48	.74	1.02	1.37	1.57	1.67	1.71
1300	.46	.72	.98	1.31	1.50	1.61	1.54
1400	.44	.69	.95	1.26	1.45	1.55	1.58
1500	.43	.67	.92	1.22	1.40	1.50	1.53
1600	.41	.64	.89	1.18	1.36	1.45	[illegible]
1700	.40	.63	.86	1.15	1.32	1.41	1.43
1800	.39	.61	.84	1.12	1.28	1.37	1.39
1900	.38	.59	.81	1.09	1.24	1.33	1.36
2000	.37	.58	.79	1.06	1.21	1.30	1.32
2500	.33	.52	.71	.95	1.08	1.16	1.18
3000	.30	.47	.65	.86	.99	1.06	1.08
3500	.28	.44	.60	.80	.92	.98	1.00
4000	.26	.41	.56	.75	.86	.92	.94
4500	.25	.38	.53	.71	.81	.86	.88
4829	.24	.37	.51	.68	.79	.83	.85

1/ S. E. = $\sqrt{\frac{DEFF\ p(100-p)}{n}}$; DEFF for teacher sample = 1.4.

Table C.2

TABLE OF GENERALIZED STANDARD ERRORS--
PRINCIPALS 1/

Sample Size (N)	Average Sampling Errors in Percents P-Values in Percents						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
75	2.56	3.98	5.48	7.30	8.37	8.94	9.13
100	2.21	3.45	4.74	6.32	7.25	7.75	7.91
150	1.81	2.81	3.87	5.16	5.92	6.32	6.45
200	1.57	2.44	3.35	4.47	5.12	5.48	5.59
250	1.40	2.18	3.00	4.00	4.58	4.90	5.00
300	1.28	1.99	2.74	3.65	4.18	4.47	4.56
350	1.18	1.84	2.54	3.38	3.87	4.14	4.23
400	1.11	1.72	2.37	3.16	3.62	3.87	3.95
500	.99	1.54	2.12	2.83	3.24	3.46	3.54
600	.90	1.41	1.94	2.58	2.96	3.16	3.23
700	.84	1.30	1.79	2.39	2.74	2.93	2.99
800	.78	1.22	1.68	2.24	2.56	2.74	2.80
900	.74	1.15	1.58	2.11	2.42	2.58	2.64
1100	.67	1.04	1.43	1.91	2.18	2.34	2.38
1177	.65	1.00	1.38	1.84	2.11	2.26	2.30

1/ S.E. = $\sqrt{\frac{\text{DEFF } p(100-p)}{N}}$; DEFF for principal sample = 2.5.

Table C.3

TABLE OF GENERALIZED STANDARD ERRORS--
SUPERINTENDENTS 1/

Sample Size (N)	Average Sampling Errors in Percents P-Values in Percents						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
75	2.04	3.18	4.38	5.84	6.69	7.16	7.30
100	1.77	2.76	3.79	5.06	5.80	6.20	6.32
150	1.45	2.25	3.10	4.13	4.73	5.06	5.16
200	1.25	1.95	2.68	3.58	4.10	4.38	4.47
250	1.12	1.74	2.40	3.20	3.67	3.92	4.00
300	1.02	1.59	2.19	2.92	3.35	3.58	3.65
356	.94	1.46	2.01	2.68	3.07	3.28	3.35

1/ S. E. = $\sqrt{\frac{\text{DEFF } p(100-p)}{n}}$; DEFF for superintendent sample = 1.6.

Table C.4

TABLE OF GENERALIZED STANDARD ERRORS--
DISTRICT PROGRAM QUESTIONNAIRE RESPONDENTS 1/

Sample Size (N)	Average Sampling Errors in Percents P-Values in Percents						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
75	2.45	3.82	5.25	7.00	8.02	8.59	8.76
100	2.12	3.31	4.55	6.07	6.95	7.43	7.58
150	1.73	2.70	3.71	4.95	5.67	6.07	6.19
200	1.50	2.34	3.22	4.29	4.91	5.25	5.36
250	1.34	2.09	2.88	3.84	4.40	4.70	4.80
300	1.23	1.91	2.63	3.50	4.01	4.29	4.38
350	1.13	1.77	2.43	3.24	3.71	3.97	4.05
400	1.06	1.65	2.27	3.03	3.47	3.71	3.79
500	.95	1.48	2.03	2.71	3.11	3.32	3.39
600	.87	1.35	1.86	2.48	2.84	3.03	3.10
700	.80	1.25	1.72	2.29	2.63	2.81	2.87
800	.75	1.17	1.61	2.14	2.46	2.63	2.68
900	.71	1.10	1.52	2.02	2.32	2.48	2.53
1000	.67	1.05	1.44	1.92	2.20	2.35	2.40
1100	.64	1.00	1.37	1.83	2.10	2.24	2.29
1200	.61	.95	1.31	1.75	2.01	2.14	2.19
1300	.59	.92	1.26	1.68	1.93	2.06	2.10
1400	.57	.88	1.22	1.62	1.86	1.99	2.03
1500	.55	.85	1.17	1.57	1.79	1.92	1.96
1600	.53	.83	1.14	1.52	1.74	1.86	1.90
1700	.51	.80	1.10	1.47	1.69	1.80	1.84
1800	.50	.78	1.07	1.43	1.64	1.75	1.79
1893	.49	.76	1.05	1.39	1.60	1.71	1.74

1/ S.E. = $\sqrt{\frac{DEFF\ p(100-p)}{n}}$; DEFF for district program sample = 2.3.

It is also possible for differences to be statistically significant if the two confidence intervals do overlap. If the observed difference is at least twice the standard error of the difference, then the difference is significant at the .05 level. The estimated standard error of a difference is the square root of the variance of that difference (see equation 7). Assuming a zero covariance term,1/ the standard error of the difference can be calculated as

$$SE\ (\hat{p}_1 - \hat{p}_2) = \sqrt{(SE\hat{p}_1)^2 + (SE\hat{p}_2)^2} \qquad (12)$$

Thus if an estimate of 28 percent has a standard error of 3, and an estimate of 40 percent has a standard error of 4, the standard error of the difference is $\sqrt{(3)^2 + (4)^2} = \sqrt{25} = 5$. Since the observed difference, 12 percent, is more than twice the standard error 5, this difference is statistically significant even though the confidence intervals overlap (22-34 percent and 32-48 percent).

E. Standard Errors Associated with Course Enrollments

Estimates for the number of students enrolled in each of the most commonly offered science, mathematics, and social studies courses were presented in Chapter 3. The standard error associated with each of the enrollment estimates is included in Table C.5.

The 95 percent confidence interval is the estimated enrollment ± 2 standard error units. For example, the estimated Chemistry I enrollment in schools with grades 10-12 is 1, 196, 140 students and the standard error is 81, 896 students; therefore, the 95 percent confidence interval for Chemistry I enrollment is 1, 032, 348 to 1, 359, 992. As another example, the anthropology enrollment in schools with grades 10-12 can be estimated as 91, 314 ± 2 times 8, 642 or between 74,030 and 108,598.

1/ This assumption is conservative. The covariance term is expected to be positive; and therefore the standard error will be smaller than given by this formula. The standard error of the difference would be calculated as

$$SE\ (\hat{p}_1-\hat{p}_2) = \sqrt{(SE\hat{p}_1)^2 + (SE\hat{p}_2)^2 - 2rSE_1SE_2}$$

A reasonable assumption for this sample design is that the correlation, r, is approximately .5, making the last term simply SE_1SE_2.

Table C.5

TOTAL ENROLLMENTS IN MAJOR HIGH SCHOOL SCIENCE, MATHEMATICS, AND SOCIAL STUDIES COURSES

	Schools With Only Grades 7-9		Schools With Grades 7-9 and Higher		All Schools With Grades 7-9		Schools With Only Grades 10-12		Schools With Grades 10-12 and Lower		All Schools With Grades 10-12	
I. Science Courses	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error
General Science, Grade 7	2,547,797	312,744	334,468	68,223	2,882,264	241,256	0	0	403,846	99,173	403,846	96,300
General Science, Grade 8	2,255,604	301,615	353,622	63,475	2,609,225	238,384	0	0	428,236	87,586	428,236	85,395
General Science, Grade 9	408,917	83,893	922,300	194,672	1,331,218	314,700	0	0	1,119,400	127,800	1,119,400	114,820
General Sci., Grades 10-12	14,218	14,553	289,259	108,457	303,477	124,321	69,005	14,152	150,232	53,676	219,237	56,381
Earth Science	867,774	150,665	485,597	73,096	1,353,392	155,504	64,090	26,[illegible]8	620,766	69,182	684,856	72,843
Life Science	1,000,557	158,940	265,915	52,229	1,266,472	149,349	36,503	14,152	258,661	32,717	295,164	39,096
Physical Science	745,091	130,120	582,029	135,946	1,327,121	192,841	86,471	23,492	602,367	95,765	688,838	101,856
Biology I	158,141	35,383	1,490,214	199,170	1,648,355	270,388	881,266	89,597	2,072,200	217,260	2,953,466	275,526
Chemistry I	2,417	2,568	566,572	89,464	568,989	103,806	383,359	22,643	812,781	62,537	1,196,140	81,896
Physics	22,169	3,424	257,035	41,983	279,204	46,364	155,313	15,567	356,297	35,273	511,611	41,566
Astronomy	0	0	14,147	3,998	14,147	4,103	23,478	9,659	22,898	11,076	46,375	13,992
Physiology	0	0	15,540	6,997	15,540	6,975	38,174	18,150	12,356	3,578	50,529	19,960
Zoology	0	0	8,243	7,622	8,243	7,796	52,099	3,538	6,845	4,601	58,943	43,829
General Sci., Any Grade	5,239,780	668,290	1,928,490	242,278	7,168,270	733,616	72,052	14,294	2,119,303	291,214	2,191,355	268,530
Biology II, Adv. Biology	2,927	1,997	176,278	47,856	179,204	46,364	83,206	12,100	220,511	26,923	303,717	35,187
Chemistry II, Adv. Chem.	3,379	3,424	28,899	10,246	32,279	11,078	74,914	22,714	62,040	13,632	136,954	30,866
Physics II, Adv. Physics	0	0	8,256	7,247	8,256	6,975	13,977	9,730	39,587	22,834	53,564	24,692
Ecology, Envtl. Education	4,841	3,139	78,015	28,239	82,855	24,618	53,616	17,902	116,075	27,264	169,691	31,483
Sample N	212		79		291		90		163		253	

Table C.5 (Continued)

TOTAL ENROLLMENTS IN MAJOR HIGH SCHOOL SCIENCE, MATHEMATICS, AND SOCIAL STUDIES COURSES

II. Mathematics Courses	Schools With Only Grades 7-9		Schools With Grades 7-9 and Higher		All Schools With Grades 7-9		Schools With Only Grades 10-12		Schools With Grades 10-12 and Lower		All Schools With Grades 10-12	
	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error
General Math, Grade 7	3,540,876	405,482	384,514	66,473	3,925,390	298,698	0	0	541,802	91,334	541,802	93,214
General Math, Grade 8	3,205,751	380,657	452,187	74,345	3,657,938	292,134	0	0	570,732	84,007	570,732	85,806
General Math, Grade 9	664,094	112,143	862,316	94,212	1,526,410	191,610	1,512	955	1,068,914	150,122	1,070,426	145,685
General Math, Grades 10-12	0	0	608,112	129,573	608,112	169,864	351,685	3,552	476,074	70,546	827,759	93,214
Business Math	35,883	11,414	292,285	61,600	328,168	61,135	214,056	30,038	358,808	45,156	572,864	50,414
Elementary Algebra	796,319	121,844	1,605,947	311,250	2,402,266	459,946	373,194	42,456	1,655,499	114,168	2,028,693	130,664
Advanced Algebra	122,858	35,954	546,582	106,083	669,440	110,781	412,981	33,611	781,298	60,322	1,194,279	109,470
Geometry	83,901	14,553	1,003,867	172,556	1,087,768	213,356	606,240	33,929	1,208,288	89,290	1,814,528	142,804
Trigonometry	0	0	168,363	37,735	168,363	37,748	134,923	16,558	324,617	28,627	459,541	40,331
Probability, Statistics	0	0	32,863	9,246	32,863	9,437	18,613	6,864	21,087	5,623	39,700	10,494
Computer Math	1,058	856	122,099	39,859	123,157	46,364	34,896	7,359	117,630	32,717	152,525	33,335
Advanced Senior Math	0	0	139,750	27,114	139,750	30,773	72,719	10,720	152,688	14,825	225,407	19,137
Calculus	0	0	52,337	14,994	52,337	16,412	36,421	7,076	68,929	8,690	105,349	12,346
General Math, Any Grade	7,436,574	879,734	2,396,485	234,531	9,833,060	768,082	354,453	49,850	2,711,503	280,478	3,065,956	271,822
Any Algebra	1,022,759	159,225	2,545,802	519,917	3,568,561	731,975	895,637	54,662	2,817,559	194,426	3,713,196	246,101
Any Geometry	83,901	14,553	1,007,674	172,931	1,091,575	213,766	617,608	36,760	1,215,845	90,142	1,833,453	144,039
Sample N	212		79		291		90		163		253	

Table C.5 (Continued)

TOTAL ENROLLMENTS IN MAJOR HIGH SCHOOL SCIENCE, MATHEMATICS, AND SOCIAL STUDIES COURSES

III. Social Studies Courses	Schools With Only Grades 7-9		Schools With Grades 7-9 and Higher		All Schools With Grades 7-9		Schools With Only Grades 10-12		Schools With Grades 10-12 and Lower		All Schools With Grades 10-12	
	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error	Enrollment	Standard Error
Social Studies, Grade 7	3,294,015	379,516	368,217	67,098	3,662,232	271,619	0	0	479,813	87,245	479,813	89,304
Social Studies, Grade 8	2,788,168	351,837	466,950	77,719	3,255,118	262,182	0	0	531,163	84,007	531,163	86,012
Social Studies, Grade 9	863,780	156,943	688,676	126,834	1,552,456	219,100	893	142	890,999	121,325	891,892	115,437
Soc. St., Grades 10-12	0	0	564,516	128,449	564,516	144,426	198,498	61,915	839,194	194,767	1,037,692	199,185
State History	333,745	77,901	363,691	54,978	697,436	94,369	24,769	6,545	420,768	36,806	445,537	42,594
U. S. History	792,605	140,963	2,723,093	357,482	2,915,698	508,772	1,480,114	97,224	2,526,178	193,234	4,006,291	309,067
World History	123,616	39,949	1,077,078	221,162	1,200,694	322,906	660,967	156,132	1,414,432	163,925	2,075,399	238,693
U. S. Government	200,884	69,911	749,252	124,075	950,136	125,552	673,395	120,929	971,791	102,070	1,645,186	240,545
Economics	31,926	23,113	538,296	168,308	570,222	213,356	243,197	59,545	439,335	119,962	682,532	134,985
Geography	208,950	69,055	310,048	72,096	518,998	87,394	88,152	18,185	495,185	117,235	583,337	115,849
Psychology	5,096	5,136	336,215	72,346	341,312	80,419	225,852	28,481	453,986	54,017	679,838	82,925
Sociology	8,138	6,278	365,957	68,223	374,095	71,136	221,695	30,002	525,622	59,640	747,316	67,493
Anthropology	0	0	7,075	3,624	7,075	3,693	19,494	6,475	71,820	6,986	91,314	8,642
Social Studies, Any Grade	6,945,963	865,467	2,097,926	267,893	9,043,889	718,025	204,973	64,533	2,754,543	347,786	2,959,516	343,019
Afro-Amer. St., Blk. Hist.	0	0	15,092	7,497	15,092	7,385	30,722	14,364	62,841	42,770	93,563	44,652
Law	5,342	2,854	17,418	9,246	22,760	8,206	18,829	7,890	44,531	10,054	63,360	11,729
Amer. Prob., Contemp. Prob.	3,329	2,568	54,818	24,365	58,147	25,849	48,236	15,603	160,597	27,094	208,833	29,014
Psychology, Behavioral St.	5,096	5,136	359,648	87,090	364,745	89,445	243,285	29,790	458,813	55,210	702,099	85,600
Sample N	212		79		291		90		163		253	

C-16

In Chapter 3, it was pointed out that total enrollments in courses that include students from both the 7-9 and 10-12 grade ranges could be estimated by adding together the "schools with only grades 7-9" and the "all schools with grades 10-12" enrollments. The estimated error of this total enrollment would be computed using the same procedures described in Section D for estimating the standard error of the difference.

APPENDIX D

Questionnaires

1. Elementary Mathematics Teacher
2. Elementary Science Teacher
3. Elementary Social Studies Teacher
4. Secondary Mathematics Teacher
5. Secondary Science Teacher
6. Secondary Social Studies Teacher
7. Principal
8. Superintendent
9. District Curriculum
10. State Supervisor

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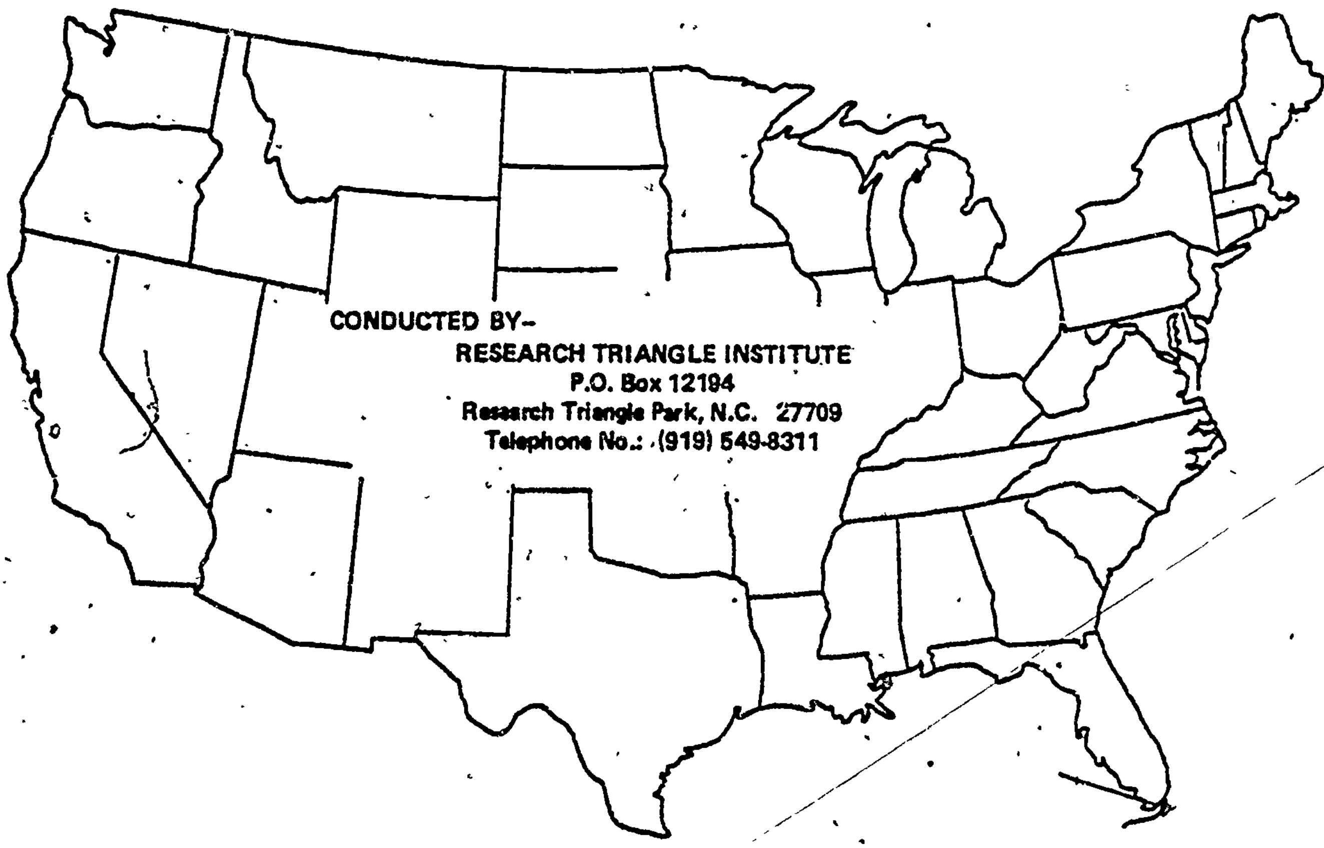
NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

TEACHER QUESTIONNAIRE



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M K-3 1

SECTION A: GENERAL INFORMATION

1a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes .... 1 *GO TO Q. 1b*
No .... 2 *GO TO Q. 2*

1b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. Inservice Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

2. How many years have you taught? (Count 1976-77 as one year.) __________

3. Have you received one or more degrees beyond the Bachelor's?

(Circle one.)

Yes 1
No 2

4. In what year did you last take a course for college credit? __________

5. Indicate your sex:

(Circle one.)

Male 1
Female 2

6. As a source of information about new developments in education how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

7. Many teachers feel better qualified to teach some subject areas than others. How qualified do you feel to teach each of the following?

(Circle one on each line.)

	Not Well Qualified	Adequately Qualified	Very Well Qualified
a. Mathematics	1	2	3
b. Science	1	2	3
c. Social Studies	1	2	3
d. Reading	1	2	3

8a. How many different classes of students do you teach in a typical week?

(Circle one.)

One class	1	*GO TO Q. 8b*
More than one class	2	*GO TO Q. 8c*

8b. How many minutes do you spend per week teaching each of the following subject areas? Please write "0" if you do not teach a particular subject to this class.

Subject	Approximate Number of Minutes per Week
a. Mathematics	______ minutes/week
b. Science	______ minutes/week
c. Social Studies	______ minutes/week
d. Reading	______ minutes/week

Go to Question 9a in SECTION B on the next page.

8c. For **each** class of students that you teach, please indicate the average number of minutes you spend per week teaching each of the following subject areas.

Approximate Number of Minutes per Week

Subject	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
a. Mathematics						
b. Science						
c. Social Studies						
d. Reading						

SECTION B: YOUR EXPERIENCE WITH SELECTED MATHEMATICS CURRICULUM MATERIALS

This study involves science, mathematics, and social studies education. You have been selected to answer questions about mathematics. Questions 9 and 10 relate to your experience with selected mathematics curriculum materials.

9a. For each of the materials listed below, please circle one of the following categories: (1) "Have Never Seen," (2) "Have Seen But Not Used," or (3) "Have Used In Teaching." (Since some of these materials are being used on a very limited basis, you may not have seen many of them.)

(Circle one on each line.)

Code Number		Have Never Seen	Have Seen But Not Used	Have Used in Teaching
201.	Comprehensive School Mathematics Program—Elementary Component (CSMP)	1	2	3
202.	Developing Mathematical Processes (DMP)	1	2	3
203.	Educational Research Mathematics Program (formerly Greater Cleveland Mathematics Program)	1	2	3
204.	Individualized Mathematics System (IMS)	1	2	3
205.	Individually Prescribed Instruction (IPI)	1	2	3
206.	Infinity Factory	1	2	3
207.	Madison Mathematics Project (MAD-M)	1	2	3
208.	MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	1	2	3
209.	School Mathematics Study Group (SMSG)	1	2	3
210.	Search for Understanding Computation (SUC)	1	2	3
211.	Unified Science and Mathematics for Elementary Schools (USMES)	1	2	3

9b. Are you using any of these materials during the present (1976-77) school year? If so, please write in the code number(s) from the above list.

(Circle one.)

Yes 1   Code Number (s) ______ ______ ______

No 2   ______ ______ ______

10a. With which one of the curriculum materials listed in question 9a are you most familiar? (If you answered "Have Never Seen" to all of the listed materials, go to Question 11 in SECTION C below.)

Code Number ______ (Please write only one.)

10b. Please indicate all major sources from which you received information about the project you specified in question 10a.

(Circle all that apply.)

a.	Teachers	1
b.	Principals	2
c.	Local Subject Specialists/Coordinators	3
d.	State Department Personnel	4
e.	College Courses	5
f.	Local In-Service Programs	6
g.	Federally Sponsored Workshops	7
h.	Teacher Union Meetings	8
i.	Meetings of Professional Organizations	9
j.	Journals and Other Professional Publications	10
k.	Publishers and Sales Representatives	11
l.	Project Authors	12
m.	Involvement in Project Development	13

SECTION C: THE MATHEMATICS CURRICULUM IN YOUR SCHOOL

Questions 11 and 12 relate to the mathematics curriculum in your school and your opinions about it.

11. The following factors may affect mathematics instruction in your school as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

		Serious Problem	Somewhat of a Problem	Not a Significant Problem
a.	Belief that mathematics is less important than other subjects	1	2	3
b.	Compliance with Federal regulations	1	2	3
c.	Inadequate facilities	1	2	3
d.	Insufficient funds for purchasing equipment and supplies	1	2	3
e.	Lack of materials for individualizing instruction	1	2	3
f.	Out-of-date teaching materials	1	2	3
g.	Insufficient numbers of textbooks	1	2	3
h.	Lack of student interest in mathematics	1	2	3
i.	Inadequate student reading abilities	1	2	3
j.	Lack of teacher interest in mathematics	1	2	3
k.	Teachers inadequately prepared to teach mathematics	1	2	3
l.	Lack of teacher planning time	1	2	3
m.	Not enough time to teach mathematics	1	2	3
n.	Class sizes too large	1	2	3
o.	Difficulty in maintaining discipline	1	2	3
p.	Inadequate articulation of instruction across grade levels	1	2	3
q.	Inadequate diversity of mathematics electives	1	2	3
r.	Low enrollments in mathematics courses	1	2	3

12. Please indicate your needs regarding assistance from a mathematics education resource person (e.g., a mathematics coordinator, a consultant, or another teacher) for each of the following:

(Circle one on each line.)

	Usually Do Not Need Assistance	Would Like Assistance But Receive Little or None	Would Like Assistance and Receive Adequate Assistance
a. Establishing instructional objectives	1	2	3
b. Lesson planning	1	2	3
c. Learning new teaching methods	1	2	3
d. Actually teaching lessons	1	2	3
e. Obtaining information about instructional materials	1	2	3
f. Obtaining subject matter information	1	2	3
g. Implementing discovery/inquiry approach	1	2	3
h. Using manipulative or hands-on materials	1	2	3
i. Maintaining equipment	1	2	3
j. Working with small groups of students	1	2	3
k. Maintaining discipline	1	2	3
l. Articulating instruction across grade levels	1	2	3
m. Using calculators	1	2	3

SECTION D: YOUR MATHEMATICS TEACHING

The remaining questions relate to your mathematics teaching. A class is considered to be a K-3 class if at least half of the students in that class are in grades K, 1, 2, or 3. If you teach more than one class of mathematics per day, please answer these questions about your ________ K-3 mathematics class.

13. How many students are there in this class? ______

14. Please indicate the number of students in each of the following grade levels:

K	1	2	3	4	5	6

15. The ability makeup of this class is best described by which of the following? (Comparison should be with the average student in the grade.)

(Circle one.)

Composed primarily of high ability students 1
Composed primarily of low ability students 2
Composed primarily of average ability students or students of widely differing ability levels 3

16. How does the amount of time spent on mathematics in this class compare to the amount of time spent on mathematics in a similar class 3 years ago?

(Circle one.)

I did not teach this grade level 3 years ago	1
More time is spent on mathematics now	2
About the same amount of time is spent on mathematics now as 3 years ago	3
Less time is spent on mathematics now	4

17. In general, how would you rate each of the following for teaching mathematics to this class? If any do not apply to this class, please circle 1, "Not Relevant to This Class."

(Circle one on each line.)

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed
a. Facilities—building and classroom fixtures	1	2	3	4
b. Equipment—nonconsumable, nonperishable items, such as balances, meter sticks, calculators, etc.	1	2	3	4
c. Supplies—materials that must continually be replenished, such as graph paper, workbooks, task cards, duplicating masters, etc.	1	2	3	4
d. Money to buy supplies on a day-to-day basis	1	2	3	4
e. Storage space for equipment and supplies	1	2	3	4
f. Space available for classroom preparation	1	2	3	4
g. Spaces for small groups to work	1	2	3	4
h. Availability of laboratory assistants or paraprofessional help	1	2	3	4

18. Are there one or two journals or periodicals which you find particularly helpful to you in your teaching of mathematics to this class?

(Circle one.)

Yes . . . . 1 Please specify: a. ______________________

b. ______________________

No 2

19. Which of the following best describes the way concepts related to the metric system are used in your class?

(Circle one.)

Metric concepts are not included in this course	1
They are introduced in a special metric unit, then seldom used during the remainder of the course	2
They are introduced in a special metric unit and used throughout the course	3
They are introduced as needed throughout the course; there is no special metric unit	4

20. How often do you use each of the following techniques in teaching mathematics to this class? If a technique does not apply to your class, please circle 1, "Never."

(Circle one on each line.)

	Never	Less Than Once A Month	At Least Once A Month	At Least Once A Week	Just About Daily
a. Lecture	1	2	3	4	5
b. Discussion	1	2	3	4	5
c. Student reports or projects	1	2	3	4	5
d. Library work	1	2	3	4	5
e. Students working at chalkboard	1	2	3	4	5
f. Individual assignments	1	2	3	4	5
g. Students use hands-on manipulative or laboratory materials	1	2	3	4	5
h. Televised instruction	1	2	3	4	5
i. Programmed instruction	1	2	3	4	5
j. Computer-assisted instruction	1	2	3	4	5
k. Tests or quizzes	1	2	3	4	5
l. Contracts	1	2	3	4	5
m. Simulations (role-play, debates, panels)	1	2	3	4	5
n. Field trips, excursions	1	2	3	4	5
o. Guest speakers	1	2	3	4	5
p. Teacher demonstrations	1	2	3	4	5

21. For the following audio-visual materials, please indicate how often each is used in this mathematics class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Less Than Once A Month	At Least Once A Month	At Least Once A Week
a. Films	1	2	3	4	5
b. Filmstrips	1	2	3	4	5
c. Film loops	1	2	3	4	5
d. Tapes	1	2	3	4	5
e. Slides	1	2	3	4	5
f. Records	1	2	3	4	5
g. Overhead projectors	1	2	3	4	5
h. Standard TV	1	2	3	4	5
i. Closed circuit TV	1	2	3	4	5
j. Videotape recorder/player	1	2	3	4	5

22. For the following equipment and materials please indicate the approximate number of days each is used in this mathematics class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

		Not Needed	Needed But Not Available	Use Less Than 10 Days	Use Between 10 and 50 Days	Use More Than 50 Days
a.	Games and puzzles	1	2	3	4	5
b.	Handheld calculators	1	2	3	4	5
c.	Computers or computer terminals	1	2	3	4	5
d.	Metric measurement tools (rulers, containers, weights, etc.)	1	2	3	4	5
e.	Nonmetric measurement tools	1	2	3	4	5
f.	Activity cards or kits	1	2	3	4	5
g.	Numeration and place value manipulatives (rods, blocks, etc.)	1	2	3	4	5
h.	Geometric tools	1	2	3	4	5

SECTION E: TEXTBOOKS/PROGRAMS USED IN THIS CLASS

23a. Are you using one or more published textbooks or programs for teaching mathematics to this class?

(Circle one.)

Yes	1	*GO TO Q. 24*
No	2	*GO TO Q. 23b*

23b. Briefly describe what you are using instead of a published textbook or program. *Then go to Question 28.*

____

____

____

For Questions 24a and 24b, please use the "List of Mathematics Textbooks/Programs" (blue) which was included with this questionnaire.

24a. Using the code numbers on the blue list, please specify each textbook/program that you are using in teaching mathematics to this class. Then write in the copyright date of each.

	Code Number	Copyright Date
1.	________	________
2.	________	________
3.	________	________
4.	________	________
5.	________	________

24b. If you are using any published mathematics textbooks/programs in this class which are not on the blue list, please provide the following information for each:

Other Published Textbooks/Programs

Code No.	Title	Author	Publisher	Copyright Date
9001				
9002				
9003				

Questions 25-27 relate to the one published textbook/program which is used most often by the students in this class.

25. Please write the code number of the one textbook/program that you listed either in Question 24a or Question 24b which is used most often by the students in this class.

Code Number ____________

26. For the one textbook/program that you specified in Question 25, does the publisher offer instructional materials to supplement or replace the textbook?

(Circle one.)

Yes . . . . 1 *GO TO Q. 27*
No . . . . 2 *GO TO Q. 28*

27. Please indicate the frequency with which you use each of the publisher-offered materials of the one program you specified in Question 25. If your published program does not include a particular type of materials, or if you do not have it available for use in this class, circle 1, "Not Available."

(Circle one on each line.)

	Not Available	Available But Never Use	Available And Use
a. Teacher manuals	1	2	3
b. Student workbooks	1	2	3
c. Hands-on or manipulative materials	1	2	3
d. Audio-visual materials or media kits	1	2	3
e. Activity cards	1	2	3
f. Test materials	1	2	3

28. If you could use any textbook or program for teaching mathematics to this class, indicate the one that you would use.

(Circle one.)

I prefer the one I'm presently using	1	
I prefer one I've used previously	2	Specify. ______________
Other	3	Specify. ______________

SECTION F: YOUR MOST RECENT MATHEMATICS LESSON IN THIS CLASS

Please answer the following questions specific to your most recent mathematics lesson in this class. Do not be concerned if this lesson was not typical of instruction in this class.

29a. How many minutes did a typical student spend on mathematics (including teacher-led instruction as well as small-group and individual work) during your most recent mathematics lesson in this class? _____ minutes

29b. Did that lesson take place on the most recent day your school was in session?

(Circle one.)

Yes	1
No	2

30. Approximately how many of the minutes in that lesson were spent in each of the following general instructional arrangements?

	Number of Minutes
The teacher working with the entire class as a group (e.g. lecture, test, etc.)	______
The teacher working with small groups of students	______
The teacher supervising students working on individual activities	______
TOTAL	______

(should be the same as in Q. 29a)

31. Indicate if each of the following activities took place during that mathematics lesson.

(Circle one on each line.)

	Yes	No
a. Lecture	1	2
b. Discussion	1	2
c. Student use of hands-on, manipulative or laboratory materials	1	2

32. When did you complete this questionnaire? ________ (month) ________ (day) ________ (year)

THANK YOU FOR YOUR COOPERATION!

O.M.B. No. 099-S-76010
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

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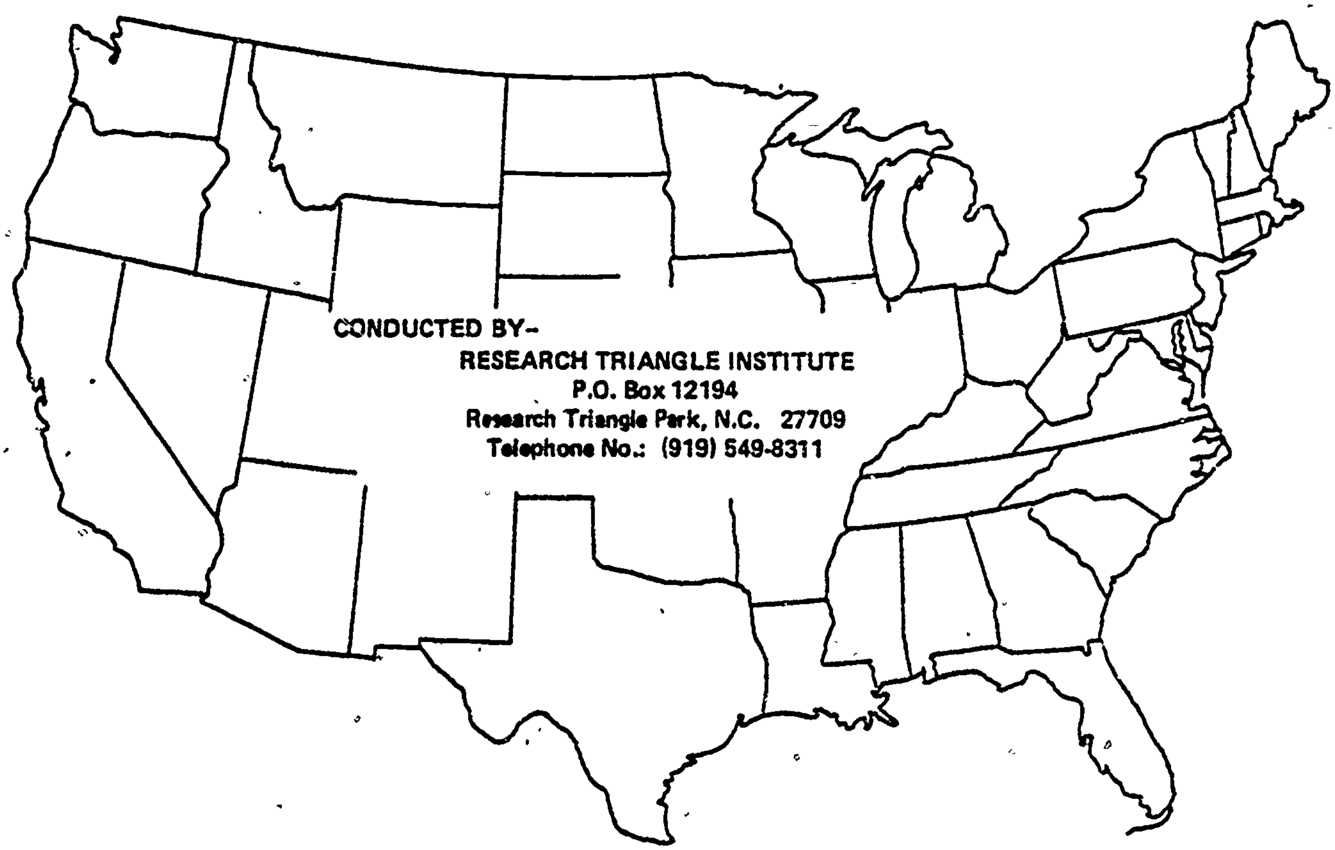
TEACHER QUESTIONNAIRE



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S 4-6 1

SECTION A: GENERAL INFORMATION

1a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes .... 1 *GO TO Q. 1b*
No .... 2 *GO TO Q. 2*

1b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. Inservice Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

2. How many years have you taught? (Count 1976-77 as one year.) __________

3. Have you received one or more degrees beyond the Bachelor's?

(Circle one.)

Yes 1
No 2

4. I. hat year did you last take a course for college credit? __________

5. Indicate your sex:

(Circle one.)

Male 1
Female 2

6. As a source of information about new developments in education how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2.	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

7. Many teachers feel better qualified to teach some subject areas than others. How qualified do you feel to teach each of the following?

(Circle one on each line.)

	Not Well Qualified	Adequately Qualified	Very Well Qualified
a. Mathematics	1	2	3
b. Science	1	2	3
c. Social Studies	1	2	3
d. Reading	1	2	3

8a. How many different classes of students do you teach in a typical week?

(Circle one.)

One class	1	*GO TO Q. 8b*
More than one class	2	*GO TO Q. 8c*

8b. How many minutes do you spend per week teaching each of the following subject areas? Please write "0" if you do not teach a particular subject to this class.

Subject	Approximate Number of Minutes per Week
a. Mathematics	______ minutes/week
b. Science	______ minutes/week
c. Social Studies	______ minutes/week
d. Reading	______ minutes/week

Go to Question 9a in SECTION B on the next page.

8c. For **each** class of students that you teach, please indicate the average number of minutes you spend per week teaching each of the following subject areas.

Approximate Number of Minutes per Week

Subject	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
a. Mathematics						
b. Science						
c. Social Studies						
d. Reading						

SECTION B: YOUR EXPERIENCE WITH SELECTED SCIENCE CURRICULUM MATERIALS

This study involves science, mathematics, and social studies education. You have been selected to answer questions about science. Questions 9 and 10 relate to your experience with selected science curriculum materials.

9a. For each of the materials listed below, please circle one of the following categories: (1) "Have Never Seen," (2) "Have Seen But Not Used," or (3) "Have Used in Teaching." (Since some of these materials are being used on a very limited basis, you may not have seen many of them.)

(Circle one on each line.)

Code Number		Have Never Seen	Have Seen But Not Used	Have Used in Teaching
101.	BSCS Elementary School Science Project	1	... 2	... 3
102.	Conceptually Oriented Program in Elementary Science (COPES)	1	... 2	... 3
103.	Elementary Science Study (ESS)	1	... 2	... 3
104.	Environmental Studies for Urban Youth (ESSENCE)	1	... 2	... 3
105.	Human Sciences Program (BSCS)	1	... 2	... 3
106.	Individualized Science (IS)	1	... 2	... 3
107.	MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	1	... 2	... 3
108.	Science—A Process Approach (SAPA)	1	... 2	... 3
109.	Science Curriculum Improvement Study (SCIS)	1	... 2	... 3
110.	Science Explorations for the Future	1	... 2	... 3
111.	Unified Science and Mathematics for Elementary Schools (USMES)	1	... 2	... 3
112.	University of Illinois Astronomy Program	1	... 2	... 3

9b. Are you using any of these materials during the present (1976-77) school year? If so, please write in the code number(s) from the above list.

(Circle one.)

Yes 1   Code Number (s) ______ ______ ______

______ ______ ______

No 2

10a. With which one of the curriculum materials listed in question 9a are you most familiar? (If you answered "Have Never Seen" to all of the listed materials, go to Question 11 in SECTION C below.)

Code Number ____ (Please write only one.)

10b. Please indicate all major sources from which you received information about the project you specified in question 10a.

(Circle all that apply.)

a.	Teachers	1
b.	Principals	2
c.	Local Subject Specialists/Coordinators	3
d.	State Department Personnel	4
e.	College Courses	5
f.	Local In-Service Programs	6
g.	Federally Sponsored Workshops	7
h.	Teacher Union Meetings	8
i.	Meetings of Professional Organizations	9
j.	Journals and Other Professional Publications	10
k.	Publishers and Sales Representatives	11
l.	Project Authors	12
m.	Involvement in Project Development	13

SECTION C: THE SCIENCE CURRICULUM IN YOUR SCHOOL

Questions 11 and 12 relate to the science curriculum in your school and your opinions about it.

11. The following factors may affect science instruction in your school as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

		Serious Problem	Somewhat of a Problem	Not a Significant Problem
a.	Belief that science is less important than other subjects	1	2	3
b.	Compliance with Federal regulations	1	2	3
c.	Inadequate facilities	1	2	3
d.	Insufficient funds for purchasing equipment and supplies	1	2	3
e.	Lack of materials for individualizing instruction	1	2	3
f.	Out-of-date teaching materials	1	2	3
g.	Insufficient numbers of textbooks	1	2	3
h.	Lack of student interest in science	1	2	3
i.	Inadequate student reading abilities	1	2	3
j.	Lack of teacher interest in science	1	2	3
k.	Teachers inadequately prepared to teach science	1	2	3
l.	Lack of teacher planning time	1	2	3
m.	Not enough time to teach science	1	2	3
n.	Class sizes too large	1	2	3
o.	Difficulty in maintaining discipline	1	2	3
p.	Inadequate articulation of instruction across grade levels	1	2	3
q.	Inadequate diversity of science electives	1	2	3
r.	Low enrollments in science courses	1	2	3

12. Please indicate your needs regarding assistance from a science education resource person (e.g., a science coordinator, a consultant, or another teacher) for each of the following:

(Circle one on each line.)

	Usually Do Not Need Assistance	Would Like Assistance But Receive Little or None	Would Like Assistance and Receive Adequate Assistance
a. Establishing instructional objectives	1	2	3
b. Lesson planning	1	2	3
c. Learning new teaching methods	1	2	3
d. Actually teaching lessons	1	2	3
e. Obtaining information about instructional materials	1	2	3
f. Obtaining subject matter information	1	2	3
g. Implementing discovery/inquiry approach	1	2	3
h. Using manipulative or hands-on materials	1	2	3
i. Maintaining equipment	1	2	3
j. Working with small groups of students	1	2	3
k. Maintaining discipline	1	2	3
l. Articulating instruction across grade levels	1	2	3
m. Maintaining live animals and plants	1	2	3

SECTION D: YOUR SCIENCE TEACHING

The remaining questions relate to your science teaching. A class is considered to be a 4-6 class if at least half of the students in that class are in grades 4, 5, or 6. If you teach more than one class of science per day, please answer these questions about your 1st 4-6 science class.

13. How many students are there in this class? ______

14. Please indicate the number of students in each of the following grade levels:

K	1	2	3	4	5	6

15. The ability makeup of this class is best described by which of the following? (Comparison should be with the average student in the grade.)

(Circle one.)

Composed primarily of high ability students 1
Composed primarily of low ability students 2
Composed primarily of average ability students or students of widely differing ability levels 3

16. Indicate the kind of room you use to conduct this class.

(Circle one.)

Laboratory or special science room	1
Classroom with portable science kits or materials	2
Classroom with no science facilities or materials	3

17. How does the amount of time spent on science in this class compare to the amount of time spent on science in a similar class 3 years ago?

(Circle one.)

I did not teach this grade level 3 years ago	1
More time is spent on science now	2
About the same amount of time is spent on science now as 3 years ago	3
Less time is spent on science now	4

18. In general, how would you rate each of the following for teaching science to this class? If any do not apply to this class, please circle 1, "Not Relevant to This Class."

(Circle one on each line.)

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed
a. Facilities—building and classroom fixtures	1	2	3	4
b. Equipment—nonconsumable, nonperishable items such as microscopes, scales, etc.	1	2	3	4
c. Supplies—materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	1	2	3	4
d. Money to buy supplies on a day-to-day basis	1	2	3	4
e. Storage space for equipment and supplies	1	2	3	4
f. Space available for classroom preparation	1	2	3	4
g. Spaces for small groups to work	1	2	3	4
h. Availability of laboratory assistants or paraprofessional help	1	2	3	4

19. Are there one or two journals or periodicals which you find particularly helpful to you in your teaching of science to this class?

(Circle one.)

Yes . . . . 1 Please specify: a. ____________________

b. ____________________

No 2

20. Which of the following best describes the way concepts related to the metric system are used in your class?

(Circle one.)

Metric concepts are not included in this course	1
They are introduced in a special metric unit, then seldom used during the remainder of the course	2
They are introduced in a special metric unit and used throughout the course	3
They are introduced as needed throughout the course; there is no special metric unit	4

21. How often do you use each of the following techniques in teaching science to this class? If a technique does not apply to your class, please circle 1, "Never."

(Circle one on each line.)

	Never	Less Than Once A Month	At Least Once A Month	At Least Once A Week	Just About Daily
a. Lecture	1	2	3	4	5
b. Discussion	1	2	3	4	5
c. Student reports or projects	1	2	3	4	5
d. Library work	1	2	3	4	5
e. Students working at chalkboard	1	2	3	4	5
f. Individual assignments	1	2	3	4	5
g. Students use hands-on manipulative or laboratory materials	1	2	3	4	5
h. Televised instruction	1	2	3	4	5
i. Programmed instruction	1	2	3	4	5
j. Computer-assisted instruction	1	2	3	4	5
k. Tests or quizzes	1	2	3	4	5
l. Contracts	1	2	3	4	5
m. Simulations (role-play, debates, panels)	1	2	3	4	5
n. Field trips, excursions	1	2	3	4	5
o. Guest speakers	1	2	3	4	5
p. Teacher demonstrations	1	2	3	4	5

22. For the following audio-visual materials, please indicate how often each is used in this science class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Less Than Once A Month	At Least Once A Month	At Least Once A Week
a. Films	1	2	3	4	5
b. Filmstrips	1	2	3	4	5
c. Film loops	1	2	3	4	5
d. Tapes	1	2	3	4	5
e. Slides	1	2	3	4	5
f. Records	1	2	3	4	5
g. Overhead projectors	1	2	3	4	5
h. Standard TV	1	2	3	4	5
i. Closed circuit TV	1	2	3	4	5
j. Videotape recorder/player	1	2	3	4	5

23. For the following equipment and materials please indicate the approximate number of days each is used in this science class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Use Less Than 10 Days	Use Between 10 and 50 Days	Use More Than 50 Days
a. Computer or computer terminals	1	2	3	4	5
b. Greenhouse	1	2	3	4	5
c. Telescope	1	2	3	4	5
d. Darkroom	1	2	3	4	5
e. Weather Station	1	2	3	4	5
f. Hand-held calculators	1	2	3	4	5
g. Microscopes	1	2	3	4	5
h. Cameras	1	2	3	4	5
i. Models (e.g., the solar system, parts of organisms, etc.)	1	2	3	4	5
j. Games and puzzles	1	2	3	4	5
k. Magnifying glass	1	2	3	4	5
l. Meter sticks, rulers	1	2	3	4	5
m. Balance, scale	1	2	3	4	5
n. Batteries, bulbs	1	2	3	4	5
o. Magnets	1	2	3	4	5
p. Rocks	1	2	3	4	5
q. Living plants	1	2	3	4	5
r. Living animals	1	2	3	4	5

SECTION E: TEXTBOOKS/PROGRAMS USED IN THIS CLASS

24a. Are you using one or more published textbooks or programs for teaching science to this class?

(Circle one.)

Yes .... 1 *GO TO Q. 25*
No .... 2 *GO TO Q. 24b*

24b. Briefly describe what you are using instead of a published textbook or program. *Then go to Question 29.*

____

____

____

For Questions 25a and 25b, please use the "List of Science Textbooks/Programs" (green) which was included with this questionnaire.

25a. Using the code numbers on the green list, please specify each textbook/program that you are using in teaching science to this class. Then write in the copyright date of each.

	Code Number	Copyright Date
1.	________	________
2.	________	________
3.	________	________
4.	________	________
5.	________	________

25b. If you are using any published science textbooks/programs in this class which are not on the green list, please provide the following information for each:

Other Published Textbooks/Programs

Code No.	Title	Author	Publisher	Copyright Date
9001	________	________	________	________
9002	________	________	________	________
9003	________	________	________	________

Questions 26-28 relate to the one published textbook/program which is used most often by the students in this class.

26. Please write the code number of the one textbook/program that you listed either in Question 25a or 25b which is used most often by the students in this class.

Code Number ________

27. For the one textbook/program that you specified in Question 26, does the publisher offer instructional materials to supplement or replace the textbook?

(Circle one.)

Yes . . . . 1 *GO TO Q. 28*
No . . . . 2 *GO TO Q. 29*

28. Please indicate the frequency with which you use each of the publisher-offered materials of the one program you specified in Question 26. If your published program does not include a particular type of materials, or if you do not have it available for use in this class, circle 1, "Not Available."

(Circle one on each line.)

	Not Available	Available But Never Use	Available And Use
a. Teacher manuals	1	2	3
b. Student workbooks	1	2	3
c. Hands-on or manipulative materials	1	2	3
d. Audio-visual materials or media kits	1	2	3
e. Activity cards	1	2	3
f. Test materials	1	2	3

29. If you could use any textbook or program for teaching science to this class, indicate the one that you would use.

(Circle one.)

I prefer the one I'm presently using....... 1

I prefer one I've used previously .... 2 Specify. ____________

Other .... 3 Specify. ____________

SECTION F: YOUR MOST RECENT SCIENCE LESSON IN THIS CLASS

Please answer the following questions specific to your most recent science lesson in this class. Do not be concerned if this lesson was not typical of instruction in this class.

30a. How many minutes did a typical student spend on science (including teacher-led instruction as well as small-group and individual work) during your most recent science lesson in this class? ________ minutes

30b. Did that lesson take place on the most recent day your school was in session?

(Circle one.)

Yes 1

No 2

31. Approximately how many of the minutes in that lesson were spent in each of the following general instructional arrangements?

	Number of Minutes
The teacher working with the entire class as a group (e.g. lecture, test, etc.)	________
The teacher working with small groups of students	________
The teacher supervising students working on individual activities	________
TOTAL	________

(should be the same as in Q. 30a)

32. Indicate if each of the following activities took place during that science lesson.

(Circle one on each line.)

	Yes	No
a. Lecture	1	2
b. Discussion	1	2
c. Student use of hands-on, manipulative or laboratory materials	1	2

33. When did you complete this questionnaire? _____ (month) _____ (day) _____ (year)

THANK YOU FOR YOUR COOPERATION!

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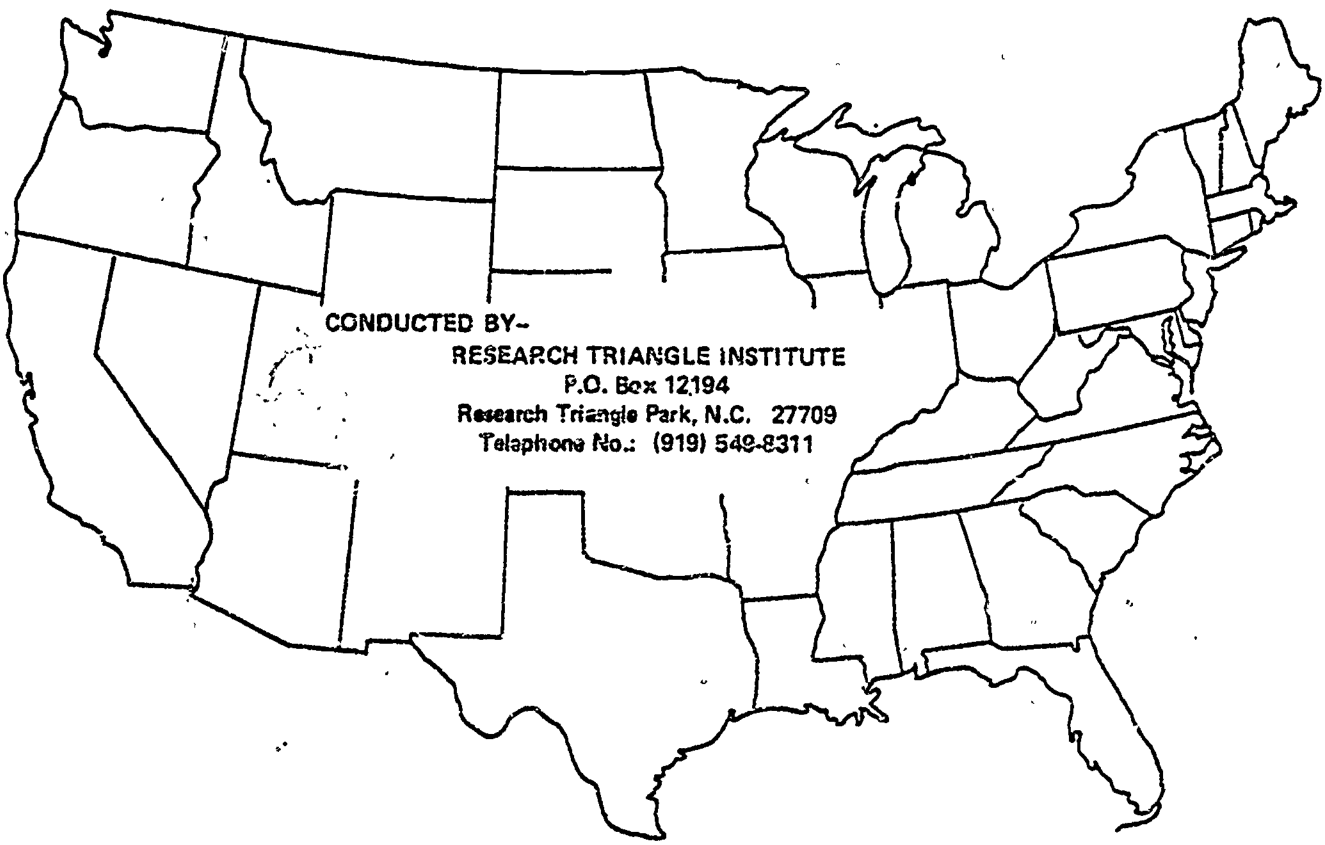
This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-S-76010
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

TEACHER QUESTIONNAIRE



ST 4-6 1

SECTION A: GENERAL INFORMATION

1a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes . . . . 1 *GO TO Q. 1b*
No . . . . 2 *GO TO Q. 2*

1b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. Inservice Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

2. How many years have you taught? (Count 1976-77 as one year.) __________

3. Have you received one or more degrees beyond the Bachelor's?

(Circle one.)

Yes 1
No 2

4. In what year did you last take a course for college credit? __________

5. Indicate your sex:

(Circle one.)

Male 1
Female 2

6. As a source of information about new developments in education how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

7. Many teachers feel better qualified to teach some subject areas than others. How qualified do you feel to teach each of the following?

(Circle one on each line.)

	Not Well Qualified	Adequately Qualified	Very Well Qualified
a. Mathematics	1	2	3
b. Science	1	2	3
c. Social Studies	1	2	3
d. Reading	1	2	3

8a. How many different classes of students do you teach in a typical week?

(Circle one.)

One class	1	*GO TO Q. 8b*
More than one class	2	*GO TO Q. 8c*

8b. How many minutes do you spend per week teaching each of the following subject areas? Please write "0" if you do not teach a particular subject to this class.

Subject	Approximate Number of Minutes per Week
a. Mathematics	______ minutes/week
b. Science	______ minutes/week
c. Social Studies	______ minutes/week
d. Reading	______ minutes/week

Go to Question 9a in SECTION B on the next page.

8c. For each class of students that you teach, please indicate the average number of minutes you spend per week teaching each of the following subject areas.

Approximate Number of Minutes per Week

Subject	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
a. Mathematics						
b. Science						
c. Social Studies						
d. Reading						

SECTION B: YOUR EXPERIENCE WITH SELECTED SOCIAL STUDIES CURRICULUM MATERIALS

This study involves science, mathematics, and social studies education. You have been selected to answer questions about social studies. Questions 9 and 10 relate to your experience with selected social studies curriculum materials.

9a. For each of the materials listed below, please circle one of the following categories: (1) "Have Never Seen," (2) "Have Seen But Not Used," or (3) "Have Used In Teaching." (Since some of these materials are being used on a very limited basis, you may not have seen many of them.)

(Circle one on each line.)

Code Number	Have Never Seen	Have Seen But Not Used	Have Used in Teaching
301. Concepts and Inquiry (Educational Research Council)	1	2	3
302. Elementary School Economics I, II (University of Chicago)	1	2	3
303. Elementary Social Science Education Program Laboratory Units (SRA)	1	2	3
304. Environmental Studies for Urban Youth (ESSENCE)	1	2	3
305. Family of Man (Minnesota Project Social Studies)	1	2	3
306. Georgia Anthropology Curriculum Project	1	2	3
307. Human Sciences Program (BSCS)	1	2	3
308. Man: A Course of Study (MACOS)	1	2	3
309. Materials and Activities for Teachers and Children (MATCH)	1	2	3
310. Our Working World	1	2	3
311. Social Studies Dynamics Program	1	2	3
312. Taba Program in Social Science	1	2	3

9b. Are you using any of these materials during the present (1976-7) school year? If so, please write in the code number(s) from the above list.

(Circle one.)

Yes . . . . 1 Code Number (s) ______ ______ ______
______ ______ ______

No 2

10a. With which one of the curriculum materials listed in question 9a are you most familiar? (If you answered "Have Never Seen" to all of the listed materials, go to Question 11 in SECTION C below.)

Code Number ______ (Please write only one.)

10b. Please indicate all major sources from which you received information about the project you specified in question 10a.

(Circle all that apply.)

a. Teachers 1
b. Principals 2
c. Local Subject Specialists/Coordinators 3
d. State Department Personnel 4

e. College Courses 5
f. Local In-Service Programs 6
g. Federally Sponsored Workshops 7

h. Teacher Union Meetings 8
i. Meetings of Professional Organizations 9
j. Journals and Other Professional Publications 10

k. Publishers and Sales Representatives 11
l. Project Authors 12
m. Involvement in Project Development 13

SECTION C: THE SOCIAL STUDIES CURRICULUM IN YOUR SCHOOL

Questions 11 and 12 relate to the social studies curriculum in your school and your opinions about it.

11. The following factors may affect social studies instruction in your school as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat of a Problem	Not a Significant Problem
a. Belief that social studies is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in social studies	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in social studies	1	2	3
k. Teachers inadequately prepared to teach social studies	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach social studies	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of social studies electives	1	2	3
r. Low enrollments in social studies courses	1	2	3

12. Please indicate your needs regarding assistance from a social studies education resource person (e.g., a social studies coordinator, a consultant, or another teacher) for each of the following:

(Circle one on each line.)

	Usually Do Not Need Assistance	Would Like Assistance But Receive Little or None	Would Like Assistance and Receive Adequate Assistance
a. Establishing instructional objectives	1	2	3
b. Lesson planning	1	2	3
c. Learning new teaching methods	1	2	3
d. Actually teaching lessons	1	2	3
e. Obtaining information about instructional materials	1	2	3
f. Obtaining subject matter information	1	2	3
g. Implementing discovery/inquiry approach	1	2	3
h. Using manipulative or hands-on materials	1	2	3
i. Maintaining equipment	1	2	3
j. Working with small groups of students	1	2	3
k. Maintaining discipline	1	2	3
l. Articulating instruction across grade levels	1	2	3

SECTION D: YOUR SOCIAL STUDIES TEACHING

The remaining questions relate to your social studies teaching. A class is considered to be a 4-6 class if at least half of the students in that class are in grades 4, 5, or 6. If you teach more than one class of social studies per day, please answer these questions about your 1st 4-6 social studies class.

13. How many students are there in this class? ______

14. Please indicate the number of students in each of the following grade levels:

K	1	2	3	4	5	6

15. The ability makeup of this class is best described by which of the following? (Comparison should be with the average student in the grade.)

(Circle one.)

Composed primarily of high ability students 1
Composed primarily of low ability students 2
Composed primarily of average ability students or students of widely differing ability levels 3

16. How does the amount of time spent on social studies in this class compare to the amount of time spent on social studies in a similar class 3 years ago?

(Circle one.)

I did not teach this grade level 3 years ago	1
More time is spent on social studies now	2
About the same amount of time is spent on social studies now as 3 years ago	3
Less time is spent on social studies now	4

17. In general, how would you rate each of the following for teaching social studies to this class? If any do not apply to this class, please circle 1, "Not Relevant to This Class."

(Circle one on each line.)

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed
a. Facilities—building and classroom fixtures	1	2	3	4
b. Equipment—nonconsumable, nonperishable items, such as maps, models, globes, etc.	1	2	3	4
c. Supplies—materials that must continually be replenished, such as newspapers, magazines, paperback books, duplicating masters, etc.	1	2	3	4
d. Money to buy supplies on a day-to-day basis	1	2	3	4
e. Storage space for equipment and supplies	1	2	3	4
f. Space available for classroom preparation	1	2	3	4
g. Spaces for small groups to work	1	2	3	4
h. Availability of laboratory assistants or paraprofessional help	1	2	3	4

18. Are there one or two journals or periodicals which you find particularly helpful to you in your teaching of social studies to this class?

(Circle one.)

Yes . . . . 1 Please specify: a. ______________________

b. ______________________

No 2

19. How often do you use each of the following techniques in teaching social studies to this class? If a technique does not apply to your class, please circle 1, "Never."

(Circle one on each line.)

	Never	Less Than Once A Month	At Least Once A Month	At Least Once A Week	Just About Daily
a. Lecture	1	2	3	4	5
b. Discussion	1	2	3	4	5
c. Student reports or projects	1	2	3	4	5
d. Library work	1	2	3	4	5
e. Students working at chalkboard	1	2	3	4	5
f. Individual assignments	1	2	3	4	5
g. Students use hands-on manipulative or laboratory materials	1	2	3	4	5
h. Televised instruction	1	2	3	4	5
i. Programmed instruction	1	2	3	4	5
j. Computer-assisted instruction	1	2	3	4	5
k. Tests or quizzes	1	2	3	4	5
l. Contracts	1	2	3	4	5
m. Simulations (role-play, debates, panels)	1	2	3	4	5
n. Field trips, excursions	1	2	3	4	5
o. Guest speakers	1	2	3	4	5
p. Brainstorming	1	2	3	4	5

20. For the following audio-visual materials, please indicate how often each is used in this social studies class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Less Than Once A Month	At Least Once A Month	At Least Once A Week
a. Films	1	2	3	4	5
b. Filmstrips	1	2	3	4	5
c. Film loops	1	2	3	4	5
d. Tapes	1	2	3	4	5
e. Slides	1	2	3	4	5
f. Records	1	2	3	4	5
g. Overhead projectors	1	2	3	4	5
h. Standard TV	1	2	3	4	5
i. Closed circuit TV	1	2	3	4	5
j. Videotape recorder/player	1	2	3	4	5

21. For the following equipment and materials please indicate the approximate number of days each is used in this social studies class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Use Less Than 10 Days	Use Between 10 and 50 Days	Use More Than 50 Days
a. Learning kits	1	2	3	4	5
b. Games and puzzles	1	2	3	4	5
c. Maps, charts, globes	1	2	3	4	5
d. Copies of original documents	1	2	3	4	5
e. Computer or computer terminals	1	2	3	4	5
f. Reference books	1	2	3	4	5
g. Paperbacks	1	2	3	4	5
h. Artifacts, models	1	2	3	4	5
i. Photographs, posters	1	2	3	4	5

SECTION E: TEXTBOOKS/PROGRAMS USED IN THIS CLASS

22a. Are you using one or more published textbooks or programs for teaching social studies to this class?

(Circle one.)

Yes .... 1 *GO TO Q. 23*
No .... 2 *GO TO Q. 22b*

22b. Briefly describe what you are using instead of a published textbook or program. *Then go to Question 27.*

____

____

____

For Questions 23a and 23b, please use the "List of Social Studies Textbooks/Programs" (gold) which was included with this questionnaire.

23a. Using the code numbers on the gold list, please specify each textbook/program that you are using in teaching social studies to this class. Then write in the copyright date of each.

	Code Number	Copyright Date
1.		
2.		
3.		
4.		
5.		

23b. If you are using any published social studies textbooks/programs in this class which are not on the gold list, please provide the following information for each:

Other Published Textbooks/Programs

Code No.	Title	Author	Publisher	Copyright Date
9001	______	______	______	______
9002	______	______	______	______
9003	______	______	______	______

Questions 24-26 relate to the one published textbook/program which is used most often by the students in this class.

24. Please write the code number of the one textbook/program that you listed either in Question 23a or Question 23b which is used most often by the students in this class.

Code Number ___ ___

25. For the one textbook/program that you specified in Question 24, does the publisher offer instructional materials to supplement or replace the textbook?

(Circle one.)

Yes . . . . 1 *GO TO Q. 26*
No . . . . 2 *GO TO Q. 27*

26. Please indicate the frequency with which you use each of the publisher-offered materials of the one program you specified in Question 24. If your published program does not include a particular type of materials, or if you do not have it available for use in this class, circle 1, "Not Available."

(Circle one on each line.)

	Not Available	Available But Never Use	Available And Use
a. Teacher manuals	1	2	3
b. Student workbooks	1	2	3
c. Hands-on or manipulative materials	1	2	3
d. Audio-visual materials or media kits	1	2	3
e. Activity cards	1	2	3
f. Test materials	1	2	3

27. If you could use any textbook or program for teaching social studies to this class, indicate the one that you would use.

(Circle one.)

I prefer the one I'm presently using	1	
I prefer one I've used previously	2	Specify. __________
Other	3	Specify. __________

SECTION F: YOUR MOST RECENT SOCIAL STUDIES LESSON IN THIS CLASS

Please answer the following questions specific to your most recent social studies lesson in this class. Do not be concerned if this lesson was not typical of instruction in this class.

28a. How many minutes did a typical student spend on social studies (including teacher-led instruction as well as small-group and individual work) during your most recent social studies lesson in this class? _______ minutes

28b. Did that lesson take place on the most recent day your school was in session?

(Circle one.)

Yes	1
No	2

29. Approximately how many of the minutes in that lesson were spent in each of the following general instructional arrangements?

	Number of Minutes
The teacher working with the entire class as a group (e.g. lecture, test, etc.)	________
The teacher working with small groups of students	________
The teacher supervising students working on individual activities	________
TOTAL	________ (should be the same as in Q 28a)

30. Indicate if each of the following activities took place during that social studies lesson.

(Circle one on each line.)

	Yes	No
a. Lecture	1	2
b. Discussion	1	2
c. Student use of hands-on, manipulative or laboratory materials	1	2

31. When did you complete this questionnaire? __________ (month) __________ (day) __________ (year)

THANK YOU FOR YOUR COOPERATION!

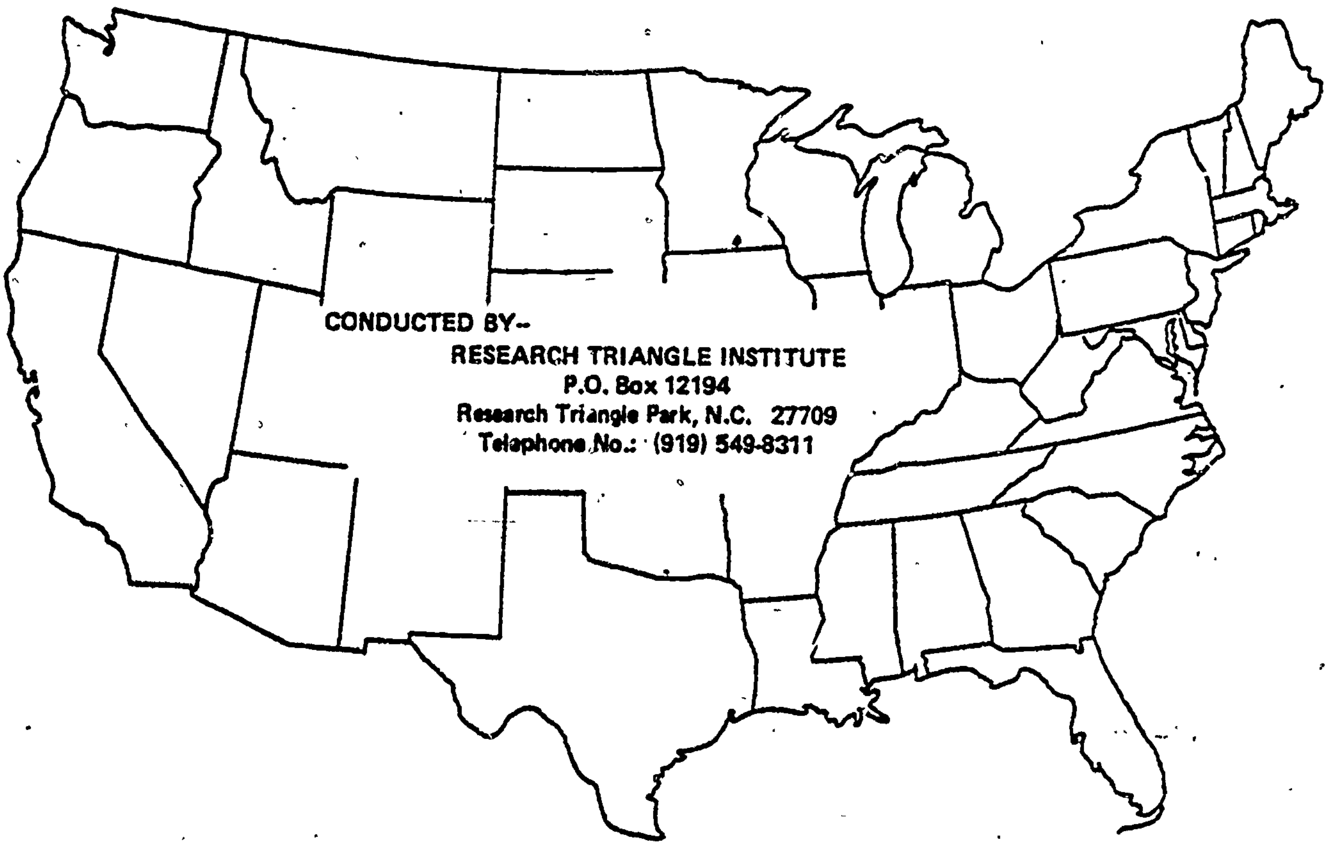
This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-S-76010
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

TEACHER QUESTIONNAIRE



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M 7-9

SECTION A: GENERAL INFORMATION

1a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes .... 1 *GO TO Q. 1b*
No .... 2 *GO TO Q. 2*

1b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. Inservice Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

2. How many years have you taught? (Count 1976-77 as one year.) __________

3. Have you received one or more degrees beyond the Bachelor's?

(Circle one.)

Yes 1
No 2

4. In what year did you last take a course for college credit? __________

5. Indicate your sex:

(Circle one.)

Male 1
Female 2

6. As a source of information about new developments in education how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

7. Are you currently teaching any courses that you do not feel adequately qualified to teach?

(Circle one.)

Yes .... 1 Please specify: a. ____________________

b. ____________________

No 2

SECTION B: YOUR EXPERIENCE WITH SELECTED MATHEMATICS CURRICULUM MATERIALS

This study involves science, mathematics, and social studies education. You have been selected to answer questions about mathematics. Questions 8 and 9 relate to your experience with selected mathematics curriculum materials.

8a. For each of the materials listed below, please circle one of the following categories: (1) "Have Never Seen," (2) "Have Seen But Not Used," or (3) "Have Used In Teaching." (Since some of these materials are being used on a very limited basis, you may not have seen many of them.)

(Circle one on each line.)

Code Number		Have Never Seen	Have Seen But Not Used	Have Used in Teaching
201.	Comprehensive School Mathematics Program—Elements of Mathematics (CSMP-EM)	1	2	3
202.	Huntington II	1	2	3
203.	Individualized Mathematics System (IMS)	1	2	3
204.	Madison Mathematics Project (MAD-M)	1	2	3

8a. (con.)

(Circle one on each line.)

Code Number		Have Never Seen	Have Seen But Not Used	Have Used in Teaching
205.	Modern Coordinate Geometry	1	2	3
206.	School Mathematics Study Group (SMSG)	1	2	3
207.	Search for Understanding Computation (SUC)	1	2	3
208.	Secondary School Mathematics Curriculum Improvement Study (SSMCIS)	1	2	3
209.	Stretchers and Shrinkers/Motion Geometry (University of Illinois Committee on School Mathematics)	1	2	3
210.	Technology-People-Environment (Engineering Concepts Curriculum Project-ECCP)	1	2	3
211.	The Man Made World (Engineering Concepts Curriculum Project-ECCP)	1	2	3

8b. Are you using any of these materials during the present (1976-77) school year? If so, please write in the code number(s) from the above list.

(Circle one.)

Yes . . . . 1 Code Number (s) ______ ______ ______

______ ______ ______

No 2

9a. With which one of the curriculum materials listed in question 8a are you most familiar? (If you answered "Have Never Seen" to all of the listed materials, go to Question 10 in SECTION C.)

Code Number ______ (Please write only one.)

9b. Please indicate all major sources from which you received information about the project you specified in question 9a.

(Circle all that apply.)

a.	Teachers	1
b.	Principals	2
c.	Local Subject Specialists/Coordinators	3
d.	State Department Personnel	4
e.	College Courses	5
f.	Local In-Service Programs	6
g.	Federally Sponsored Workshops	7
h.	Teacher Union Meetings	8
i.	Meetings of Professional Organizations	9
j.	Journals and Other Professional Publications	10
k.	Publishers and Sales Representatives	11
l.	Project Authors	12
m.	Involvement in Project Development	13

SECTION C: THE MATHEMATICS CURRICULUM IN YOUR SCHOOL

Questions 10 and 11 relate to the mathematics curriculum in your school and your opinions about it.

10. The following factors may affect mathematics instruction in your school as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat of a Problem	Not a Significant Problem
a. Belief that mathematics is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in mathematics	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in mathematics	1	2	3
k. Teachers inadequately prepared to teach mathematics	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach mathematics	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of mathematics electives	1	2	3
r. Low enrollments in mathematics courses	1	2	3

11. Please indicate your needs regarding assistance from a mathematics education resource person (e.g., a mathematics coordinator, a consultant, or another teacher) for each of the following:

(Circle one on each line.)

	Usually Do Not Need Assistance	Would Like Assistance But Receive Little or None	Would Like Assistance and Receive Adequate Assistance
a. Establishing instructional objectives	1	2	3
b. Lesson planning	1	2	3
c. Learning new teaching methods	1	2	3
d. Actually teaching lessons	1	2	3
e. Obtaining information about instructional materials	1	2	3
f. Obtaining subject matter information	1	2	3
g. Implementing discovery/inquiry approach	1	2	3
h. Using manipulative or hands-on materials	1	2	3
i. Maintaining equipment	1	2	3
j. Working with small groups of students	1	2	3
k. Maintaining discipline	1	2	3
l. Articulating instruction across grade levels	1	2	3
m. Using calculators	1	2	3

SECTION D: YOUR MATHEMATICS TEACHING

The remaining questions relate to your mathematics teaching. A class is considered to be a 7-9 class if at least half of the students in that class are in grades 7, 8, or 9. If you teach more than one class of mathematics per day, please answer these questions about your __________ 7-9 mathematics class.

12. What is the title of this course? ______________________________

13. What is the duration of this course?

(Circle one.)

Year	1	
Semester	2	
Quarter	3	
Other	4	Please specify: ____________________

14. How many students are there in this class? ______________

15. Please indicate the number of students in each of the following grade levels:

7	8	9	10	11	12

16. The ability makeup of this class is best described by which of the following? (Comparison should be with the average student in the grade.)

(Circle one.)

Composed primarily of high ability students	1
Composed primarily of low ability students	2
Composed primarily of average ability students or students of widely differing ability levels	3

17. In general, how would you rate each of the following for teaching mathematics to this class? If any do not apply to this class, please circle 1, "Not Relevant to This Class."

(Circle one on each line.)

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed
a. Facilities—building and classroom fixtures	1	2	3	4
b. Equipment—nonconsumable, nonperishable items, such as balances, meter sticks, calculators, etc.	1	2	3	4
c. Supplies—materials that must continually be replenished, such as graph paper, workbooks, task cards, duplicating masters, etc.	1	2	3	4
d. Money to buy supplies on a day-to-day basis	1	2	3	4
e. Storage space for equipment and supplies	1	2	3	4
f. Space available for classroom preparation	1	2	3	4
g. Spaces for small groups to work	1	2	3	4
h. Availability of laboratory assistants or paraprofessional help	1	2	3	4

18. Are there one or two journals or periodicals which you find particularly helpful to you in your teaching of mathematics to this class?

(Circle one.)

Yes . . . . 1 Please specify: a. ____________________

b. ____________________

No 2

19. Which of the following best describes the way concepts related to the metric system are used in your class?

(Circle one.)

Metric concepts are not included in this course	1
They are introduced in a special metric unit, then seldom used during the remainder of the course	2
They are introduced in a special metric unit and used throughout the course	3
They are introduced as needed throughout the course; there is no special metric unit	4

20. How often do you use each of the following techniques in teaching mathematics to this class? If a technique does not apply to your class, please circle 1, "Never."

(Circle one on each line.)

	Never	Less Than Once A Month	At Least Once A Month	At Least Once A Week	Just About Daily
a. Lecture	1	2	3	4	5
b. Discussion	1	2	3	4	5
c. Student reports or projects	1	2	3	4	5
d. Library work	1	2	3	4	5
e. Students working at chalkboard	1	2	3	4	5
f. Individual assignments	1	2	3	4	5
g. Students use hands-on manipulative or laboratory materials	1	2	3	4	5
h. Televised instruction	1	2	3	4	5
i. Programmed instruction	1	2	3	4	5
j. Computer-assisted instruction	1	2	3	4	5
k. Tests or quizzes	1	2	3	4	5
l. Contracts	1	2	3	4	5
m. Simulations (role-play, debates, panels)	1	2	3	4	5
n. Field trips, excursions	1	2	3	4	5
o. Guest speakers	1	2	3	4	5
p. Teacher demonstrations	1	2	3	4	5

21. For the following audio-visual materials, please indicate how often each is used in this mathematics class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Less Than Once A Month	At Least Once A Month	At Least Once A Week
a. Films	1	2	3	4	5
b. Filmstrips	1	2	3	4	5
c. Film loops	1	2	3	4	5
d. Tapes	1	2	3	4	5
e. Slides	1	2	3	4	5
f. Records	1	2	3	4	5
g. Overhead projectors	1	2	3	4	5
h. Standard TV	1	2	3	4	5
i. Closed circuit TV	1	2	3	4	5
j. Videotape recorder/player	1	2	3	4	5

22. For the following equipment and materials please indicate the approximate number of days each is used in this mathematics class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Use Less Than 10 Days	Use Between 10 and 50 Days	Use More Than 50 Days
a. Games and puzzles	1	2	3	4	5
b. Handheld calculators	1	2	3	4	5
c. Computers or computer terminals	1	2	3	4	5
d. Metric measurement tools (rulers, containers, weights, etc.)	1	2	3	4	5
e. Nonmetric measurement tools	1	2	3	4	5
f. Activity cards or kits	1	2	3	4	5
g. Numeration and place value manipulatives (rods, blocks, etc.)	1	2	3	4	5
h. Geometric tools	1	2	3	4	5

SECTION E: TEXTBOOKS/PROGRAMS USED IN THIS CLASS

23a. Are you using one or more published textbooks or programs for teaching mathematics to this class?

(Circle one.)

Yes . . . . 1 *GO TO Q. 24a*
No . . . . 2 *GO TO Q. 23b*

23b. Briefly describe what you are using instead of a published textbook or program. *Then go to Question 28.*

____

____

____

For Questions 24a and 24b, please use the "List of Mathematics Textbooks/Programs" (pink) which was included with this questionnaire.

24a. Using the code numbers on the pink list, please specify each textbook/program that you are using in teaching mathematics to this class. Then write in the copyright date of each.

	Code Number	Copyright Date
1.	______	______
2.	______	______
3.	______	______
4.	______	______
5.	______	______

24b. If you are using any published mathematics textbooks/programs in this class which are not on the pink list, please provide the following information for each:

Other Published Textbooks/Programs

Code No.	Title	Author	Publisher	Copyright Date
9001				
9002				
9003				

Questions 25-27 relate to the one published textbook/program which is used most often by the students in this class.

25. Please write the code number of the one textbook/program that you listed either in Question 24a or Question 24b which is used most often by the students in this class.

Code Number ________

26. For the one textbook/program that you specified in Question 25, does the publisher offer instructional materials to supplement or replace the textbook?

(Circle one.)

Yes . . . . 1 *GO TO Q. 27*
No . . . . 2 *GO TO Q. 28*

27. Please indicate the frequency with which you use each of the publisher-offered materials of the one program you specified in Question 25. If your published program does not include a particular type of materials, or if you do not have it available for use in this class, circle 1, "Not Available."

(Circle one on each line.)

	Not Available	Available But Never Use	Available And Use
a. Teacher manuals	1	2	3
b. Student workbooks	1	2	3
c. Hands-on or manipulative materials	1	2	3
d. Audio-visual materials or media kits	1	2	3
e. Activity cards	1	2	3
f. Test materials	1	2	3

28. If you could use any textbook or program for teaching mathematics to this class, indicate the one that you would use.

(Circle one.)

I prefer the one I'm presently using. 1
I prefer one I've used previously . . . . 2 Specify. ____________________
Other . . . . 3 Specify. ____________________

SECTION F: YOUR MOST RECENT MATHEMATICS LESSON IN THIS CLASS

Please answer the following questions specific to your most recent mathematics lesson in this class. Do not be concerned if this lesson was not typical of instruction in this class.

29a. How many minutes did a typical student spend on mathematics (including teacher-led instruction as well as small-group and individual work) during your most recent mathematics lesson in this class? _____ minutes

29b. Did that lesson take place on the most recent day your school was in session?

(Circle one.)

Yes 1
No 2

30. Approximately how many of the minutes in that lesson were spent in each of the following general instructional arrangements?

	Number of Minutes
The teacher working with the entire class as a group (e.g. lecture, test, etc.)	______
The teacher working with small groups of students	______
The teacher supervising students working on individual activities	______
TOTAL	______

(should be the same as in Q. 29a)

31. Indicate if each of the following activities took place during that mathematics lesson.

(Circle one on each line.)

	Yes		No
a. Lecture	1	....	2
b. Discussion	1	....	2
c. Student use of hands-on, manipulative or laboratory materials	1	....	2

32. How many classes of each of the following do you teach in a typical day?

	Number of Classes
a. General Math, Grade 7	_____
b. General Math, Grade 8	_____
c. General Math, Grade 9	_____
d. General Math, Grades 10-12	_____
e. Consumer and/or Business Math	_____
f. Elementary Algebra	_____
g. Advanced Algebra	_____
h. Geometry	_____
i. Trigonometry	_____
j. Probability and Statistics	_____
k. Computer Math	_____
l. Advanced Senior Math	_____
m. Calculus	_____
n. Other Mathematics (Please specify.)	
1. __________	_____
2. __________	_____
3. __________	_____
o. Science	_____
p. Social Studies	_____
q. Other Subjects	_____
r. TOTAL NUMBER OF CLASSES	_____

33. When did you complete this questionnaire? ______ (month) ______ (day) ______ (year)

THANK YOU FOR YOUR COOPERATION!

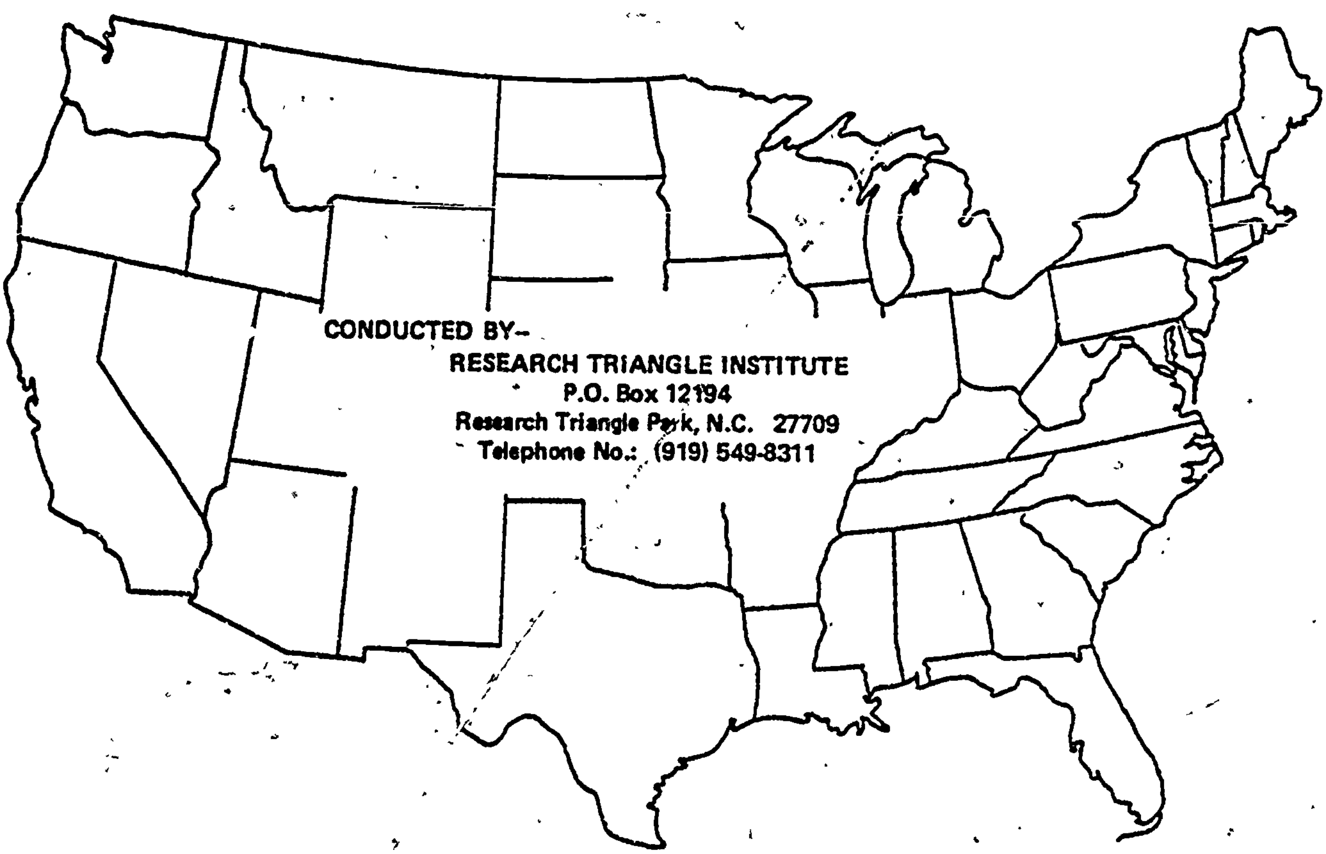
This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-S-76010
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

TEACHER QUESTIONNAIRE



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Research Triangle Park, N.C. 27709
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S 10-12 __

SECTION A: GENERAL INFORMATION

1a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes .... 1 *GO TO Q. 1b*
No .... 2 *GO TO Q. 2*

1b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. Inservice Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

2. How many years have you taught? (Count 1976-77 as one year.) ________

3. Have you received one or more degrees beyond the Bachelor's?

(Circle one.)

Yes 1
No 2

4. In what year did you last take a course for college credit? ________

5. Indicate your sex:

(Circle one.)

Male 1
Female 2

6. As a source of information about new developments in education how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

7. Are you currently teaching any courses that you do not feel adequately qualified to teach?

(Circle one.)

Yes . . . . 1 Please specify: a. ____________________

b. ____________________

No 2

SECTION B: YOUR EXPERIENCE WITH SELECTED SCIENCE CURRICULUM MATERIALS

This study involves science, mathematics, and social studies education. You have been selected to answer questions about science. Questions 8 and 9 relate to your experience with selected science curriculum materials.

8a. For each of the materials listed below, please circle one of the following categories: (1) "Have Never Seen," (2) "Have Seen But Not Used," or (3) "Have Used In Teaching." (Since some of these materials are being used on a very limited basis, you may not have seen many of them.)

(Circle one on each line.)

Code Number	Have Never Seen	Have Seen But Not Used	Have Used in Teaching
101. Biological Science: An Ecological Approach (BSCS Green)	1	2	3
102. Biological Science: An Inquiry into Life (BSCS Yellow)	1	2	3
103. Biological Science: Molecules to Man (BSCS Blue)	1	2	3
104. Biological Science: Interaction of Experiments and Ideas	1	2	3
105. Biological Science: Me Now	1	2	3
106. Biological Science: Me and My Environment	1	2	3
107. Biological Science: Patterns and Processes	1	2	3
108. Biomedical Interdisciplinary Curriculum Project	1	2	3

8a. (con.)

(Circle one on each line.)

Code Number		Have Never Seen	Have Seen But Not Used	Have Used in Teaching
109.	Chemical Bond Approach (CBA)	1	2	3
110.	Chemical Education Materials Study (CHEM Study)	1	2	3
111.	Environmental Studies for Urban Youth (ESSENCE)	1	2	3
112.	Human Sciences Program (BSCS)	1	2	3
113.	Huntington II	1	2	3
114.	Individualized Science Instructional Systems (ISIS)	1	2	3
115.	Introductory Physical Science (IPS)	1	2	3
116.	Investigating the Earth—Earth Science Curriculum Project (ESCP)	1	2	3
117.	Outdoor Biology Instructional Strategies (OBIS)	1	2	3
118.	Physical Science II (PSII)	1	2	3
119.	Physical Science Study Committee Physics (PSSC)	1	2	3
120.	Probing the Natural World—Intermediate Science Curriculum Study (ISCS)	1	2	3
121.	Project Physics Course (Harvard)	1	2	3
122.	Science Explorations for the Future	1	2	3
123.	Technology-People-Environment (Engineering Concepts Curriculum Project — ECCP)	1	2	3
124.	The Man-Made World (Engineering Concepts Curriculum Project — ECCP)	1	2	3
125.	Time, Space and Matter—Secondary School Science Project	1	2	3
126.	University of Illinois Astronomy Program	1	2	3

8b. Are you using any of these materials during the present (1976-77) school year? If so, please write in the code number(s) from the above list.

(Circle one.)

Yes . . . . 1 Code Number (s) ______ ______ ______

______ ______ ______

No 2

9a. With which one of the curriculum materials listed in question 8a are you most familiar? (If you answered "Have Never Seen" to all of the listed materials, go to Question 10 in SECTION C.)

Code Number ________ (Please write only one.)

9b. Please indicate all major sources from which you received information about the project you specified in question 9a.

(Circle all that apply.)

a. Teachers 1
b. Principals 2
c. Local Subject Specialists/Coordinators 3
d. State Department Personnel 4

e. College Courses 5
f. Local In-Service Programs 6
g. Federally Sponsored Workshops 7

h. Teacher Union Meetings 8
i. Meetings of Professional Organizations 9
j. Journals and Other Professional Publications 10

k. Publishers and Sales Representatives 11
l. Project Authors 12
m. Involvement in Project Development 13

SECTION C: THE SCIENCE CURRICULUM IN YOUR SCHOOL

Questions 10 and 11 relate to the science curriculum in your school and your opinions about it.

10. The following factors may affect science instruction in your school as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat of a Problem	Not a Significant Problem
a. Belief that science is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in science	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in science	1	2	3
k. Teachers inadequately prepared to teach science	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach science	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of science electives	1	2	3
r. Low enrollments in science courses	1	2	3

11. Please indicate your needs regarding assistance from a science education resource person (e.g., a science coordinator, a consultant, or another teacher) for each of the following:

(Circle one on each line.)

	Usually Do Not Need Assistance	Would Like Assistance But Receive Little or None	Would Like Assistance and Receive Adequate Assistance
a. Establishing instructional objectives	1	2	3
b. Lesson planning	1	2	3
c. Learning new teaching methods	1	2	3
d. Actually teaching lessons	1	2	3
e. Obtaining information about instructional materials	1	2	3
f. Obtaining subject matter information	1	2	3
g. Implementing discovery/inquiry approach	1	2	3
h. Using manipulative or hands-on materials	1	2	3
i. Maintaining equipment	1	2	3
j. Working with small groups of students	1	2	3
k. Maintaining discipline	1	2	3
l. Articulating instruction across grade levels	1	2	3
m. Maintaining live animals and plants	1	2	3

SECTION D: YOUR SCIENCE TEACHING

The remaining questions relate to your science teaching. A class is considered to be a 10-12 class if at least half of the students in that class are in grades 10, 11, or 12. If you teach more than one class of science per day, please answer these questions about your ______ 10-12 science class.

12. What is the title of this course? ________________________________

13. What is the duration of this course?

(Circle one.)

Year 1
Semester 2
Quarter 3
Year . . . . 4 Please specify: ____________________

14. How many students are there in this class? ____________________

15. Please indicate the number of students in each of the following grade levels:

7	8	9	10	11	12

16. The ability makeup of this class is best described by which of the following? (Comparison should be with the average student in the grade.)

(Circle one.)

Composed primarily of high ability students	1
Composed primarily of low ability students	2
Composed primarily of average ability students or students of widely differing ability levels	3

17. In general, how would you rate each of the following for teaching science to this class? If any do not apply to this class, please circle 1, "Not Relevant to This Class."

(Circle one on each line.)

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed
a. Facilities—building and classroom fixtures	1	2	3	4
b. Equipment—nonconsumable, nonperishable items such as microscopes, scales, etc.	1	2	3	4
c. Supplies—materials that must continually be replenished such as chemicals, dry cells, glassware, duplicating masters, etc.	1	2	3	4
d. Money to buy supplies on a day-to-day basis	1	2	3	4
e. Storage space for equipment and supplies	1	2	3	4
f. Space available for classroom preparation	1	2	3	4
g. Spaces for small groups to work	1	2	3	4
h. Availability of laboratory assistants or paraprofessional help	1	2	3	4

18. Are there one or two journals or periodicals which you find particularly helpful to you in your teaching of science to this class?

(Circle one.)

Yes . . . . 1 Please specify: a. ____________________

b. ____________________

No 2

19. Which of the following best describes the way concepts related to the metric system are used in your class?

(Circle one.)

Metric concepts are not included in this course	1
They are introduced in a special metric unit, then seldom used during the remainder of the course	2
They are introduced in a special metric unit and used throughout the course	3
They are introduced as needed throughout the course; there is no special metric unit	4

20. How often do you use each of the following techniques in teaching science to this class? If a technique does not apply to your class, please circle 1, "Never."

(Circle one on each line.)

	Never	Less Than Once A Month	At Least Once A Month	At Least Once A Week	Just About Daily
a. Lecture	1	2	3	4	5
b. Discussion	1	2	3	4	5
c. Student reports or projects	1	2	3	4	5
d. Library work	1	2	3	4	5
e. Students working at chalkboard	1	2	3	4	5
f. Individual assignments	1	2	3	4	5
g. Students use hands-on manipulative or laboratory materials	1	2	3	4	5
h. Televised instruction	1	2	3	4	5
i. Programmed instruction	1	2	3	4	5
j. Computer-assisted instruction	1	2	3	4	5
k. Tests or quizzes	1	2	3	4	5
l. Contracts	1	2	3	4	5
m. Simulations (role-play, debates, panels)	1	2	3	4	5
n. Field trips, excursions	1	2	3	4	5
o. Guest speakers	1	2	3	4	5
p. Teacher demonstrations	1	2	3	4	5

21. For the following audio-visual materials, please indicate how often each is used in this science class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Less Than Once A Month	At Least Once A Month	At Least Once A Week
a. Films	1	2	3	4	5
b. Filmstrips	1	2	3	4	5
c. Film loops	1	2	3	4	5
d. Tapes	1	2	3	4	5
e. Slides	1	2	3	4	5
f. Records	1	2	3	4	5
g. Overhead projectors	1	2	3	4	5
h. Standard TV	1	2	3	4	5
i. Closed circuit TV	1	2	3	4	5
j. Videotape recorder/player	1	2	3	4	5

22. For the following equipment and materials please indicate the approximate number of days each is used in this science class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Use Less Than 10 Days	Use Between 10 and 50 Days	Use More Than 50 Days
a. Computer or computer terminals	1	2	3	4	5
b. Greenhouse	1	2	3	4	5
c. Telescope	1	2	3	4	5
d. Darkroom	1	2	3	4	5
e. Weather Station	1	2	3	4	5
f. Hand-held calculators	1	2	3	4	5
g. Microscopes	1	2	3	4	5
h. Cameras	1	2	3	4	5
i. Models (e.g., the solar system; parts of organisms, etc.)	1	2	3	4	5
j. Games and puzzles	1	2	3	4	5
k. Magnifying glass	1	2	3	4	5
l. Meter sticks, rulers	1	2	3	4	5
m. Balance, scale	1	2	3	4	5
n. Batteries, bulbs	1	2	3	4	5
o. Magnets	1	2	3	4	5
p. Rocks	1	2	3	4	5
q. Living plants	1	2	3	4	5
r. Living animals	1	2	3	4	5

SECTION E: TEXTBOOKS/PROGRAMS USED IN THIS CLASS

23a. Are you using one or more published textbooks or programs for teaching science to this class?

(Circle one.)

Yes . . . . 1 *GO TO Q. 24*
No . . . . 2 *GO TO Q. 23b*

23b. Briefly describe what you are using instead of a published textbook or program. *Then go to Question 28.*

____

____

____

For Questions 24a and 24b, please use the "List of Science Textbooks/Programs" (yellow) which was included with this questionnaire.

24a. Using the code numbers on the yellow list, please specify each textbook/program that you are using in teaching science to this class. Then write in the copyright date of each.

	Code Number	Copyright Date
1.	______	______
2.	______	______
3.	______	______
4.	______	______
5.	______	______

24b. If you are using any published science textbooks/programs in this class which are not on the yellow list, please provide the following information for each:

Other Published Textbooks/Programs

Code No.	Title	Author	Publisher	Copyright Date
9001	______	______	______	______
9002	______	______	______	______
9003	______	______	______	______

Questions 25-27 relate to the one published textbook/program which is used most often by the students in this class.

25. Please write the code number of the one textbook/program that you listed either in Question 24a or Question 24b which is used most often by the students in this class.

Code Number ______

26. For the one textbook/program that you specified in Question 25, does the publisher offer instructional materials to supplement or replace the textbook?

(Circle one.)

Yes . . . . 1 *GO TO Q. 27*
No . . . . 2 *GO TO Q. 28*

27. Please indicate the frequency with which you use each of the publisher-offered materials of the one program you specified in Question 25: If your published program does not include a particular type of materials, or if you do not have it available for use in this class, circle 1, "Not Available."

(Circle one on each line.)

	Not Available	Available But Never Use	Available And Use
a. Teacher manuals	1	2	3
b. Student workbooks	1	2	3
c. Hands-on or manipulative materials	1	2	3
d. Audio-visual materials or media kits	1	2	3
e. Activity cards	1	2	3
f. Test materials	1	2	3

28. If you could use any textbook or program for teaching science to this class, indicate the one that you would use.

(Circle one.)

I prefer the one I'm presently using 1
I prefer one I've used previously .... 2 Specify. ______________
Other .... 3 Specify. ______________

SECTION F: YOUR MOST RECENT SCIENCE LESSON IN THIS CLASS

Please answer the following questions specific to your most recent science lesson in this class. Do not be concerned if this lesson was not typical of instruction in this class.

29a. How many minutes did a typical student spend on science (including teacher-led instruction as well as small-group and individual work) during your most recent science lesson in this class? ________ minutes

29b. Did that lesson take place on the most recent day your school was in session?

(Circle one.)

Yes 1
No 2

30. Approximately how many of the minutes in that lesson were spent in each of the following general instructional arrangements?

	Number of Minutes
The teacher working with the entire class as a group (e.g. lecture, test, etc.)	______
The teacher working with small groups of students	______
The teacher supervising students working on individual activities	______
TOTAL	______

(should be the same as in Q. 29a)

31. Indicate if each of the following activities took place during that science lesson.

(Circle one on each line.)

	Yes		No
a. Lecture	1	....	2
b. Discussion	1	....	2
c. Student use of hands-on, manipulative or laboratory materials	1	....	2

SECTION G: MISCELLANEOUS

32. How many classes of each of the following do you teach in a typical day?

	Number of Classes
a. General Science, Grade 7	______
b. General Science, Grade 8	______
c. General Science, Grade 9	______
d. General Science, Grades 10-12	______
e. Earth Science	______
f. Life Science	______
g. Physical Science	______
h. Biology I	______
i. Chemistry, 1st year	______
j. Physics, 1st year	______
k. Biology, 2nd year	______
l. Chemistry, 2nd year	______
m. Other Science (Please specify.)	
1. ______	______
2. ______	______
3. ______	______
n. Mathematics	______
o. Social Studies	______
p. Other Subjects	______
q. TOTAL NUMBER OF CLASSES	______

33. When did you complete this questionnaire? ______ (month) ______ (day) ______ (year)

THANK YOU FOR YOUR COOPERATION!

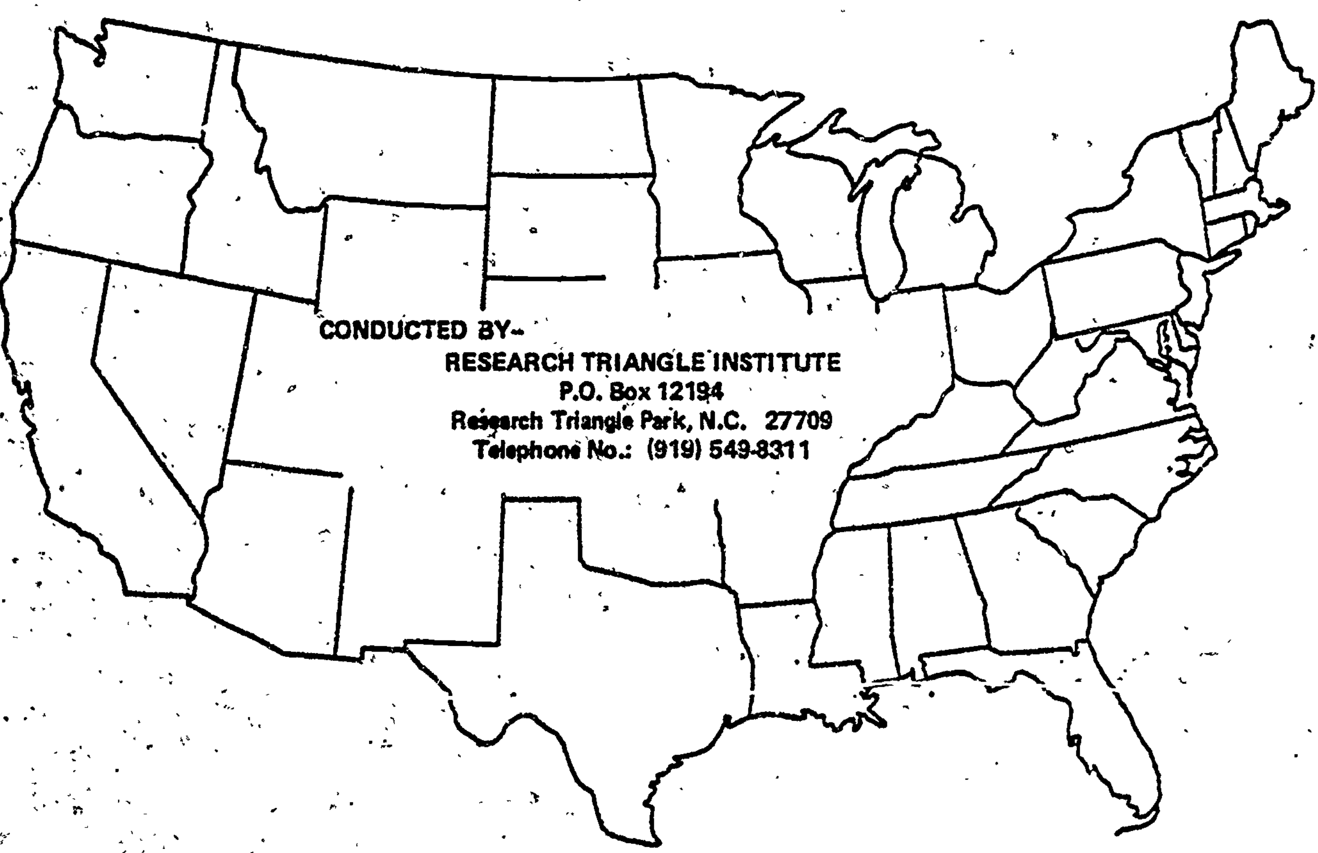
This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-S-76010
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

TEACHER QUESTIONNAIRE



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Telephone No.: (919) 549-8311

ST 7-9 __

SECTION A: GENERAL INFORMATION

1a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes .... 1 *GO TO Q. 1b*
No .... 2 *GO TO Q. 2*

1b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. Inservice Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

2. How many years have you taught? (Count 1976-77 as one year.) __________

3. Have you received one or more degrees beyond the Bachelor's?

(Circle one.)

Yes 1
No 2

4. In what year did you last take a course for college credit? __________

5. Indicate your sex:

(Circle one.)

Male 1
Female 2

6. As a source of information about new developments in education how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

7. Are you currently teaching any courses that you do not feel adequately qualified to teach?

(Circle one.)

Yes . . . . 1 Please specify: a. ______________

b. ______________

No 2

SECTION B: YOUR EXPERIENCE WITH SELECTED SOCIAL STUDIES CURRICULUM MATERIALS

This study involves science, mathematics, and social studies education. You have been selected to answer questions about social studies. Questions 8 and 9 relate to your experience with selected social studies curriculum materials.

8a. For each of the materials listed below, please circle one of the following categories: (1) "Have Never Seen," (2) "Have Seen But Not Used," or (3) "Have Used In Teaching." (Since some of these materials are being used on a very limited basis, you may not have seen many of them.)

(Circle one on each line.)

Code Number		Have Never Seen	Have Seen But Not Used	Have Used in Teaching
301.	American Political Behavior	1	2	3
302.	Biomedical Interdisciplinary Curriculum Project	1	2	3
303.	Black in White America	1	2	3
304.	Carnegie-Mellon Social Studies Curriculum Project (Holt Social Studies Curriculum)	1	2	3

8a. (con.)

(Circle one on each line.)

Code Number		Have Never Seen	Have Seen But Not Used	Have Used in Teaching
305.	Comparing Political Experiences	1	2	3
306.	Concepts and Inquiry (Educational Research Council)	1	2	3
307.	Economics in Society (ECON 12)	1	2	3
308.	Environmental Studies for Urban Youth (ESSENCE)	1	2	3
309.	Exploring Childhood	1	2	3
310.	Exploring Human Nature	1	2	3
311.	Family of Man (Minnesota Project Social Studies)	1	2	3
312.	Georgia Anthropology Curriculum Project	1	2	3
313.	Geography in an Urban Age—High School Geography Project	1	2	3
314.	Human Behavior Curriculum Project	1	2	3
315.	Human Sciences Program (BSCS)	1	2	3
316.	Huntington II	1	2	3
317.	Patterns in Human History—Anthropology Curriculum Study Project	1	2	3
318.	People and Technology	1	2	3
319.	Project Africa	1	2	3
320.	Social Studies Dynamics Program	1	2	3
321.	Sociological Resources for the Social Studies (Episodes in Social Inquiry Series; Inquiries in Sociology; Readings in Sociology)	1	2	3

8b. Are you using any of these materials during the present (1976-77) school year? If so, please write in the code number(s) from the above list.

(Circle one.)

Yes . . . . 1 Code Number (s) ____ ____ ____

____ ____ ____

No 2

9a. With which one of the curriculum materials listed in question 8a are you most familiar? (If you answered "Have Never Seen" to all of the listed materials, go to Question 10 in SECTION C.)

Code Number ____ (Please write only one.)

9b. Please indicate all major sources from which you received information about the project you specified in question 9a.

(Circle all that apply.)

a. Teachers	1
b. Principals	2
c. Local Subject Specialists/Coordinators	3
d. State Department Personnel	4
e. College Courses	5
f. Local In-Service Programs	6
g. Federally Sponsored Workshops	7
h. Teacher Union Meetings	8
i. Meetings of Professional Organizations	9
j. Journals and Other Professional Publications	10
k. Publishers and Sales Representatives	11
l. Project Authors	12
m. Involvement in Project Development	13

SECTION C: THE SOCIAL STUDIES CURRICULUM IN YOUR SCHOOL

Questions 10 and 11 relate to the social studies curriculum in your school and your opinions about it.

10. The following factors may affect social studies instruction in your school as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat of a Problem	Not a Significant Problem
a. Belief that social studies is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in social studies	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in social studies	1	2	3
k. Teachers inadequately prepared to teach social studies	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach social studies	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of social studies electives	1	2	3
r. Low enrollments in social studies courses	1	2	3

11. Please indicate your needs regarding assistance from a social studies education resource person (e.g., a social studies coordinator, a consultant, or another teacher) for each of the following:

(Circle one on each line.)

	Usually Do Not Need Assistance	Would Like Assistance But Receive Little or None	Would Like Assistance and Receive Adequate Assistance
a. Establishing instructional objectives	1	2	3
b. Lesson planning	1	2	3
c. Learning new teaching methods	1	2	3
d. Actually teaching lessons	1	2	3
e. Obtaining information about instructional materials	1	2	3
f. Obtaining subject matter information	1	2	3
g. Implementing discovery/inquiry approach	1	2	3
h. Using manipulative or hands-on materials	1	2	3
i. Maintaining equipment	1	2	3
j. Working with small groups of students	1	2	3
k. Maintaining discipline	1	2	3
l. Articulating instruction across grade levels	1	2	3

SECTION D: YOUR SOCIAL STUDIES TEACHING

The remaining questions relate to your social studies teaching. For the purposes of this survey, social studies has been broken down into "social science" and "other social studies" as follows:

Social Science — anthropology, civics, economics, geography, government, political science, psychology, sociology, and similar courses

Other Social Studies — history and general social studies

We would like you to answer questions about your ________ 7-9 "other social studies" class of the day. (A class is considered to be a 7-9 class if at least half of the students in that class are in grades 7, 8, or 9.)

12. What is the title of this course? ______________________________

13. What is the duration of this course?

(Circle one.)

Year	1
Semester	2
Quarter	3
Other	4 Please specify: ____________________

14. How many students are there in this class? ______________

15. Please indicate the number of students in each of the following grade levels:

7	8	9	10	11	12

16. How does the amount of time spent on social studies in this class compare to the amount of time spent on social studies in a similar class 3 years ago?

(Circle one.)

I did not teach this grade level 3 years ago	1
More time is spent on social studies now	2
About the same amount of time is spent on social studies now as 3 years ago	3
Less time is spent on social studies now	4

17. In general, how would you rate each of the following for teaching social studies to this class? If any do not apply to this class, please circle 1, "Not Relevant to This Class."

(Circle one on each line.)

	Not Relevant to This Class	Very Good	Satisfactory	Improvement Needed
a. Facilities—building and classroom fixtures	1	2	3	4
b. Equipment—nonconsumable, nonperishable items, such as maps, models, globes, etc.	1	2	3	4
c. Supplies—materials that must continually be replenished, such as newspapers, magazines, paperback books, duplicating masters, etc.	1	2	3	4
d. Money to buy supplies on a day-to-day basis	1	2	3	4
e. Storage space for equipment and supplies	1	2	3	4
f. Space available for classroom preparation	1	2	3	4
g. Spaces for small groups to work	1	2	3	4
h. Availability of laboratory assistants or paraprofessional help	1	2	3	4

18. Are there one or two journals or periodicals which you find particularly helpful to you in your teaching of social studies to this class?

(Circle one.)

Yes . . . . 1, Please specify: a. ____________________

b. ____________________

No 2

19. How often do you use each of the following techniques in teaching social studies to this class? If a technique does not apply to your class, please circle 1, "Never."

(Circle one on each line.)

	Never	Less Than Once A Month	At Least Once A Month	At Least Once A Week	Just About Daily
a. Lecture	1	2	3	4	5
b. Discussion	1	2	3	4	5
c. Student reports or projects	1	2	3	4	5
d. Library work	1	2	3	4	5
e. Students working at chalkboard	1	2	3	4	5
f. Individual assignments	1	2	3	4	5
g. Students use hands-on manipulative or laboratory materials	1	2	3	4	5
h. Televised instruction	1	2	3	4	5
i. Programmed instruction	1	2	3	4	5
j. Computer-assisted instruction	1	2	3	4	5
k. Tests or quizzes	1	2	3	4	5
l. Contracts	1	2	3	4	5
m. Simulations (role-play, debates, panels)	1	2	3	4	5
n. Field trips, excursions	1	2	3	4	5
o. Guest speakers	1	2	3	4	5
p. Brainstorming	1	2	3	4	5

20. For the following audio-visual materials, please indicate how often each is used in this social studies class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Less Than Once A Month	At Least Once A Month	At Least Once A Week
a. Films	1	2	3	4	5
b. Filmstrips	1	2	3	4	5
c. Film loops	1	2	3	4	5
d. Tapes	1	2	3	4	5
e. Slides	1	2	3	4	5
f. Records	1	2	3	4	5
g. Overhead projectors	1	2	3	4	5
h. Standard TV	1	2	3	4	5
i. Closed circuit TV	1	2	3	4	5
j. Videotape recorder/player	1	2	3	4	5

21. For the following equipment and materials please indicate the approximate number of days each is used in this social studies class. For those that you do not use, circle either 1, "Not Needed" or 2, "Needed But Not Available."

(Circle one on each line.)

	Not Needed	Needed But Not Available	Use Less Than 10 Days	Use Between 10 and 50 Days	Use More Than 50 Days
a. Learning kits	1	2	3	4	5
b. Games and puzzles	1	2	3	4	5
c. Maps, charts, globes	1	2	3	4	5
d. Copies of original documents	1	2	3	4	5
e. Computer or computer terminals	1	2	3	4	5
f. Reference books	1	2	3	4	5
g. Paperbacks	1	2	3	4	5
h. Artifacts, models	1	2	3	4	5
i. Photographs, posters	1	2	3	4	5

SECTION E: TEXTBOOKS/PROGRAMS USED IN THIS CLASS

22a. Are you using one or more published textbooks or programs for teaching social studies to this class?

(Circle one.)

Yes .... 1 *GO TO Q. 23a*
No .... 2 *GO TO Q. 22b*

22b. Briefly describe what you are using instead of a published textbook or program. *Then go to Question 27.*

____

____

____

For Questions 23a and 23b, please use the "List of Social Studies Textbooks/Programs" (white) which was included with this questionnaire.

23a. Using the code numbers on the white list, please specify each textbook/program that you are using in teaching social studies to this class. Then write in the copyright date of each.

	Code Number	Copyright Date
1.	______	______
2.	______	______
3.	______	______
4.	______	______
5.	______	______

23b. If you are using any published social studies textbooks/programs in this class which are not on the white list, please provide the following information for each:

Other Published Textbooks/Programs

Code No.	Title	Author	Publisher	Copyright Date
9001	______	______	______	______
9002	______	______	______	______
9003	______	______	______	______

Questions 24-26 relate to the one published textbook/program which is used most often by the students in this class.

24. Please write the code number of the one textbook/program that you listed either in Question 23a or Question 23b which is used most often by the students in this class.

Code Number ______

25. For the one textbook/program that you specified in Question 24, does the publisher offer instructional materials to supplement or replace the textbook?

(Circle one.)

Yes . . . . 1 *GO TO Q. 26*
No . . . . 2 *GO TO Q. 27*

26. Please indicate the frequency with which you use each of the publisher-offered materials of the one program you specified in Question 24. If your published program does not include a particular type of materials, or if you do not have it available for use in this class, circle 1, "Not Available."

(Circle one on each line.)

	Not Available	Available But Never Use	Available And Use
a. Teacher manuals	1	2	3
b. Student workbooks	1	2	3
c. ~~Hands-on or manipulative materials~~	1	2	3
d. Audio-visual materials or media kits	1	2	3
e. Activity cards	1	2	3
f. Test materials	1	2	3

27. If you could use any textbook or program for teaching social studies to this class, indicate the one that you would use.

(Circle one.)

I prefer the one I'm presently using. 1
I prefer one I've used previously . . . . 2 Specify. ____________________
Other . . . . 3 Specify. ____________________

SECTION F: YOUR MOST RECENT SOCIAL STUDIES LESSON IN THIS CLASS

Please answer the following questions specific to your most recent social studies lesson in this class. Do not be concerned if this lesson was not typical of instruction in this class.

28a. How many minutes did a typical student spend on social studies (including teacher-led instruction as well as small-group and individual work) during your most recent social studies lesson in this class? ________ minutes

28b. Did that lesson take place on the most recent day your school was in session?

(Circle one.)

Yes 1
No 2

29. Approximately how many of the minutes in that lesson were spent in each of the following general instructional arrangements?

	Number of Minutes
The teacher working with the entire class as a group (e.g. lecture, test, etc.)	________
The teacher working with small groups of students	________
The teacher supervising students working on individual activities	________
TOTAL	________ (should be the same as in Q 28a)

30. Indicate if each of the following activities took place during that social studies lesson.

(Circle one on each line.)

	Yes	No
a. Lecture	1	2
b. Discussion	1	2
c. Student use of hands-on, manipulative or laboratory materials	1	2

31. How many classes of each of the following do you teach in a typical day?

		Number of Classes
a.	Social Studies, Grade 7	______
b.	Social Studies, Grade 8	______
c.	Social Studies, Grade 9	______
d.	Social Studies, Grades 10-12	______
e.	State History	______
f.	U.S. History	______
g.	World History	______
h.	American Government	______
i.	Economics	______
j.	Geography	______
k.	Psychology	______
l.	Sociology	______
m.	Other Social Studies (Please specify.)	
	1. ______	______
	2. ______	______
	3. ______	______
n.	Science	______
o.	Mathematics	______
p.	Other Subjects	______
q.	TOTAL NUMBER OF CLASSES	______

32. When did you complete this questionnaire? ______ (month) ______ (day) ______ (year)

THANK YOU FOR YOUR COOPERATION!

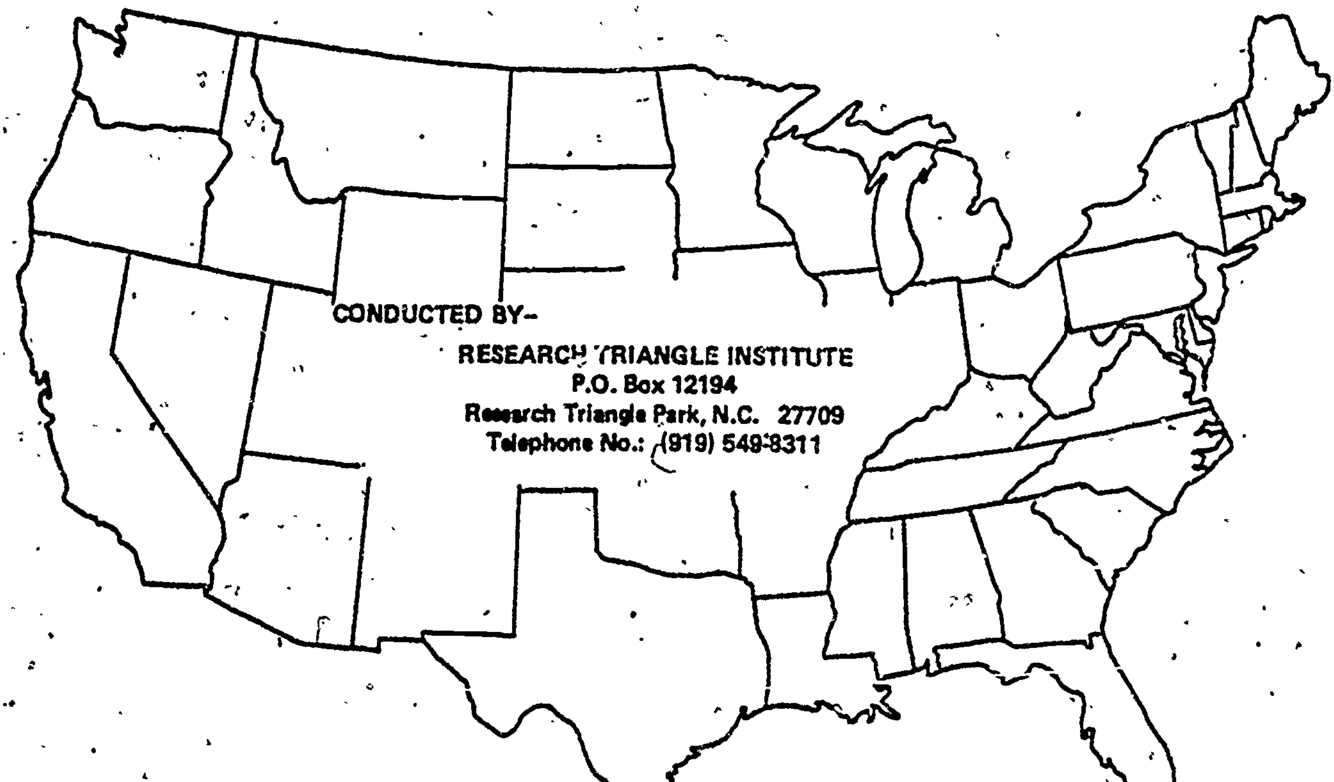
This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-3-76010
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

PRINCIPAL QUESTIONNAIRE



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RESEARCH TRIANGLE INSTITUTE
P.O. Box 12194
Research Triangle Park, N.C. 27709
Telephone No.: (919) 549-8311

1. How many students are there in your school? ____________

2. What is the enrollment by grade?

K	1	2	3	4	5	6	7	8	9	10	11	12	special

3. Which of the following best describes the location of your school?

(Circle one.)

A rural or farming community	1
A small city or town of fewer than 50,000 people that is not a suburb of a larger place	2
A medium-sized city (50,000-100,000 people)	3
A suburb of a medium-sized city	4
A large city (100,000-500,000 people)	5
A suburb of a large city	6
A very large city (over 500,000 people)	7
A suburb of a very large city	8

4. Approximately how many of the students in your school qualify for the Federal free lunch program? ____________

5. Which of the following was your undergraduate major in college? (If you majored in education, indicate the subject area of greatest concentration.)

(Circle one.)

Mathematics	1
Science	2
Social Studies	3
Reading/Language Arts/English	4
Another Subject Area	5

6. Most principals feel better qualified to supervise instruction in some areas than in others. How qualified do you feel to assist teachers in improving instruction in each of the following subject areas?

(Circle one on each line.)

	Not Well Qualified	Adequately Qualified	Very Well Qualified
a. Mathematics	1	2	3
b. Science	1	2	3
c. Social Studies	1	2	3
d. Reading/Language Arts/English	1	2	3

7. As a source of information about new developments in education, how useful do you find each of the following:

(Circle one on each line.)

		Not Useful	Somewhat Useful	Very Useful
a.	Teachers	1	2	3
b.	Principals	1	2	3
c.	Local Subject Specialists/Coordinators	1	2	3
d.	State Department Personnel	1	2	3
e.	College Courses	1	2	3
f.	Local In-Service Programs	1	2	3
g.	Federally Sponsored Workshops	1	2	3
h.	Teacher Union Meetings	1	2	3
i.	Meetings of Professional Organizations	1	2	3
j.	Journals and Other Professional Publications	1	2	3
k.	Publishers and Sales Representatives	1	2	3

8a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes . . . . 1 *GO TO Q. 8b*
No . . . . 2 *GO TO Q. 9*

8b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a.	Academic Year Institutes	1
b.	Administrators Conferences	2
c.	Cooperative College-School Science Programs	3
d.	In-Service Institutes	4
e.	Resource Personnel Workshops	5
f.	Summer Institutes	6
	1974 TO THE PRESENT (Instructional Improvement Implementation)	
g.	Leadership Development Projects	7
h.	School System Projects	8
i.	Teacher Centered Projects	9
	1976 TO THE PRESENT	
j.	Chautauqua Short Courses	10

9. Which of the following are available to students in your school?

(Circle all that apply.)

a.	Computer or Computer Terminals	1
b.	Greenhouse	2
c.	Telescope	3
d.	Darkroom	4
e.	Weather Station	5
f.	Hand-held Calculators	6
g.	Microscopes	7
h.	Cameras	8
i.	Models (e.g., of the solar system, parts of organisms, etc.)	9
j.	Small Group Meeting Rooms	10
k.	Resource Center for Individualized Instruction	11
l.	Mathematics Laboratory	12

10. Does your school have an annual budget specifically for the purchase of new science equipment (nonconsumable, nonperishable items such as microscopes, scales, etc.)? If yes, please specify the total amount of this budget for the 1976-77 school year.

(Circle one.)

Yes .... 1 Total Amount ________
No 2

11. Does your school have an annual budget specifically for the purchase of consumable science supplies (materials that must continually be replenished such as chemicals, glassware, batteries, etc.)? If yes, please specify the total amount of this budget for the 1976-77 school year.

(Circle one.)

Yes .... 1 Total Amount ________
No 2

12. Indicate the degree of involvement of each of the following in the textbook selection process in your school. If you do not know about the involvement of a particular group, please circle 1, "Don't Know."

(Circle one on each line.)

	Don't Know	Not Involved	Somewhat Involved	Heavily Involved
a. Superintendent or assistant superintendent	1	2	3	4
b. District-wide supervisors	1	2	3	4
c. Principals	1	2	3	4
d. Teacher committees	1	2	3	4
e. Individual teachers	1	2	3	4
f. School board members	1	2	3	4
g. Parents	1	2	3	4
h. Students	1	2	3	4

13. Here is a list of factors which may cause serious problems in one or more subject areas in your school. For each factor indicate the subject areas for which this is a serious problem. (You may circle more than one subject area for any given factor, or you may not circle any subject area for a particular factor.)

SUBJECT AREAS IN WHICH THIS IS A SERIOUS PROBLEM

(Circle all that apply on each line.)

	Mathematics	Science	Social Studies	Reading
a. Belief that this subject is less important than other subjects	1	2	3	4
b. Compliance with Federal regulations	1	2	3	4
c. Inadequate facilities	1	2	3	4
d. Insufficient funds for purchasing equipment and supplies	1	2	3	4
e. Lack of materials for individualizing instruction	1	2	3	4
f. Out-of-date teaching materials	1	2	3	4
g. Insufficient numbers of textbooks	1	2	3	4
h. Lack of student interest in subject	1	2	3	4
i. Inadequate student reading abilities	1	2	3	4
j. Lack of teacher interest in subject	1	2	3	4
k. Teachers inadequately prepared to teach subject	1	2	3	4
l. Lack of teacher planning time	1	2	3	4
m. Not enough time to teach subject	1	2	3	4
n. Class sizes too large	1	2	3	4
o. Difficulty in maintaining discipline	1	2	3	4
p. Inadequate articulation of instruction across grade levels	1	2	3	4
q. Inadequate diversity of electives	1	2	3	4
r. Low enrollments in courses	1	2	3	4

14. Are your department chairmen given released time or additional salary to carry out their duties?

(Circle one.)

Yes 1
No 2
Our school has no department chairmen 3

Questions 15 and 16 relate to the yellow "List of Curriculum Materials" which was included with this questionnaire.

15. Are any of the materials on that list being used in your school during the 1976-77 school year?

(Circle one.)

Yes ...... 1 *GO TO Q. 16*
No .... 2 *GO TO Q. 17*

16. Using the code numbers on the yellow sheets, please list the mathematics, science, social studies, and interdisciplinary curriculum materials being used in your school during the 1976-77 school year. If more than three of any subject area are being used, use the available space to continue lists of code numbers.

CODE NUMBERS OF CURRICULUM MATERIALS
BEING USED IN 1976-77

a. Mathematics	b. Science	c. Social Studies	d. Interdisciplinary
1. ______	1. ______	1. ______	1. ______
2. ______	2. ______	2. ______	2. ______
3. ______	3. ______	3. ______	3. ______

17. For each mathematics, science, and social studies course offered in your school at the present time, please specify the current total enrollment and the number of sections offered. Include all of your mathematics, science, and social studies courses either in the main section or in the "Other" section. Do not include courses or enrollments more than once.

	Current Total Enrollment	Number of Sections
MATHEMATICS		
a. General Math, Grade 7	______	______
b. General Math, Grade 8	______	______
c. General Math, Grade 9	______	______
d. General Math, Grades 10-12	______	______
e. Consumer and/or Business Math	______	______
f. Elementary Algebra	______	______
g. Advanced Algebra	______	______
h. Geometry	______	______
i. Trigonometry	______	______
j. Probability and Statistics	______	______
k. Computer Math	______	______
l. Advanced Senior Math	______	______
m. Calculus	______	______
n. Other (Please specify.)		
1. ______	______	______
2. ______	______	______
3. ______	______	______
4. ______	______	______
5. ______	______	______

17. (continued)

	Current Total Enrollment	Number of Sections
SCIENCE		
a. General Science, Grade 7	______	______
b. General Science, Grade 8	______	______
c. General Science, Grade 9	______	______
d. General Science, Grades 10-12	______	______
e. Earth Science	______	______
f. Life Science	______	______
g. Physical Science	______	______
h. Biology I	______	______
i. Chemistry, 1st year	______	______
j. Physics, 1st year	______	______
k. Biology, 2nd year	______	______
l. Chemistry, 2nd year	______	______
m. Other (Please specify.)		
1. ______	______	______
2. ______	______	______
3. ______	______	______
4. ______	______	______
5. ______	______	______
SOCIAL STUDIES		
a. Social Studies, Grade 7	______	______
b. Social Studies, Grade 8	______	______
c. Social Studies, Grade 9	______	______
d. Social Studies, Grades 10-12	______	______
e. State History	______	______
f. U.S. History	______	______
g. World History	______	______
h. American Government	______	______
i. Economics	______	______
j. Geography	______	______
k. Psychology	______	______
l. Sociology	______	______
m. Other (Please specify.)		
1. ______	______	______
2. ______	______	______
3. ______	______	______
4. ______	______	______
5. ______	______	______

18. When did you complete this questionnaire? ______ Month ______ Day ______ Year

THANK YOU FOR YOUR COOPERATION!

This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-S-76010
Approval Expires 12/31/77

SUPERINTENDENT QUESTIONNAIRE

1. What is the current total enrollment in your district? ________

2. Please indicate the current enrollment in your district in each of the following grade levels:

K	1	2	3	4	5	6	7	8	9	10	11	12	Special

3. How many full-time equivalent teachers are there in your district? ________

4. What was the average per pupil expenditure in your district during the 1975-76 school year? (Please include all annual operating expenses such as salaries, in-service training, materials and supplies, equipment maintenance, transportation, etc. Do not include capital outlay.) $________

5. Which of the following best describes the location of your district? (If your district covers two or more categories, circle the one which includes the greatest number of students.)

(Circle one.)

A rural or farming community 1
A small city or town of fewer than 50,000 people that is not a suburb of a larger place 2
A medium-sized city (50,000-100,000 people) 3
A suburb of a medium-sized city 4
A large city (100,000-500,000 people) 5
A suburb of a large city 6
A very large city (over 500,000 people) 7
A suburb of a very large city 8

6. For each of the following funding sources, indicate the subject areas for which your district received funds for facilities, equipment or supplies during the 1975-76 school year.

(Circle as many as apply on each line.)

Funding Source	Science	Mathematics	Social Studies
a. National Defense Education Act (NDEA)	1	2	3
b. Elementary & Secondary Education Act: (ESEA Titles I - VIII)	1	2	3
c. Other Government Grants	1	2	3
d. Specific State Grants (beyond general state aid allocations)	1	2	3
e. Private Foundations	1	2	3
f. Parent Organizations	1	2	3

7. Please indicate the state and district requirements for in-service education of classroom teachers.

Days

Number of Days Required by State .... ____

Number of Additional Days Required by District .... ____

TOTAL. ____

(OVER)

8. Indicate the degree of involvement of each of the following in the textbook selection process in your district. If you do not know about the involvement of a particular group, please Circle 1, "Don't Know."

(Circle one on each line.)

	Don't Know	Not Involved	Somewhat Involved	Heavily Involved
a. Superintendent or assistant superintendent	1	2	3	4
b. District-wide supervisors	1	2	3	4
c. Principals	1	2	3	4
d. Teacher committees	1	2	3	4
e. Individual teachers	1	2	3	4
f. School board members	1	2	3	4
g. Parents	1	2	3	4
h. Students	1	2	3	4

9. How many full-time equivalent district-wide supervisor/coordinators are there in your district?

________ *IF NONE, GO TO Q.11*

10. Please indicate whether each of the following is required, preferred, or not usually considered in the selection of district supervisors.

(Circle one on each line.)

	Required	Preferred	Not Usually Considered
a. Prior relevant teaching experience	1	2	3
b. Prior teaching experience in your district	1	2	3
c. Supervisor certification	1	2	3
d. Master's degree in relevant field	1	2	3
e. Doctoral degree in relevant field	1	2	3
f. Prior experience as district supervisor	1	2	3

11. Please indicate whether you agree or disagree with each of the following statements about federal support for curriculum development.

(Circle one on each line.)

	Agree	Disagree
a. Federal support for curriculum development and dissemination has improved the quality of curriculum alternatives available to schools	1	2
b. The national curriculum effort has greatly improved the quality of classroom instruction	1	2
c. The federal government should direct more attention toward disseminating the new curricula	1	2
d. NSF should continue to sponsor programs to help teachers learn to implement NSF-funded curricula	1	2
e. During the next 10 years, federal support for curriculum development is probably unnecessary	1	2
f. Federally-funded curriculum projects should not deal with controversial topics	1	2
g. Federal support for curriculum development and dissemination tends to create a nationally uniform curriculum	1	2

12. When did you complete this questionnaire? ____(month) ____(day) ____(year)

THANK YOU FOR YOUR COOPERATION.

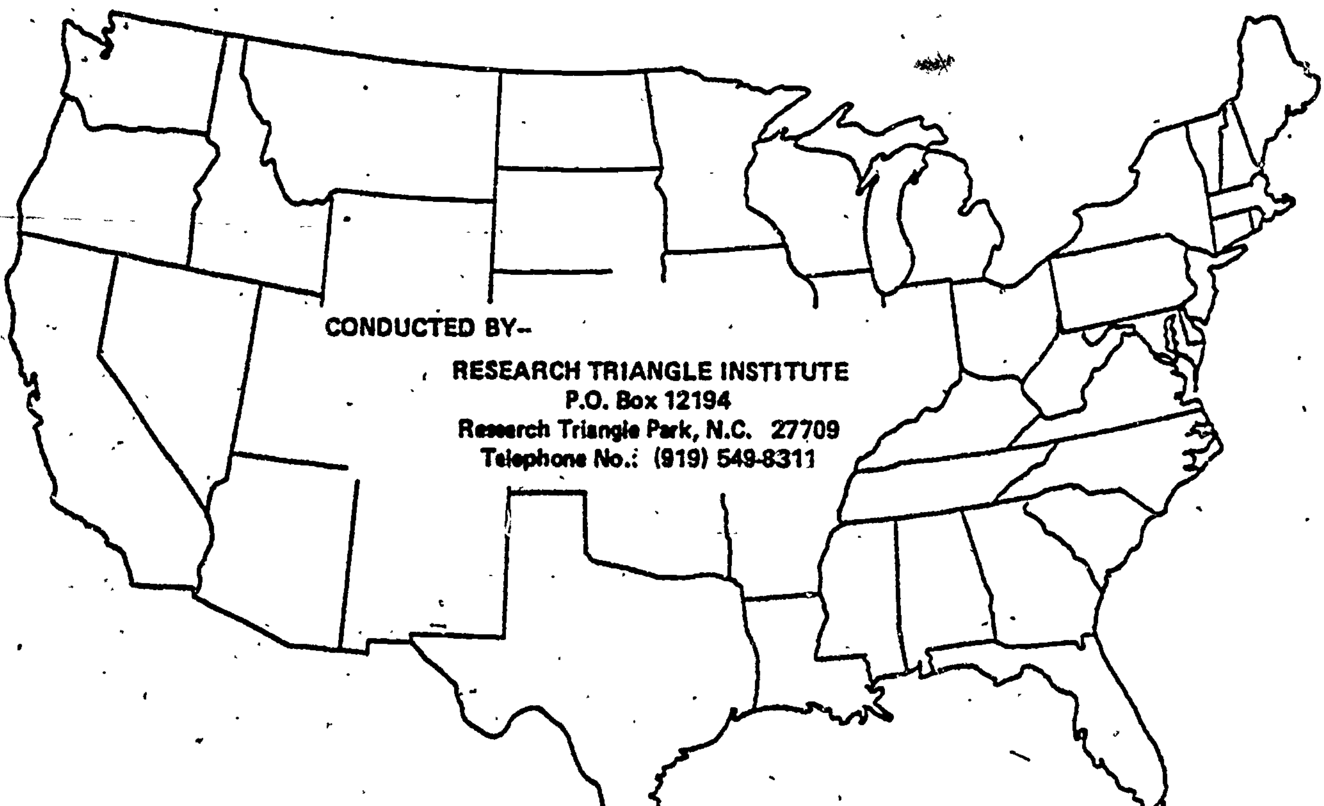
This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-S-78010
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

DISTRICT CURRICULUM QUESTIONNAIRE



CONDUCTED BY--

RESEARCH TRIANGLE INSTITUTE
P.O. Box 12194
Research Triangle Park, N.C. 27709
Telephone No.: (919) 549-8311

Your superintendent has designated you as the person to respond to this questionnaire about district curriculum programs. The first part of this questionnaire (green) asks for general information. The remainder of the questionnaire deals with district curriculum programs in one or more specific subject areas and grade ranges.

1. Which of the following comes closest to your job title?

(Circle one.)

Superintendent	1
Associate or assistant superintendent for instruction	2
District supervisor/curriculum coordinator	3
Department chairman	4
Principal	5
Teacher	6

2. What percent of your time is spent on district-wide supervision/coordination of one or more subject areas? _______% *IF 0, GO TO Q.5*

3. Indicate the subject area(s) for which you are supervisor/coordinator.

(Circle all that apply.)

a. Mathematics	1
b. Science	2
c. Social Studies	3
d. Reading/Language Arts/English	4
e. Other Subjects	5

4. How much of the time that you spend in district-wide supervision/coordination is spent on each of the following activities?

(Circle one on each line.)

	None	A Small Amount	A Moderate Amount	A Large Amount
a. Administrative duties such as scheduling, budgeting, filling out forms, ordering supplies, etc.	1	2	3	4
b. Locating and evaluating instructional materials	1	2	3	4
c. Disseminating information about curriculum materials	1	2	3	4
d. Planning and/or developing curricula	1	2	3	4
e. Observing classrooms	1	2	3	4
f. Hiring teachers	1	2	3	4
g. Evaluating teachers	1	2	3	4
h. Working with individual teachers outside the classroom situation	1	2	3	4
i. Providing/coordinating in-service programs	1	2	3	4
j. Attending professional meetings	1	2	3	4

5. During the 1975-76 school year, did you attend a professional meeting at the state, regional (several states) or national level in each of the following areas?

(Circle one on each line.)

	Yes	No
a. Mathematics	1	2
b. Science	1	2
c. Social Studies	1	2
d. Reading/Language Arts/English	1	2

6. Indicate whether you belong to a state level professional education organization in each of the following areas:

(Circle one on each line.)

	Yes	No
a. Mathematics	1	2
b. Science	1	2
c. Social Science/Social Studies	1	2
d. Reading/Language Arts/English	1	2
e. Supervision and Curriculum Development	1	2

7. To which of the following national professional organizations do you belong?

(Circle all that apply.)

a. American Educational Research Association (AERA) 1
b. Association for Education of Teachers in Science (AETS) 2
c. Association for Supervision & Curriculum Development (ASCD)... 3
d. International Reading Association (IRA) 4

e. National Association of Research in Science Teaching (NARST).. 5
f. National Education Association (NEA) 6
g. National Council for the Social Studies (NCSS) 7
h. National Council of Teachers of Mathematics (NCTM) 8

i. National Council of Supervisors of Mathematics (NCSM) 9
j. National Science Supervisors Association (NSSA) 10
k. National Science Teachers Association (NSTA) 11
l. Phi Delta Kappa (PDK) 12
m. Social Studies Specialists Association (SSSA) 13

8. As a source of information about new developments in education, how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-Service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

9. Are there one or two journals or periodicals which you find particularly helpful to you in your work?

(Circle one.)

Yes .... 1 Please specify: a.______________________

b.______________________

No 2

10a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes .... 1 *GO TO Q.10b*
No .... 2 *GO TO Q.11*

10b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. In-Service Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

11. Indicate the degree of involvement of each of the following in the textbook selection process in your district. If you do not know about the involvement of a particular group, please circle 1, "Don't Know."

(Circle one on each line.)

	Don't Know	Not Involved	Somewhat Involved	Heavily Involved
a. Superintendent or assistant superintendent	1	2	3	4
b. District-wide supervisors	1	2	3	4
c. Principals	1	2	3	4
d. Teacher committees	1	2	3	4
e. Individual teachers	1	2	3	4
f. School board members	1	2	3	4
g. Parents	1	2	3	4
h. Students	1	2	3	4

DISTRICT CURRICULUM QUESTIONNAIRE
K-6 MATHEMATICS

Please answer the following questions as they apply to mathematics in grades K-6 in your school district.

1. Approximately how many teachers of K-6 mathematics are there in your district? ________

2. How many full-time equivalent persons are available for district-wide supervision/coordination of K-6 mathematics? (Include only the proportion of time allocated to mathematics in grades K-6.) ________

3a. Are guidelines set by the district for the minimum amount of time to be spent on mathematics instruction in any of the grades K-6?

(Circle one.)

Yes .... 1 *GO TO Q.3b*
No .... 2 *GO TO Q.4*

3b. For each grade level, indicate the recommended minimum amount of time to be spent on mathematics instruction each week. If there are no guidelines for a particular grade, write 0 for that grade.

MINUTES PER WEEK

K	1	2	3	4	5	6

4. Does your district use nationally-normed standardized mathematics tests in any of the grades K-6?

(Circle one.)

Yes .... 1 *GO TO Q.5*
No .... 2 *GO TO Q.6*

5. To what extent have standardized test results in K-6 mathematics been used in your district for each of the following?

(Circle one on each line.)

	Not At All	To A Small Extent	To A Moderate Extent	To A Great Extent
a. Reporting results to individual teachers	1	2	3	4
b. Reporting results to students' parents	1	2	3	4
c. Revising curricula	1	2	3	4
d. Determining topics for in-service education programs	1	2	3	4
e. Placing students in remedial programs	1	2	3	4
f. Placing students in programs for the gifted	1	2	3	4
g. Diagnosis/prescription for individual students	1	2	3	4
h. Reporting progress for federally-funded programs	1	2	3	4

6a. For each of the following curriculum materials, please indicate if (1) you have seen it, (2) it was used in grades K-6 in your district prior to this year, and (3) if it is being used in grades K-6 during the 1976-77 school year.

(Circle all that apply.)

Code Number		I Have Seen It	Used Prior to 1976-77	Being Used in 1976-77
201	Comprehensive School Mathematics Program—Elementary Component (CSMP)	1	2	3
202	Developing Mathematical Processes (DMP)	1	2	3
203	Educational Research Council Mathematics Program (formerly Greater Cleveland Mathematics Program)	1	2	3
204	Individualized Mathematics System (IMS)	1	2	3
205	Individually Prescribed Instruction (IPI)	1	2	3
206	Infinity Factory	1	2	3
207	Madison Mathematics Project (MAD-M)	1	2	3
208	MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	1	2	3
209	School Mathematics Study Group (SMSG)	1	2	3
210	Search for Understanding Computation (SUC)	1	2	3
211	Unified Science and Mathematics for Elementary Schools (USMES)	1	2	3

6b. With which one of the curriculum materials listed in question 6a are you most familiar? (If you have never seen any of the listed materials, go to question 8.)

Code Number: ____________ (Please write only one.)

7. Please indicate all <u>major</u> sources from which you received information about the materials you specified in question 6b.

(Circle all that apply.)

a.	Teachers	1
b.	Principals	2
c.	Local Subject Specialists/Coordinators	3
d.	State Department Personnel	4
e.	College Courses	5
f.	Local In-Service Programs	6
g.	Federally Sponsored Workshops	7
h.	Teacher Union Meetings	8
i.	Meetings of Professional Organizations	9
j.	Journals and Other Professional Publications	10
k.	Publishers and Sales Representatives	11
l.	Project Authors	12
m.	Involvement in Project Development	13

8. The following factors may affect K-6 mathematics instruction in your district as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat Of A Problem	Not A Significant Problem
a. Belief that mathematics is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in mathematics	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in mathematics	1	2	3
k. Teachers inadequately prepared to teach mathematics	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach mathematics	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of mathematics electives	1	2	3
r. Low enrollments in mathematics courses	1	2	3

DISTRICT CURRICULUM QUESTIONNAIRE
K-6 SCIENCE

Please answer the following questions as they apply to science in grades K-6 in your school district.

1. Approximately how many teachers of K-6 science are there in your district? ________

2. How many full-time equivalent persons are available for district-wide supervision/coordination of K-6 science? (Include only the proportion of time allocated to science in grades K-6.) ________

3a. Are guidelines set by the district for the minimum amount of time to be spent on science instruction in any of the grades K-6?

(Circle one.)

Yes .... 1 *GO TO Q.3b*
No .... 2 *GO TO Q.4*

3b. For each grade level, indicate the recommended minimum amount of time to be spent on science instruction each week. If there are no guidelines for a particular grade, write 0 for that grade.

MINUTES PER WEEK

K	1	2	3	4	5	6

4. Does your district use nationally-normed standardized science tests in any of the grades K-6?

(Circle one.)

Yes .... 1 *GO TO Q.5*
No .... 2 *GO TO Q.6*

5. To what extent have standardized test results in K-6 science been used in your district for each of the following?

(Circle one on each line.)

	Not At All	To A Small Extent	To A Moderate Extent	To A Great Extent
a. Reporting results to individual teachers	1	2	3	4
b. Reporting results to students' parents	1	2	3	4
c. Revising curricula	1	2	3	4
d. Determining topics for in-service education programs	1	2	3	4
e. Placing students in remedial programs	1	2	3	4
f. Placing students in programs for the gifted	1	2	3	4
g. Diagnosis/prescription for individual students	1	2	3	4
h. Reporting progress for federally-funded programs	1	2	3	4

6a. For each of the following curriculum materials, please indicate if (1) you have seen it, (2) it was used in grades K-6 in your district prior to this year, and (3) if it is being used in grades K-6 during the 1976-77 school year.

(Circle all that apply.)

Code Number		I Have Seen It	Used Prior to 1976-77	Being Used in 1976-77
101	BSCS Elementary School Science Project	1	2	3
102	Conceptually Oriented Program in Elementary Science (COPES)	1	2	3
103	Elementary Science Study (ESS)	1	2	3
104	Environmental Studies for Urban Youth (ESSENCE)	1	2	3
105	Human Sciences Program (BSCS)	1	2	3
106	Individualized Science (IS)	1	2	3
107	MINNEMAST (Minnesota School Mathematics and Science Teaching Project)	1	2	3
108	Science--A Process Approach (SAPA)	1	2	3
109	Science Curriculum Improvement Study (SCIS)	1	2	3
110	Science Explorations for the Future	1	2	3
111	Unified Science and Mathematics for Elementary Schools (USMES)	1	2	3
112	University of Illinois Astronomy Program	1	2	3

6b. With which one of the curriculum materials listed in question 6a are you most familiar? (If you have never seen any of the listed materials, go to question 8.)

Code Number: ____________ (Please write only one.)

7. Please indicate all <u>major</u> sources from which you received information about the materials you specified in question 6b.

(Circle all that apply.)

a.	Teachers	1
b.	Principals	2
c.	Local Subject Specialists/Coordinators	3
d.	State Department Personnel	4
e.	College Courses	5
f.	Local In-Service Programs	6
g.	Federally Sponsored Workshops	7
h.	Teacher Union Meetings	8
i.	Meetings of Professional Organizations	9
j.	Journals and Other Professional Publications	10
k.	Publishers and Sales Representatives	11
l.	Project Authors	12
m.	Involvement in Project Development	13

8. The following factors may affect K-6 science instruction in your district as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat Of A Problem	Not A Significant Problem
a. Belief that science is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in science	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in science	1	2	3
k. Teachers inadequately prepared to teach science	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach science	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of science electives	1	2	3
r. Low enrollments in science courses	1	2	3

DISTRICT CURRICULUM QUESTIONNAIRE
K-6 SOCIAL STUDIES

Please answer the following questions as they apply to social studies in grades K-6 in your school district.

1. Approximately how many teachers of K-6 social studies are there in your district? ______

2. How many full-time equivalent persons are available for district-wide supervision/coordination of K-6 social studies? (Include only the proportion of time allocated to social studies in grades K-6.) ______

3a. Are guidelines set by the district for the minimum amount of time to be spent on social studies instruction in any of the grades K-6?

(Circle one.)

Yes .... 1 *GO TO Q.3b*
No .... 2 *GO TO Q.4*

3b. For each grade level, indicate the recommended minimum amount of time to be spent on social studies instruction each week. If there are no guidelines for a particular grade, write 0 for that grade.

MINUTES PER WEEK

K	1	2	3	4	5	6

4. Does your district use nationally-normed standardized social studies tests in any of the grades K-6?

(Circle one.)

Yes .... 1 *GO TO Q.5*
No .... 2 *GO TO Q.6*

5. To what extent have standardized test results in K-6 social studies been used in your district for each of the following?

(Circle one on each line.)

	Not At All	To A Small Extent	To A Moderate Extent	To A Great Extent
a. Reporting results to individual teachers	1	2	3	4
b. Reporting results to students' parents	1	2	3	4
c. Revising curricula	1	2	3	4
d. Determining topics for in-service education programs	1	2	3	4
e. Placing students in remedial programs	1	2	3	4
f. Placing students in programs for the gifted	1	2	3	4
g. Diagnosis/prescription for individual students	1	2	3	4
h. Reporting progress for federally-funded programs	1	2	3	4

6a. For each of the following curriculum materials, please indicate if (1) you have seen it, (2) it was used in grades K-6 in your district prior to this year, and (3) if it is being used in grades K-6 during the 1976-77 school year.

(Circle all that apply.)

Code Number		I Have Seen It	Used Prior to 1976-77	Being Used in 1976-77
301	Concepts and Inquiry (Educational Research Council)	1	2	3
302	Elementary School Economics I, II (University of Chicago)	1	2	3
303	Elementary Social Science Education Program Laboratory Units (SRA)	1	2	3
304	Environmental Studies for Urban Youth (ESSENCE)	1	2	3
305	Family of Man (Minnesota Project Social Studies)	1	2	3
306	Georgia Anthropology Curriculum Project	1	2	3
307	Human Sciences Program (BSCS)	1	2	3
308	Man: A Course of Study (MACOS)	1	2	3
309	Our Working World	1	2	3
310	Social Studies Dynamics Program	1	2	3
311	Taba Program in Social Science	1	2	3

6b. With which one of the curriculum materials listed in question 6a are you most familiar? (If you have never seen any of the listed materials, go to question 8.)

Code Number: ____________ (Please write only one.)

7. Please indicate all major sources from which you received information about the materials you specified in question 6b.

(Circle all that apply.)

a.	Teachers	1
b.	Principals	2
c.	Local Subject Specialists/Coordinators	3
d.	State Department Personnel	4
e.	College Courses	5
f.	Local In-Service Programs	6
g.	Federally Sponsored Workshops	7
h.	Teacher Union Meetings	8
i.	Meetings of Professional Organizations	9
j.	Journals and Other Professional Publications	10
k.	Publishers and Sales Representatives	11
l.	Project Authors	12
m.	Involvement in Project Development	13

8. The following factors may affect K-6 social studies instruction in your district as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat Of A Problem	Not A Significant Problem
a. Belief that social studies is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in social studies	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in social studies	1	2	3
k. Teachers inadequately prepared to teach social studies	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach social studies	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of social studies electives	1	2	3
r. Low enrollments in social studies courses	1	2	3

DISTRICT CURRICULUM QUESTIONNAIRE
7-12 MATHEMATICS

Please answer the following questions as they apply to mathematics in grades 7-12 in your school district.

1. Approximately how many teachers of 7-12 mathematics are there in your district? _______

2. How many full-time equivalent persons are available for district-wide supervision/coordination of 7-12 mathematics? (Include only the proportion of time allocated to <u>mathematics</u> in grades 7-12.) _______

3a. What amount of total mathematics instruction is a student in your district required to complete in grades 9-12 for high school graduation? (Please specify in years, semesters, or quarters.) ____________

3b. Are there specific mathematics courses which are required?

(Circle one.) Required Courses:

Yes .... 1 (Please specify.) a.____________________

b.____________________

No 2

4. Does your district use nationally-normed standardized mathematics tests in any of the grades 7-12?

(Circle one.)

Yes .... 1 *GO TO Q.5*
No .... 2 *TO TO Q.6*

5. To what extent have standardized test results in 7-12 mathematics been used in your district for each of the following?

(Circle one on each line.)

	Not At All	To A Small Extent	To A Moderate Extent	To A Great Extent
a. Reporting results to individual teachers	1	2	3	4
b. Reporting results to students' parents	1	2	3	4
c. Revising curricula	1	2	3	4
d. Determining topics for in-service education programs	1	2	3	4
e. Placing students in remedial programs	1	2	3	4
f. Placing students in programs for the gifted	1	2	3	4
g. Diagnosis/prescription for individual students	1	2	3	4
h. Reporting progress for federally-funded programs	1	2	3	4

6a. For each of the following curriculum materials, please indicate if (1) you have seen it, (2) it was used in grades 7-12 in your district prior to this year, and (3) it is being used in grades 7-12 during the 1976-77 school year.

(Circle all that apply.)

Code Number		I Have Seen It	Used Prior to 1976-77	Being Used in 1976-77
201	Comprehensive School Mathematics Program -- Elements of Mathematics (CSMP-EM)	1	2	3
202	Huntington II	1	2	3
203	Individualized Mathematics System (IMS)	1	2	3
204	Madison Mathematics Project (MAD-M)	1	2	3
205	Modern Coordinate Geometry	1	2	3
206	School Mathematics Study Group (SMSG)	1	2	3
207	Search for Understanding Computation (SUC)	1	2	3
208	Secondary School Mathematics Curriculum Improvement Study (SSMCIS)	1	2	3
209	Stretchers and Shrinkers/Motion Geometry (University of Illinois Committee on School Mathematics)	1	2	3
210	Technology-People-Environment (Engineering Concepts Curriculum Project - ECCP)	1	2	3
211	The Man Made World (Engineering Concepts Curriculum Project - ECCP)	1	2	3

6b. With which one of the curriculum materials listed in question 6a are you most familiar? (If you have never seen any of the listed materials, go to question 8.)

Code Number ____________ (Please write only one.)

7. Please indicate all major sources from which you received information about the materials you specified in question 6b.

(Circle all that apply.)

a.	Teachers	1
b.	Principals	2
c.	Local Subject Specialists/Coordinators	3
d.	State Department Personnel	4
e.	College Courses	5
f.	Local In-Service Programs	6
g.	Federally Sponsored Workshops	7
h.	Teacher Union Meetings	8
i.	Meetings of Professional Organizations	9
j.	Journals and Other Professional Publications	10
k.	Publishers and Sales Representatives	11
l.	Project Authors	12
m.	Involvement in Project Development	13

8. The following factors may affect 7-12 mathematics instruction in your district as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat Of A Problem	Not A Significant Problem
a. Belief that mathematics is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in mathematics	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in mathematics	1	2	3
k. Teachers inadequately prepared to teach mathematics	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach mathematics	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of mathematics electives	1	2	3
r. Low enrollments in mathematics courses	1	2	3

DISTRICT CURRICULUM QUESTIONNAIRE
7-12 SCIENCE

Please answer the following questions as they apply to science in grades 7-12 in your school district.

1. Approximately how many teachers of 7-12 science are there in your district? ________

2. How many full-time equivalent persons are available for district-wide supervision/coordination of 7-12 science? (Include only the proportion of time allocated to science in grades 7-12.) ________

3a. What amount of total science instruction is a student in your district required to complete in grades 9-12 for high school graduation? (Please specify in years, semesters, or quarters.) ________________

3b. Are there specific science courses which are required?

(Circle one.) Required Courses:

Yes .... 1 (Please specify.) a.________________________

b.________________________

No 2

4. Does your district use nationally-normed standardized science tests in any of the grades 7-12?

(Circle one.)

Yes .... 1 *GO TO Q.5*
No .... 2 *TO TO Q.6*

5. To what extent have standardized test results in 7-12 science been used in your district for each of the following?

(Circle one on each line.)

	Not At All	To A Small Extent	To A Moderate Extent	To A Great Extent
a. Reporting results to individual teachers	1	2	3	4
b. Reporting results to students' parents	1	2	3	4
c. Revising curricula	1	2	3	4
d. Determining topics for in-service education programs	1	2	3	4
e. Placing students in remedial programs	1	2	3	4
f. Placing students in programs for the gifted	1	2	3	4
g. Diagnosis/prescription for individual students	1	2	3	4
h. Reporting progress for federally-funded programs	1	2	3	4

6a. For each of the following curriculum materials, please indicate if (1) you have seen it, (2) it was used in grades 7-12 in your district prior to this year, and (3) it is being used in grades 7-12 during the 1976-77 school year.

(Circle all that apply.)

Code Number		I Have Seen It	Used Prior to 1976-77	Being Used in 1976-77
101	Biological Science: An Ecological Approach (BSCS Green)	1	2	3
102	Biological Science: An Inquiry into Life (BSCS Yellow)	1	2	3
103	Biological Science: Molecules to Man (BSCS Blue)	1	2	3
104	Biological Science: Interaction of Experiments and Ideas	1	2	3
105	Biological Science: Me Now	1	2	3
106	Biological Science: Me and My Environment	1	2	3
107	Biological Science: Patterns and Processes	1	2	3
108	Biomedical Interdisciplinary Curriculum Project	1	2	3
109	Chemical Bond Approach (CBA)	1	2	3
110	Chemical Education Materials Study (CHEM Study)	1	2	3
111	Environmental Studies for Urban Youth (ESSENCE)	1	2	3
112	Human Sciences Program (BSCS)	1	2	3
113	Huntington II	1	2	3
114	Individualized Science Instructional Systems (ISIS)	1	2	3
115	Introductory Physical Science (IPS)	1	2	3
116	Investigating the Earth--Earth Science Curriculum Project (ESCP)	1	2	3
117	Outdoor Biology Instructional Strategies (OBIS)	1	2	3
118	Physical Science II (PSII)	1	2	3
119	Physical Science Study Committee Physics (PSSC)	1	2	3
120	Probing the Natural World-Intermediate Science Curriculum Study (ISCS)	1	2	3
121	Project Physics Course (Harvard)	1	2	3
122	Science Explorations for the Future	1	2	3
123	Technology-People-Environment (Engineering Concepts Curriculum Project - ECCP)	1	2	3
124	The Man Made World (Engineering Concepts Curriculum Project - ECCP)	1	2	3
125	Time, Space, and Matter -- Secondary School Science Project	1	2	3
126	University of Illinois Astronomy Program	1	2	3

6b. With which one of the curriculum materials listed in question 6a are you most familiar? (If you have never seen any of the listed materials, go to question 8.)

Code Number ____________ (Please write only one.)

7. Please indicate all major sources from which you received information about the materials you specified in question 6b.

(Circle all that apply.)

a.	Teachers	1
b.	Principals	2
c.	Local Subject Specialists/Coordinators	3
d.	State Department Personnel	4
e.	College Courses	5
f.	Local In-Service Programs	6
g.	Federally Sponsored Workshops	7
h.	Teacher Union Meetings	8
i.	Meetings of Professional Organizations	9
j.	Journals and Other Professional Publications	10
k.	Publishers and Sales Representatives	11
l.	Project Authors	12
m.	Involvement in Project Development	13

8. The following factors may affect 7-12 science instruction in your district as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat Of A Problem	Not A Significant Problem
a. Belief that science is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in science	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in science	1	2	3
k. Teachers inadequately prepared to teach science	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach science	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of science electives	1	2	3
r. Low enrollments in science courses	1	2	3

DISTRICT CURRICULUM QUESTIONNAIRE
7-12 SOCIAL STUDIES

Please answer the following questions as they apply to social studies in grades 7-12 in your school district.

1. Approximately how many teachers of 7-12 social studies are there in your district? ____

2. How many full-time equivalent persons are available for district-wide supervision/coordination of 7-12 social studies? (Include only the proportion of time allocated to social studies in grades 7-12.) ____

3a. What amount of total social studies instruction is a student in your district required to complete in grades 9-12 for high school graduation? (Please specify in years, semesters, or quarters.) ____________

3b. Are there specific social studies courses which are required?

(Circle one.) Required Courses:

Yes .... 1 (Please specify.) a.____________________________

No .... 2 b.____________________________

4. Does your district use nationally-normed standardized social studies tests in any of the grades 7-12?

(Circle one.)

Yes .... 1 *GO TO Q.5*
No .... 2 *TO TO Q.6*

5. To what extent have standardized test results in 7-12 social studies been used in your district for each of the following?

(Circle one on each line.)

	Not At All	To A Small Extent	To A Moderate Extent	To A Great Extent
a. Reporting results to individual teachers	1	2	3	4
b. Reporting results to students' parents	1	2	3	4
c. Revising curricula	1	2	3	4
d. Determining topics for in-service education programs	1	2	3	4
e. Placing students in remedial programs	1	2	3	4
f. Placing students in programs for the gifted........	1	2	3	4
g. Diagnosis/prescription for individual students	1	2	3	4
h. Reporting progress for federally-funded programs...	1	2	3	4

6a. For each of the following curriculum materials, please indicate if (1) you have seen it, (2) it was used in grades 7-12 in your district prior to this year, and (3) it is being used in grades 7-12 during the 1976-77 school year.

(Circle all that apply.)

Code Number		I Have Seen It	Used Prior to 1976-77	Being Used in 1976-77
301	American Political Behavior	1	2	3
302	Biomedical Interdisciplinary Curriculum Project	1	2	3
303	Black in White America	1	2	3
304	Carnegie-Mellon Social Studies Curriculum Project (Holt Social Studies Curriculum)	1	2	3
305	Comparing Political Experiences	1	2	3
306	Concepts and Inquiry (Educational Research Council)	1	2	3
307	Economics in Society (ECON 12)	1	2	3
308	Environmental Studies for Urban Youth (ESSENCE)	1	2	3
309	Exploring Childhood	1	2	3
310	Exploring Human Nature	1	2	3
311	Family of Man (Minnesota Project Social Studies)	1	2	3
312	Georgia Anthropology Curriculum Project	1	2	3
313	Geography in an Urban Age — High School Geography Project	1	2	3
314	Human Behavior Curriculum Project	1	2	3
315	Human Sciences Program (BSCS)	1	2	3
316	Huntington II	1	2	3
317	Patterns in Human History — Anthropology Curriculum Study Project	1	2	3
318	People and Technology	1	2	3
319	Project Africa	1	2	3
320	Social Studies Dynamics Program	1	2	3
321	Sociological Resources for the Social Studies (Episodes in Social Inquiry Series; Inquiries in Sociology; Readings in Sociology)	1	2	3

6b. With which one of the curriculum materials listed in question 6a are you most familiar? (If you have never seen any of the listed materials, go to question 8.)

Code Number ____________ (Please write only one.)

7. Please indicate all major sources from which you received information about the materials you specified in question 6b.

(Circle all that apply.)

a.	Teachers	1
b.	Principals	2
c.	Local Subject Specialists/Coordinators	3
d.	State Department Personnel	4
e.	College Courses	5
f.	Local In-Service Programs	6
g.	Federally Sponsored Workshops	7
h.	Teacher Union Meetings	8
i.	Meetings of Professional Organizations	9
j.	Journals and Other Professional Publications	10
k.	Publishers and Sales Representatives	11
l.	Project Authors	12
m.	Involvement in Project Development	13

8. The following factors may affect 7-12 social studies instruction in your district as a whole. In your opinion, how much of a problem is caused by each of the following?

(Circle one on each line.)

	Serious Problem	Somewhat Of A Problem	Not A Significant Problem
a. Belief that social studies is less important than other subjects	1	2	3
b. Compliance with Federal regulations	1	2	3
c. Inadequate facilities	1	2	3
d. Insufficient funds for purchasing equipment and supplies	1	2	3
e. Lack of materials for individualizing instruction	1	2	3
f. Out-of-date teaching materials	1	2	3
g. Insufficient numbers of textbooks	1	2	3
h. Lack of student interest in social studies	1	2	3
i. Inadequate student reading abilities	1	2	3
j. Lack of teacher interest in social studies	1	2	3
k. Teachers inadequately prepared to teach social studies	1	2	3
l. Lack of teacher planning time	1	2	3
m. Not enough time to teach social studies	1	2	3
n. Class sizes too large	1	2	3
o. Difficulty in maintaining discipline	1	2	3
p. Inadequate articulation of instruction across grade levels	1	2	3
q. Inadequate diversity of social studies electives	1	2	3
r. Low enrollments in social studies courses	1	2	3

This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-S-76010
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

STATE SUPERVISOR QUESTIONNAIRE

CONDUCTED BY--

RESEARCH TRIANGLE INSTITUTE
P.O. Box 12194
Research Triangle Park, N.C. 27709
Telephone No.: (919) 549-8311

Name: ______________________ State: ______

Title: ______________________

1. Approximately what percent of your time is spent in statewide supervision/coordination of mathematics? ________%

2. How much of the time that you spend in statewide mathematics supervision/coordination is spent on each of the following activities?

(Circle one on each line.)

	None	A Small Amount	A Moderate Amount	A Large Amount
a. Administrative duties such as scheduling, budgeting, filling out forms, ordering supplies, etc.	1	2	3	4
b. Planning and/or developing curricula	1	2	3	4
c. Locating and evaluating instructional materials	1	2	3	4
d. Evaluating district mathematics programs	1	2	3	4
e. Writing proposals	1	2	3	4
f. Providing/coordinating in-service programs	1	2	3	4
g. Working with state supervisors of other subject areas	1	2	3	4
h. Working with district supervisors and department heads	1	2	3	4
i. Working with college personnel	1	2	3	4
j. Attending professional meetings	1	2	3	4

3. What is your office's budget for the support of mathematics education in your state? (Include salaries) $__________

4a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes .... 1 *GO TO Q.4b*
No .... 2 *GO TO Q.5*

4b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. In-service Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

5. As a source of information about new developments in education, how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-Service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

6a. What amount of total mathematics instruction is a student in your state required to complete in grades 9-12 for high school graduation? (Please specify in years, semesters or quarters.) ________________

6b. Are there specific mathematics courses which are required?

(Circle one.)

Yes .... 1 Please specify:

Required Courses:

a. ______________________

b. ______________________

c. ______________________

No 2

7a. Does your state establish specific competencies in mathematics which students must attain prior to high school graduation?

(Circle one.)

Yes .... 1 *GO TO Q.8a*

No .... 2 *GO TO Q.7b*

7b. Does your state plan to implement a basic competency program in mathematics? If so, when?

(Circle one.)

Yes .... 1 Date: ______________

No 2

8a. Are guidelines set by the state to determine the minimum amount of time to be spent in elementary mathematics instruction?

(Circle one.)

Yes ....1 *GO TO Q.8b*
No .... 2 *GO TO Q.9a*

8b. For each grade level, indicate the recommended minimum amount of time to be spent on mathematics instruction <u>each week</u>. If there are no guidelines for a particular grade, write 0 for that grade.

MINUTES PER WEEK

K	1	2	3	4	5	6

9a. Please indicate the curriculum materials in the following list about which you have disseminated information to teachers and local supervisors in your state.

(Circle all that apply.)

a. Comprehensive School Mathematics Program--Elementary Component (CSMP) 1
b. Comprehensive School Mathematics Program--Elements of Mathematics (CSMP-EM) .. 2
c. Developing Mathematical Processes (DMP) 3

d. Educational Research Council Mathematics Program (formerly Greater Cleveland Mathematics Program) 4
e. Huntington II 5
f. Individually Prescribed Instruction (IPI) 6
g. Infinity Factory 7

h. Madison Mathematics Project (MAD-M) 8
i. MINNEMAST (Minnesota School Mathematics and Science Teaching (MINNEMAST) 9
j. Modern Coordinate Geometry 10
k. School Mathematics Study Group (SMSG) 11
l. Search for Understanding Computation (SUC) 12
m. Secondary School Mathematics Curriculum Improvement Study (SSMCIS) 13

n. Stretchers and Shrinkers/Motion Geometry (University of Illinois Committee on School Mathematics) 14
o. Technology-People-Environment (Engineering Concepts Curriculum Project-ECCP).. 15
p. The Man Made World (Engineering Concepts Curriculum Project-ECCP) 16
q. Unified Science and Mathematics for Elementary Schools (USMES) 17

9b. Specify the name of the <u>one</u> set of curriculum materials listed in question 9a that you have spent the most time and effort disseminating.

____

10. Please indicate all major sources from which you received information about the materials you specified in question 9b.

(Circle all that apply.)

a. Teachers 1
b. Principals 2
c. Local Subject Specialists/Coordinators 3
d. State Department Personnel 4

e. College Courses 5
f. Local In-Service Programs 6
g. Federally Sponsored Workshops 7

h. Teacher Union Meetings 8
i. Meetings of Professional Organizations 9
j. Journals and Other Professional Publications 10

k. Publishers and Sales Representatives 11
l. Project Authors 12
m. Involvement in Project Development 13

11. Please indicate whether you have performed each of the following tasks in disseminating those materials.

(Circle one on each line.)

	Yes	No
a. Conducted an in-service meeting or workshop about the materials?	1	2
b. Supplied sample materials for consideration?	1	2
c. Arranged for a consultant or sales person to meet with instructional staff to discuss the materials?	1	2
d. Sent a written description of the materials to instructional staff?	1	2
e. Discussed the materials with instructional staff?	1	2
f. Arranged for instructional staff to visit a school to see the materials in use?	1	2
g. Arranged for instructional staff to attend a presentation or institute to learn about the materials?	1	2
h. Helped instructional staff try the materials on a pilot basis?	1	2

12. Are there one or two journals or periodicals which you find particularly helpful to you in your work?

(Circle one.)

Yes .... 1 Please specify: a.________________________

b.________________________

No 2

13. The following factors may affect K-6 and/or 7-12 mathematics instruction in your state as a whole. Indicate if each factor is (1) a serious problem at K-6 only (2) a serious problem at 7-12 only, (3) a serious problem in both K-6 and 7-12, or (4) not a serious problem at either K-6 or 7-12.

(Circle one on each line.)

	Serious Problem K-6 Only	Serious Problem 7-12 Only	Serious Problem K-6 and 7-12	Not A Serious Problem
a. Belief that mathematics is less important than other subjects	1	2	3	4
b. Compliance with Federal regulations	1	2	3	4
c. Inadequate facilities	1	2	3	4
d. Insufficient funds for purchasing equipment and supplies	1	2	3	4
e. Lack of materials for individualizing instruction.	1	2	3	4
f. Out-of-date teaching materials	1	2	3	4
g. Insufficient numbers of textbooks	1	2	3	4
h. Lack of student interest in mathematics	1	2	3	4
i. Inadequate student reading abilities	1	2	3	4
j. Lack of teacher interest in mathematics	1	2	3	4
k. Teachers inadequately prepared to teach math	1	2	3	4
l. Lack of teacher planning time	1	2	3	4
m. Not enough time to teach mathematics	1	2	3	4
n. Class sizes too large	1	2	3	4
o. Difficulty in maintaining discipline	1	2	3	4
p. Inadequate articulation of instruction across grade levels	1	2	3	4
q. Inadequate diversity of mathematics electives	1	2	3	4
r. Low enrollments in mathematics courses	1	2	3	4
s. Other ____________	1	2	3	4
t. ____________	1	2	3	4
u. ____________	1	2	3	4

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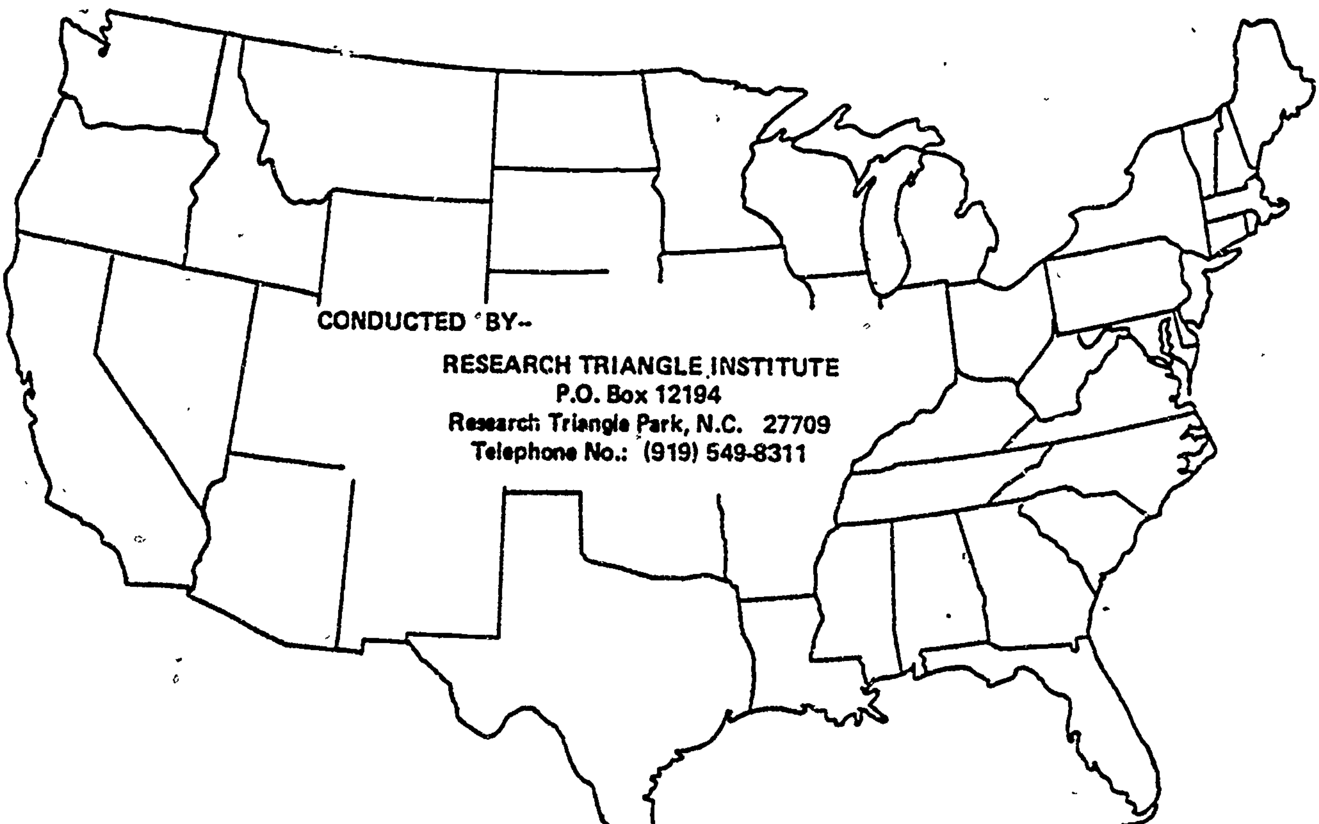
O.M.B. No. 099-S-76010
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

STATE SUPERVISOR QUESTIONNAIRE



CONDUCTED BY--

RESEARCH TRIANGLE INSTITUTE
P.O. Box 12194
Research Triangle Park, N.C. 27709
Telephone No.: (919) 549-8311

Name: ________________________ State: ______

Title: ________________________

1. Approximately what percent of your time is spent in statewide supervision/coordination of science? ________%

2. How much of the time that you spend in statewide science supervision/coordination is spent on each of the following activities?

(Circle one on each line.)

	None	A Small Amount	A Moderate Amount	A Large Amount
a. Administrative duties such as scheduling, budgeting, filling out forms, ordering supplies, etc.	1	2	3	4
b. Planning and/or developing curricula	1	2	3	4
c. Locating and evaluating instructional materials	1	2	3	4
d. Evaluating district science programs	1	2	3	4
e. Writing proposals	1	2	3	4
f. Providing/coordinating in-service programs	1	2	3	4
g. Working with state supervisors of other subject areas	1	2	3	4
h. Working with district supervisors and department heads	1	2	3	4
i. Working with college personnel	1	2	3	4
j. Attending professional meetings	1	2	3	4

3. What is your office's budget for the support of science education in your state? (Include salaries) $____________

4a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes .... 1 *GO TO Q.4b*
No .... 2 *GO TO Q.5*

4b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. In-service Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

5. As a source of information about new developments in education, how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-Service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

6a. What amount of total science instruction is a student in your state required to complete in grades 9-12 for high school graduation? (Please specify in years, semesters or quarters.) ____________

6b. Are there specific science courses which are required?

(Circle one.)

Yes .... 1 Please specify:

Required Courses:
a. ____________
b. ____________
c. ____________

No 2

7a. Does your state establish specific competencies in science which students must attain prior to high school graduation?

(Circle one.)

Yes .... 1 *GO TO Q.8a*
No .... 2 *GO TO Q.7b*

7b. Does your state plan to implement a basic competency program in science? If so, when?

(Circle one.)

Yes .... 1 Date: ____________
No 2

8a. Are guidelines set by the state to determine the minimum amount of time to be spent in elementary science instruction?

(Circle one.)

Yes .... 1 *GO TO Q.8b*
No .... 2 *GO TO Q.9a*

8b. For each grade level, indicate the recommended minimum amount of time to be spent on science instruction each week. If there are no guidelines for a particular grade, write 0 for that grade.

MINUTES PER WEEK

K	1	2	3	4	5	6

9a. Please indicate the curriculum materials in the following list about which you have disseminated information to teachers and local supervisors in your state.

(Circle all that apply.)

a. BSCS Elementary School Science Project 1
b. Conceptually Oriented Program in Elementary Science (COPES) 2
c. Elementary Science Study (ESS) 3
d. Individualized Science (IS) 4
e. MINNEMAST (Minnesota School Mathematics and Science Teaching Project) ... 5

f. Science — A Process Approach (SAPA) 6
g. Science Curriculum Improvement Study (SCIS) 7
h. Unified Science and Mathematics for Elementary Schools (USMES) 8
i. Biological Science: An Ecological Approach (BSCS-Green) 9
j. Biological Science: An Inquiry into Life (BSCS Yellow) 10

k. Biological Science: Molecules to Man (BSCS Blue) 11
l. Biological Science: Interaction of Experiments and Ideas 12
m. Biological Science: Me Now 13
n. Biological Science: Me and My Environment 14
o. Biological Science: Patterns and Processes 15

p. Biomedical Interdisciplinary Curriculum Project 16
q. Chemical Bond Approach (CBA) 17
r. Chemical Education Materials Study (CHEM Study) 18
s. Environmental Studies for Urban Youth (ESSENCE) 19
t. Human Sciences Program (BSCS) 20

u. Huntington II 21
v. Individualized Science Instructional Systems (ISIS) 22
w. Introductory Physical Science (IPS) 23
x. Investigating the Earth — Earth Science Curriculum Project (ESCP) 24
y. Outdoor Biology Instructional Strategies (OBIS) 25
z. Physical Science II (PSII) 26

aa. Physical Science Study Committee Physics (PSSC) 27
bb. Probing the Natural World — Intermediate Science Curriculum Study (ISCS) 28
cc. Project Physics Course (Harvard) 29
dd. Science Explorations for the Future 30

ee. Technology-People-Environment (Engineering Concepts Curriculum Project-ECCP) 31
ff. The Man Made World (Engineering Concepts Curriculum Project-ECCP) 32
gg. Time, Space, and Matter — Secondary School Science Project 33
hh. University of Illinois Astronomy Program 34

9b. Specify the name of the one set of curriculum materials listed in question 9a that you have spent the most time and effort disseminating.

____

10. Please indicate all <u>major</u> sources from which you received information about the materials you specified in question 9b.

(Circle all that apply.)

a. Teachers 1
b. Principals 2
c. Local Subject Specialists/Coordinators 3
d. State Department Personnel 4

e. College Courses 5
f. Local In-Service Programs 6
g. Federally Sponsored Workshops 7

h. Teacher Union Meetings 8
i. Meetings of Professional Organizations 9
j. Journals and Other Professional Publications 10

k. Publishers and Sales Representatives 11
l. Project Authors 12
m. Involvement in Project Development 13

11. Please indicate whether you have performed each of the following tasks in disseminating those materials.

(Circle one on each line.)

	Yes	No
a. Conducted an in-service meeting or workshop about the materials?	1	2
b. Supplied sample materials for consideration?	1	2
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d. Sent a written description of the materials to instructional staff?	1	2
e. Discussed the materials with instructional staff?	1	2
f. Arranged for instructional staff to visit a school to see the materials in use?	1	2
g. Arranged for instructional staff to attend a presentation or institute to learn about the materials?	1	2
h. Helped instructional staff try the materials on a pilot basis?	1	2

12. Are there one or two journals or periodicals which you find particularly helpful to you in your work?

(Circle one.)

Yes .... 1 Please specify: a.________________________

b.________________________

No 2

13. The following factors may affect K-6 and/or 7-12 science instruction in your state as a whole. Indicate if each factor is (1) a serious problem at K-6 only (2) a serious problem at 7-12 only, (3) a serious problem in both K-6 and 7-12, or (4) not a serious problem at either K-6 or 7-12.

(Circle one on each line.)

	Serious Problem K-6 Only	Serious Problem 7-12 Only	Serious Problem K-6 and 7-12	Not A Serious Problem
a. Belief that science is less important than other subjects	1	2	3	4
b. Compliance with Federal regulations	1	2	3	4
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d. Insufficient funds for purchasing equipment and supplies	1	2	3	4
e. Lack of materials for individualizing instruction	1	2	3	4
f. Out-of-date teaching materials	1	2	3	4
g. Insufficient numbers of textbooks	1	2	3	4
h. Lack of student interest in science	1	2	3	4
i. Inadequate student reading abilities	1	2	3	4
j. Lack of teacher interest in science	1	2	3	4
k. Teachers inadequately prepared to teach science	1	2	3	4
l. Lack of teacher planning time	1	2	3	4
m. Not enough time to teach science	1	2	3	4
n. Class sizes too large	1	2	3	4
o. Difficulty in maintaining discipline	1	2	3	4
p. Inadequate articulation of instruction across grade levels	1	2	3	4
q. Inadequate diversity of science electives	1	2	3	4
r. Low enrollments in science courses	1	2	3	4
s. Other ____________	1	2	3	4
t. ____________	1	2	3	4
u. ____________	1	2	3	4

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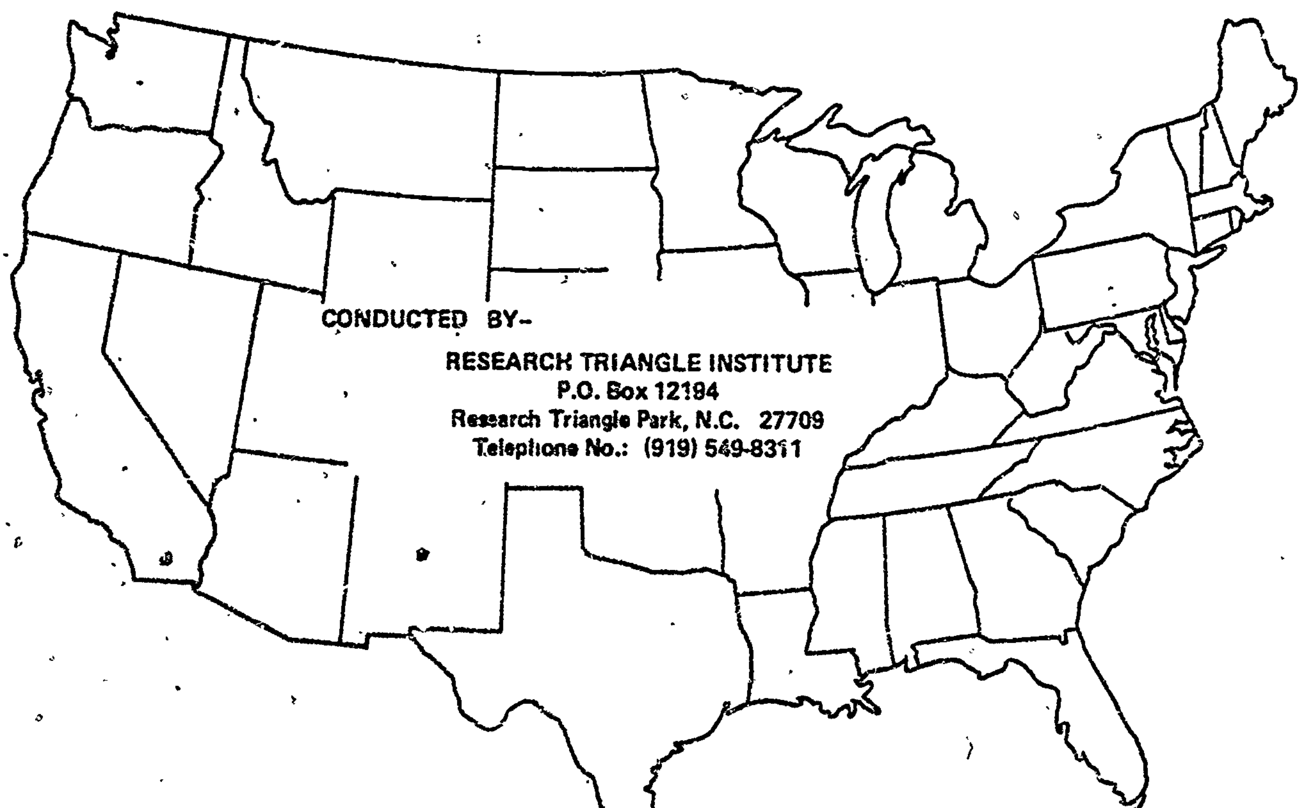
Approval Expires 12/31/77

NATIONAL SCIENCE FOUNDATION

Survey of Science, Mathematics and Social Studies Education

STATE SUPERVISOR QUESTIONNAIRE



CONDUCTED BY–

RESEARCH TRIANGLE INSTITUTE
P.O. Box 12194
Research Triangle Park, N.C. 27709
Telephone No.: (919) 549-8311

Name: ______________________________ State: ______

Title: ______________________________

1. Approximately what percent of your time is spent in statewide supervision/coordination of social studies? ________%

2. How much of the time that you spend in statewide social studies supervision/coordination is spent on each of the following activities?

(Circle one on each line.)

	None	A Small Amount	A Moderate Amount	A Large Amount
a. Administrative duties such as scheduling, budgeting, filling out forms, ordering supplies, etc.	1	2	3	4
b. Planning and/or developing curricula	1	2	3	4
c. Locating and evaluating instructional materials	1	2	3	4
d. Evaluating district social studies programs	1	2	3	4
e. Writing proposals	1	2	3	4
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g. Working with state supervisors of other subject areas	1	2	3	4
h. Working with district supervisors and department heads	1	2	3	4
i. Working with college personnel	1	2	3	4
j. Attending professional meetings	1	2	3	4

3. What is your office's budget for the support of social studies education in your state? (Include salaries) $__________

4a. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes .... 1 *GO TO Q.4b*
No .... 2 *GO TO Q.5*

4b. Please indicate which of the following NSF-sponsored activities you have attended.

(Circle all that apply.)

PRIOR TO 1974

a. Academic Year Institutes 1
b. Administrators Conferences 2
c. Cooperative College-School Science Programs 3
d. In-service Institutes 4
e. Resource Personnel Workshops 5
f. Summer Institutes 6

1974 TO THE PRESENT (Instructional Improvement Implementation)

g. Leadership Development Projects 7
h. School System Projects 8
i. Teacher Centered Projects 9

1976 TO THE PRESENT

j. Chautauqua Short Courses 10

5. As a source of information about new developments in education, how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-Service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3
h. Teacher Union Meetings	1	2	3
i. Meetings of Professional Organizations	1	2	3
j. Journals and Other Professional Publications	1	2	3
k. Publishers and Sales Representatives	1	2	3

6a. What amount of total social studies instruction is a student in your state required to complete in grades 9-12 for high school graduation? (Please specify in years, semesters or quarters.) __________

6b. Are there specific social studies courses which are required?

(Circle one.)

Yes .... 1 Please specify:

Required Courses:

a. __________

b. __________

c. __________

No 2

7a. Does your state establish specific competencies in social studies which students must attain prior to high school graduation?

(Circle one.)

Yes .... 1 *GO TO Q.8a*
No .... 2 *GO TO Q.7b*

7b. Does your state plan to implement a basic competency program in social studies? If so, when?

(Circle one.)

Yes .... 1 Date: __________
No 2

8a. Are guidelines set by the state to determine the minimum amount of time to be spent in elementary social studies instruction?

(Circle one.)

Yes .... 1 *GO TO Q.8b*
No .... 2 *GO TO Q.9a*

8b. For each grade level, indicate the recommended minimum amount of time to be spent on social studies instruction <u>each week</u>. If there are no guidelines for a particular grade, write 0 for that grade.

MINUTES PER WEEK

K	1	2	3	4	5	6

9a. Please indicate the curriculum materials in the following list about which you have disseminated information to teachers and local supervisors in your state.

(Circle all that apply.)

a. American Political Behavior 1
b. Biomedical Interdisciplinary Curriculum Project 2
c. Black in White America 3

d. Carnegie-Mellon Social Studies Curriculum Project (Holt Social Studies Curriculum) 4
e. Comparing Political Experiences 5
f. Concepts and Inquiry (Educational Research Council) 6
g. Economics in Society (ECON 12) 7

h. Elementary School Economics I, II (University of Chicago) 8
i. Elementary Social Science Education Program Laboratory Units (SRA) 9
j. Environmental Studies for Urban Youth (ESSENCE) 10
k. Exploring Childhood 11
l. Exploring Human Nature 12
m. Family of Man (Minnesota Project Social Studies) 13
n. Georgia Anthropology Curriculum Project 14

o. Georgraphy in an Urban Age--High School Geography Project 15
p. Human Behavior Curriculum Project 16
q. Human Sciences Program (BSCS) 17
r. Huntington II 18
s. Man: A Course of Study (MACOS) 19
t. Materials and Activities for Teachers and Children (MATCH) 20
u. Our Working World 21
v. Patterns in Human History--Anthropology Curriculum Study Project 22
w. People and Technology 23
x. Project Africa 24

y. Social Studies Dynamics Program 25
z. Sociological Resources for the Social Studies (Episodes in Social Inquiry, Series, Inquiries in Sociology, Readings in Sociology) 26
aa. Taba Program in Social Science 27

9b. Specify the name of the <u>one</u> set of curriculum materials listed in question 9a that you have spent the most time and effort disseminating.

____

10. Please indicate all major sources from which you received information about the materials you specified in question 9b.

(Circle all that apply.)

a. Teachers 1
b. Principals 2
c. Local Subject Specialists/Coordinators 3
d. State Department Personnel 4

e. College Courses 5
f. Local In-Service Programs 6
g. Federally Sponsored Workshops 7

h. Teacher Union Meetings 8
i. Meetings of Professional Organizations 9
j. Journals and Other Professional Publications 10

k. Publishers and Sales Representatives 11
l. Project Authors 12
m. Involvement in Project Development 13

11. Please indicate whether you have performed each of the following tasks in disseminating those materials.

(Circle one on each line.)

	Yes	No
a. Conducted an in-service meeting or workshop about the materials?	1 ...	2
b. Supplied sample materials for consideration?	1 ...	2
c. Arranged for a consultant or sales person to meet with instructional staff to discuss the materials?	1 ...	2
d. Sent a written description of the materials to instructional staff?	1 ...	2
e. Discussed the materials with instructional staff?	1 ...	2
f. Arranged for instructional staff to visit a school to see the materials in use?	1 ...	2
g. Arranged for instructional staff to attend a presentation or institute to learn about the materials?	1 ...	2
h. Helped instructional staff try the materials on a pilot basis?	1 ...	2

12. Are there one or two journals or periodicals which you find particularly helpful to you in your work?

(Circle one.)

Yes .... 1 Please specify: a.________________________

b.________________________

No 2

13. The following factors may affect K-6 and/or 7-12 social studies instruction in your state as a whole. Indicate if each factor is (1) a serious problem at K-6 only (2) a serious problem at 7-12 only, (3) a serious problem in both K-6 and 7-12, or (4) not a serious problem at either K-6 or 7-12.

(Circle one on each line.)

	Serious Problem K-6 Only	Serious Problem 7-12 Only	Serious Problem K-6 and 7-12	Not A Serious Problem
a. Belief that social studies is less important than other subjects	1	2	3	4
b. Compliance with Federal regulations	1	2	3	4
c. Inadequate facilities	1	2	3	4
d. Insufficient funds for purchasing equipment and supplies	1	2	3	4
e. Lack of materials for individualizing instruction.	1	2	3	4
f. Out-of-date teaching materials	1	2	3	4
g. Insufficient numbers of textbooks	1	2	3	4
h. Lack of student interest in social studies	1	2	3	4
i. Inadequate student reading abilities	1	2	3	4
j. Lack of teacher interest in social studies	1	2	3	4
k. Teachers inadequately prepared to teach social studies	1	2	3	4
l. Lack of teacher planning time	1	2	3	4
m. Not enough time to teach social studies	1	2	3	4
n. Class sizes too large	1	2	3	4
o. Difficulty in maintaining discipline	1	2	3	4
p. Inadequate articulation of instruction across grade levels	1	2	3	4
q. Inadequate diversity of social studies electives	1	2	3	4
r. Low enrollments in social studies courses	1	2	3	4
s. Other ______________________	1	2	3	4
t. ______________________	1	2	3	4
u. ______________________	1	2	3	4

APPENDIX E

Lists of Textbooks and Curriculum Materials

LIST OF MATHEMATICS TEXTBOOKS/PROGRAMS

(To be used for questions 24a and 24b)

The following is a list of frequently used mathematics textbooks and programs. The list is arranged alphabetically by publisher and if there is more than one author, only the first author is shown.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
701	Madison Project Materials (MAD-M) (Davis)	Addison-Wesley Publishing Co., Inc.
702	Elementary School Mathematics (Eicholz)	Addison-Wesley Publishing Co., Inc.
703	Investigating School Mathematics (Eicholz)	Addison-Wesley Publishing Co., Inc.
704	School Mathematics (Eicholz)	Addison-Wesley Publishing Co., Inc.
705	Mathematics Target System (Kane)	American Book Co.
706	Michigan Arithmetic Program Series	Ann Arbor Publishing Co.
707	System 80 Programs (May)	Borg Warner Educational Systems
708	Cambridge Mathematics Program Series	Cambridge Book Co., Inc.
709	Basic Foundation Units in Arithmetic (Schlegel)	Continental Press
710	Continental Complete Arithmetic Series (Schlegel)	Continental Press
711	Individually Prescribed Instruction (IPI)	Croft Publications
712	Modern Mathematics Made Meaningful (Kunz)	Cuisenaire Company of America, Inc.
713	CDA Math (Wirtz)	Curriculum Development Associates
714	Arithmetic	Dell Publishing Co., Inc.
715	Learning Numbers is Fun (Beard)	Doubleday Publishing Co.
716	Teach Me Numbers (Winters)	Doubleday Publishing Co.
717	Essential Modern Mathematics (Glennon)	Ginn & Co.
718	Ginn Mathematics: An Applied Approach (Immerzeel)	Ginn & Co.
719	Individualized Mathematics System (IMS)	Ginn & Co.
720	Elementary Mathematics Series (Payne)	Harcourt Brace Jovanovich, Inc.
721	Basic Arithmetic	Harlow Publishing Co.
722	Heath Elementary Mathematics Program (Dilley)	D. C. Heath & Co.
723	Hoffman Information Systems: Math Achievement (Nikolai)	Hoffman Information Systems
724	Exploring Elementary Mathematics (Keedy)	Holt, Rinehart & Winston, Inc.
725	Holt School Mathematics (Nichols)	Holt, Rinehart & Winston, Inc.
726	Mathematics for Individual Achievement (Denholm)	Houghton Mifflin Co.
727	Modern School Mathematics: Structure and Use (Duncan)	Houghton Mifflin Co.
728	Structural Arithmetic (Stern)	Houghton Mifflin Co.
729	Arithmetic Readiness Series (Lennes)	Laidlaw Brothers
730	Laidlaw Mathematics Series (McSwain)	Laidlaw Brothers

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
731	The Understanding Mathematics Program (Gundlach)	Laidlaw Brothers
732	Basic Skills in Math Series (Clark)	Laurel Publishing Co.
733	Developing Mathematics: Macmillan School Mathematics (Phillips)	Macmillan Publishing Co., Inc.
734	Programmed Math (Sullivan Associates)	McGraw-Hill Book Co./Webster Division
735	Mastering Arithmetic Facts (Marriott)	Charles E. Merrill Publishing Co.
736	Field Mathematics Program Series (Rucker)	Prentice-Hall, Inc.
737	Numbers for You and Me (Dawson)	Prentice-Hall, Inc.
738	Developing Mathematical Processes (Moser)	Rand McNally & Co.
739	Schoolmath (Kramer)	Rand McNally & Co.
740	The Random House Mathematics Program (Suppes)	Random House, Inc.
741	Distar Arithmetic (Engelmann)	Science Research Associates, Inc.
742	SRA Mathematics Learning System (DeVault)	Science Research Associates, Inc.
743	Mathematics Around Us: Skills and Applications (Bolster)	Scott, Foresman & Co.
744	Seeing Through Arithmetic Program (Hartung)	Scott, Foresman & Co.
745	Modern Mathematics Through Discovery (Morton)	Silver Burdett Co.
746	Silver Burdett Mathematics System (LeBlanc)	Silver Burdett Co.
747	Nuffield Mathematics Project Series	John Wiley & Sons, Inc.
748	Developing Pre-Number Ideas (Lucas)	Winston Press, Inc.

LIST OF SCIENCE TEXTBOOKS/PROGRAMS

(To be used for questions 25a and 25b)

The following is a list of frequently used science textbooks and programs. The list is arranged alphabetically by publisher and if there is more than one author, only the first author is shown.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
301	Essence I	Addison-Wesley Publishing Co., Inc.
302	Essence II	Addison-Wesley Publishing Co., Inc.
303	STEM: Elementary School Science (Rockcastle)	Addison-Wesley Publishing Co., Inc.
304	Investigating In Science (Jacobson)	American Book Co.
305	Exploring and Understanding Series (Braker)	Benefic Press
306	Process-Concept Science Series	Benefic Press
307	World of Science (Novak)	Bobbs-Merrill Co.
308	Minnemast Units	Edutech Products, Inc.
309	Science for Human Value (MacCracken)	Follett Publishing Co.
310	Ginn Science Program (Atkin)	Ginn & Co.
311	Science: A Process Approach (SAPA)	Ginn & Co.
312	Science: A Process Approach (SAPA II)	Ginn & Co.
313	Concepts in Science (Brandwein)	Harcourt Brace Jovanovich, Inc.
314	University of Illinois Astronomy Program (Atkin)	Harper & Row Publishers, Inc.
315	Today's Basic Science Series (Navarra)	Harper & Row Publishers, Inc.
316	Young Scientist Series (Navarra)	Harper & Row Publishers, Inc.
317	Heath Science Series (Schneider)	D. C. Heath & Co.
318	Modern Elementary Science (Fischler)	Holt, Rinehart, & Winston, Inc.
319	Measurement, Concepts and Applications (Gardner)	Houghton Mifflin Co.
320	Modular Activities Program in Science (Berger)	Houghton Mifflin Co.
321	Individualized Science (IS)	Imperial Learning
322	New Laidlaw Science Program (Smith)	Laidlaw Brothers
323	Science, Environment, and Man (Sullivan)	Leswing Press
324	BSCS/Lippincott Elementary School Sciences Program	J. B. Lippincott Co.
325	Nuffield Science Program	MacDonald Education
326	Macmillan Science Series (Barnard)	Macmillan Publishing Co., Inc.
327	Science for Tomorrow's World (Barnard)	Macmillan Publishing Co., Inc.
328	My World of Science Series (Obourn)	McCormick-Mathers Publishing Co.
329	Elementary Science Study Program (ESS)	McGraw-Hill Book Co.
330	Science: People, Concepts, Processes (Holmes)	McGraw-Hill Book Co.
331	Discovering Science Series (Piltz)	Charles E. Merrill Publishing Co.
332	Elementary Science: Learning by Investigating (ESLI)	Rand McNally & Co.
333	Science Curriculum Improvement Study (SCIS): Life Science	Rand McNally & Co.
334	Science Curriculum Improvement Study (SCIS): Physical Science	Rand McNally & Co.
335	Science: Understanding Your Environment (Mallinson)	Silver Burdett Co.
336	Steck-Vaughn Elementary Science Series (Ware)	Steck-Vaughn Co.

LIST OF SOCIAL STUDIES TEXTBOOKS/PROGRAMS

(To be used for questions 23a and 23b)

The following is a list of frequently used social studies textbooks and programs. The list is arranged alphabetically by publisher and if there is more than one author, only the first author is shown.

CODE NUMBER	TEXT/PROGRAM	PUBLISHER
801	Essence I	Addison-Wesley Publishing Co.
802	Essence II	Addison-Wesley Publishing Co.
803	Field Social Studies Program (Gross)	Addison-Wesley Publishing Co.
804	People: Cultures, Times, Places	Addison-Wesley Publishing Co.
805	The Taba Program in Social Science	Addison-Wesley Publishing Co.
806	Elementary School Economics I	Allied Education Council
807	Elementary School Economics II	Allied Education Council
808	Concepts & Inquiry Series	Allyn & Bacon, Inc.
809	Exploring the Social Sciences Series (Davis)	American Book Co.
810	Basic Understanding Series	Benefic Press
811	Experiential Development Program (Munsen)	Benefic Press
812	Man: A Course of Study (MACOS) (Dow)	Curriculum Development Associates, Inc.
813	Man and Communities Series	Fideler Publishing Co.
814	Exploring Series	Follett Publishing Co.
815	World of Mankind Series (Quigley)	Follett Publishing Co.
816	Ginn Social Science Series (Kenworthy)	Ginn & Co.
817	Tiegs-Adams Series	Ginn & Co.
818	Men and Nations: A World History (Mazour)	Harcourt Brace Jovanovich, Inc.
819	Social Sciences: Concepts and Values (Brandwein)	Harcourt Brace Jovanovich, Inc.
820	Our Family of Man (Moss)	Harper & Row Publishers, Inc.
821	Heath Social Studies Series (Preston)	D. C. Heath & Co.
822	Holt Databank System for Elementary Social Studies (Fielder)	Holt, Rinehart & Winston, Inc.
823	Laidlaw Social Science Program (King)	Laidlaw Brothers
824	Macmillan Social Studies Series (Cutright)	Macmillan Publishing Co., Inc.
825	Social Studies: Focus on Active Learning	Macmillan Publishing Co., Inc.
826	Social Learning Curriculum (Goldstein)	Charles E. Merrill Publishing Co.
827	Man and His World Series	Noble & Noble Publishers, Inc.
828	Dimensions of Personality	Pflaum/Standard
829	Man in Action Series (Presno)	Prentice-Hall, Inc.
830	People-Choices-Decisions	Random House-Singer/School Division
831	Our Working World (Senesh)	Science Research Associates
832	Social Science Laboratory Units (Lippitt)	Science Research Associates
833	Investigating Man's World Program	Scott, Foresman & Co.
834	Contemporary Social Science Curriculum (Anderson)	Silver Burdett Co.
835	Silver Burdett Social Science (Anderson)	Silver Burdett Co.

LIST OF MATHEMATICS TEXTBOOKS/PROGRAMS

(To be used for questions 24a and 24b)

The following is a list of frequently used mathematics textbooks and programs. The list is arranged alphabetically by publisher within each area of mathematics. If there is more than one author, only the first author is shown.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	BUSINESS AND CONSUMER MATHEMATICS	
401	Business and Consumer Mathematics (Saake)	Addison-Wesley Publishing Co., Inc.
402	Consumer Mathematics (Lankford)	Harcourt Brace Jovanovich, Inc.
403	Career Mathematics: Industry and the Trades (Lyng)	Houghton Mifflin Co.
404	Math for Daily Living (Lewis)	McCormick-Mathers Publishing Co.
405	Business and Consumer Arithmetic (Olson)	Prentice-Hall, Inc.
406	Applied Business Mathematics (Piper)	South-Western Publishing Co.
407	Mathematics for the Consumer (Fairbank)	South-Western Publishing Co.
	ALGEBRA AND TRIGONOMETRY	
408	Algebra I (Johnson)	Addison-Wesley Publishing, Co., Inc.
409	Algebra with Trigonometry (Johnson)	Addison-Wesley Publishing, Co., Inc.
410	Advanced Algebra (White)	Allyn & Bacon, Inc.
411	Fundamentals of Algebra (White)	Allyn & Bacon, Inc.
412	Algebra in Easy Steps (Stern)	American Book Co.
413	Algebra (Welchons)	Ginn & Co
414	Discovering Algebra	Harcourt Brace Jovanovich, Inc.
415	Introduction to Algebra (UICSM)	D. C. Heath & Co.
416	Holt Algebra I (Nichols)	Holt, Rinehart & Winston, Inc.
417	Holt Algebra II with Trigonometry (Nichols)	Holt, Rinehart & Winston, Inc.
418	Elementary Algebra (Denholm)	Houghton Mifflin Co.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	ALGEBRA AND TRIGONOMETRY (cont'd)	
419	Modern Algebra and Trigonometry: Structure and Method (Dolciani)	Houghton Mifflin Co.
420	Modern Algebra: Structure and Method (Dolciani)	Houghton Mifflin Co.
421	Modern School Mathematics: Pre-Algebra (Dolciani)	Houghton Mifflin Co.
422	Modern Trigonometry (Wooton)	Houghton Mifflin Co.
423	Preparing to Use Algebra (Shulte)	Laidlaw Brothers
424	Using Advanced Algebra (Dalton)	Laidlaw Brothers
425	Using Algebra (Travers)	Laidlaw Brothers
426	Plane Trigonometry With Tables (Heineman)	McGraw-Hill Book Co.
427	Modern Mathematics (Skeen)	Random House
428	Elementary Algebra (Devlin)	Scott, Foresman & Co.
429	Algebra One (Vogeli)	Silver Burdett Co.
430	Algebra Two and Trigonometry (Vogeli)	Silver Burdett Co.
	GEOMETRY	
431	Analytic Geometry (Fuller)	Addison-Wesley Publishing Co., Inc.
432	Geometry (Moise)	Addison-Wesley Publishing Co., Inc.
433	Geometry (Jacobs)	W. H. Freeman Publishing Co.
434	Holt Geometry (Nichols)	Holt, Rinehart & Winston, Inc.
435	Geometry (Jurgensen)	Houghton Mifflin Co.
436	Modern Coordinate Geometry (Rosenbaum)	Houghton Mifflin Co.
437	Modern Geometry: Structure and Method (Jurgensen)	Houghton Mifflin Co.
438	Modern School Mathematics: Geometry (Jurgensen)	Houghton Mifflin Co.
439	School Mathematics Geometry (Anderson)	Houghton Mifflin Co.
440	Geometry: A Transformation Approach (Coxford)	Laidlaw Brothers
	ADVANCED MATHEMATICS	
441	Calculus and Analytic Geometry (Thomas)	Addison-Wesley Publishing Co., Inc.
442	Advanced Mathematic Series	Cuisenaire Co. of America, Inc.
443	Calculus with Analytic Geometry (Clarke)	D. C. Heath & Co.
444	Elementary Mathematical Analysis (Herberg)	D. C. Heath & Co.
445	Modern Introductory Analysis (Dolciani)	Houghton Mifflin Co.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	OTHER AREAS OF MATHEMATICS	
446	Discovery in Mathematics (MAD-M)	Addison-Wesley Publishing Co., Inc.
447	Exploration in Mathematics (MAD-M)	Addison-Wesley Publishing Co., Inc.
448	Individualizing Mathematics (Foley)	Addison-Wesley Publishing Co., Inc.
449	Investigating School Mathemtatics (Eicholz)	Addison-Wesley Publishing Co., Inc.
450	School Mathematics (Eicholz)	Addison-Wesley Publishing Co., Inc.
451	Success with Mathematics (Fleenor)	Addison-Wesley Publishing Co., Inc.
452	Unified Mathematics Series (SSMCIS) (Fehr)	Addison-Wesley Publishing Co., Inc.
453	Fundamentals of Mathematics (Stein)	Allyn & Bacon, Inc.
454	Refresher Mathematics (Stein)	Allyn & Bacon, Inc.
455	Mathematics Target System (Kane)	American Book Co.
456	Basic Mathematics Series	Cuisenaire Co. of America, Inc.
457	Modern Mathematics Made Meaningful (Kunz)	Cuisenaire Co. of America, Inc.
458	School Math Project (SMP)	Cuisenaire Co. of America, Inc.
459	Essentials of Mathematics (Sobel)	Ginn & Co.
460	Ginn Mathematics: An Applied Approach (Immerzeel)	Ginn & Co.
461	Globe Mathematics Program (Peters)	Globe Book Co., Inc.
462	Harbrace Mathematics (Payne)	Harcourt Brace Jovanovich, Inc.
463	Key Ideas In Mathematics (Gerardi)	Harcourt Brace Jovanovich, Inc.
464	Harper & Row School Mathematics (Pettofrezzo)	Harper & Row Publishing, Co.
465	U.I.C.S.M. Mathematics Program (Braunfeld)	Harper & Row Publishing, Co.
466	Heath Mathematics: Secondary Level (Rising)	D. C. Heath & Co.
467	High School Mathematics (UICSM)	D. C. Heath & Co.
468	Mathematics: Modern Concepts and Skills (Dilley)	D. C. Heath & Co.
469	Hoffman Information Systems: Math Achievement (Nikolai)	Hoffman Information System
470	Exploring Modern Mathematics (Keedy)	Holt, Rinehart & Winston, Inc.
471	Holt School Mathematics (Nichols)	Holt, Rinehart & Winston, Inc.
472	Trouble Shooting Mathematics Skills (Bernstein)	Holt, Rinehart & Winston, Inc.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	OTHER AREAS OF MATHEMATICS	
473	Mathematics for Achievement Series (Herrick)	Houghton Mifflin Co.
474	Mathematics for Individual Achievement (Denholm)	Houghton Mifflin Co.
475	Modern School Mathematics: Structure and Method (Dolciani)	Houghton Mifflin Co.
476	Modern School Mathematics: Structure and Use (Duncan)	Houghton Mifflin Co.
477	Laidlaw Mathematics Series (McSwain)	Laidlaw Brothers
478	The Understanding Mathematics Program (Gundlach)	Laidlaw Brothers
479	Macmillan School Mathematics Program (Phillips)	Macmillan Publishing Co., Inc.
480	Programmed Mathematics (Sullivan Associates)	McGraw-Hill Book Co. (Webster Division)
481	Discoveries in Modern Mathematics (Smith)	Charles E. Merrill Publishing Co.
482	Field Mathematic Program Series (Rucker)	Prentice-Hall, Inc.
483	School-Math (Kramer)	Rand McNally & Co.
484	SRA Mathematics Learning System (DeVault)	Science Research Assoc., Inc.
485	Activities in Mathematics Program (Johnson)	Scott, Foresman & Co.
486	Mathematics Around Us: Skills and Applications (Bolster)	Scott, Foresman & Co.
487	Modern Mathematics Through Discovery (Morton)	Silver Burdett Co.
488	Silver Burdett Mathematics (LeBlanc)	Silver Burdett Co.
489	Unified Modern Mathematics (SSMCIS)	Teachers College Press

LIST OF SCIENCE TEXTBOOKS/PROGRAMS

(To be used for questions 24a and 24b)

The following is a list of frequently used science textbooks and programs. The list is arranged alphabetically by publisher within each area of science. If there is more than one author, only the first author is shown.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	BIOLOGY	
101	Biology: Introduction to Life (Nason)	Addison-Wesley Publishing Co., Inc.
102	Biology (Kimball)	Addison-Wesley Publishing Co., Inc.
103	Action Biology (Weinberg)	Allyn & Bacon, Inc.
104	Biology: An Inquiry into the Nature of Life (Weinberg)	Allyn & Bacon, Inc.
105	Inquiry into Biological Science (Jacobson)	American Book Co.
106	Patterns of Life (Schwartz)	American Book Co.
107	Fundamental Concepts of Modern Biology (Haskel)	AMSCO School Publications, Inc.
108	Concepts in Modern Biology (Kraus)	Cambridge Book Co., Inc.
109	Unified Biology (Brucia)	CEBCO/Standard Publishing
110	Concepts and Inquiries in Biology	Educational Methods, Inc.
111	EMI Programmed Biology Series	Educational Methods, Inc.
112	Biological Science (Gregory)	Ginn & Co.
113	Pathways in Biology (Oxenhorn)	Globe Book Co., Inc.
114	Biological Science: An Inquiry into Life (BSCS Yellow) (Moore)	Harcourt Brace Jovanovich, Inc.
115	Biology: Patterns in the Environment	Harcourt Brace Jovanovich, Inc.
116	Biology (Kroeber)	D. C. Heath & Co.
117	Biology: You and Your Environment (Cunningham)	D. C. Heath & Co.
118	BSCS Laboratory Blocks	D. C. Heath & Co.
119	Biological Science: Invitations to Discovery (BSCS)	Holt, Rinehart & Winston, Inc.
120	Biological Science: Patterns and Processes (BSCS)	Holt, Rinehart & Winston, Inc.
121	Modern Biology (Otto)	Holt, Rinehart & Winston, Inc.
122	Biological Science: Molecules to Man (BSCS Blue)	Houghton Mifflin Co.
123	Elements of Biology (Weisz)	McGraw-Hill Book Co.
124	Science of Biology (Weisz)	McGraw-Hill Book Co.
125	Biology: Living Systems (Oram)	Charles E. Merrill Publishing Co.
126	Biological Science: Interaction of Experiments and Ideas (BSCS)	Prentice-Hall, Inc.
127	Biology and Human Progress (Eisman)	Prentice-Hall, Inc.
128	Ideas and Investigations in Science: Biology (Wong)	Prentice-Hall, Inc.
129	Biological Science: An Ecological Approach (BSCS Green)	Rand McNally & Co.
130	Biology: A Functional Approach (Roberts)	Ronald Press Co.
131	Biology (Villee)	W. B. Saunders Co.
132	Biology (Smallwood)	Silver Burdett Co.
133	Biology: A Search for Order in Complexity (Moore)	Zonderyan Publishing House

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	CHEMISTRY	
134	Chemical Principles (Dickerson)	Addison-Wesley Publishing Co., Inc.
135	Chemistry: A Programmed, Multi-Level, Individualized Study Course (Bibeau)	Addison-Wesley Publishing Co., Inc.
136	Keys to Chemistry (Ledbetter)	Addison-Wesley Publishing Co., Inc.
137	Inquiries in Chemistry (Turner)	Allyn & Bacon, Inc.
138	Chemistry: Patterns and Properties (Bickel)	American Book Co.
139	Concepts in Modern Chemistry (Kavanah)	Cambridge Book Co., Inc.
140	Chemistry: An Experimental Science (Pimentel)	W. H. Freeman & Co.
141	Pathways in Science: Chemistry (Oxenhorn)	Globe Book Co., Inc.
142	Concepts in Chemistry (Greenstone)	Harcourt Brace Jovanovich, Inc.
143	Interdisciplinary Approaches to Chemistry (IAC)	Harper & Row Publishers, Inc.
144	Chemistry: Experiments and Principles (CHEM Study) (O'Connor)	D. C. Heath & Co.
145	Action Chemistry (Bolton)	Holt, Rinehart & Winston, Inc.
146	Foundations of Chemistry (Toon)	Holt, Rinehart & Winston, Inc.
147	Modern Chemistry (Metcalfe)	Holt, Rinehart & Winston, Inc.
148	Chemistry: An Investigative Approach (Cotton)	Houghton Mifflin Co.
149	Challenges to Science Series: Chemistry: A Humanistic Approach (Vallarino)	McGraw-Hill Book Co.
150	Chemistry (Quagliano)	McGraw-Hill Book Co.
151	Chemistry (Sienko)	McGraw-Hill Book Co.
152	Chemistry: A Modern Course (Smoot)	Charles E. Merrill Publishing Co.
153	Chemistry: Experimental Foundations (Parry)	Prentice-Hall, Inc.
154	General Chemistry (Day)	Prentice-Hall, Inc.
155	Chemistry (Choppin)	Silver Burdett Co.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	PHYSICS	
156	College Physics (Sears)	Addison-Wesley Publishing Co., Inc.
157	Physics: Concepts and Models (Wenham)	Addison-Wesley Publishing Co., Inc.
158	World of Physics (Hulzer)	Addison-Wesley Publishing Co., Inc.
159	Elements of Physics (Boglan)	Allyn & Bacon, Inc.
160	Physics: Its Methods and Meanings (Taffel)	Allyn & Bacon, Inc.
161	Physics: A Basic Science (Verwiebe)	American Book Co.
162	Pathways in Science: Physics (Oxenhorn)	Globe Book Co., Inc.
163	Concepts in Physics (Miller)	Harcourt Brace Jovanovich, Inc.
164	PSSC Physics (Haber-Schaim)	D. C. Heath & Co.
165	Modern Physics (Williams)	Holt, Rinehart & Winston, Inc.
166	The Project Physics (Rutherford)	Holt, Rinehart & Winston, Inc.
167	Physics: Fundamentals and Frontiers (Stollberg)	Houghton Mifflin Co.
168	Elements of Physics (Smith)	McGraw-Hill Book Co.
169	Physics-Principles and Insights (Freeman)	McGraw-Hill Book Co.
170	The Man Made World (ECCP)	McGraw-Hill Book Co.
171	Physics: Principles and Problems (Murphy)	Miller Books
172	Investigations in Physics (Renner)	Rand McNally & Co.
173	Elements of Modern Physics (Goble)	Ronald Press Co.
174	Physics (Genzer)	Silver Burdett Co.
175	Physics, An Environmental Science (White)	Von-Nostrand

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	EARTH SCIENCE	
176	Earth Science: A Laboratory Approach (Marean)	Addison-Wesley Publishing Co., Inc.
177	Exploring Earth Science (Thurber)	Allyn & Bacon, Inc.
178	Earth Science: The World We Live In (Namowitz)	American Book Co.
179	Inquiry into Earth and Space Science (Jacobson)	American Book Co.
180	Pathways in Science: Earth Science (Oxenhorn)	Globe Book Co., Inc.
181	Our Environment in Space: The Earth Sciences (Navarra)	Harper & Row Publishers, Inc.
182	Our Planet in Space: The Earth Sciences (Navarra)	Harper & Row Publishers, Inc.
183	Earth and Space Science (Wolfe)	D. C. Heath Co.
184	Modern Earth Science (Ramsey)	Holt, Rinehart & Winston, Inc.
185	ESCP Pamphlet Series (Boyer)	Houghton Mifflin Co.
186	Investigating the Earth (ESCP)	Houghton Mifflin Co.
187	Spaceship Earth: Earth Science (Jackson)	Houghton Mifflin Co.
188	The Earth-Space Science (Hibbs)	Laidlaw Brothers
189	Earth Science: A Search for Understanding (Brown)	J. B. Lippincott Co.
190	Challenges to Science Series: Earth Science (Heller)	McGraw-Hill Book Co.
191	Time, Space, and Matter (TSM)	McGraw-Hill Book Co.
192	Focus on Earth Science (Bishop)	Charles E. Merrill Publishing Co.
193	Earth Science: Patterns in Our Environment (Bisque)	Prentice-Hall, Inc.
194	Interaction of Earth and Time: Inquiry in Earth Science (Abraham)	Rand McNally & Co.
195	Earth Science (Brown)	Silver Burdett Co.
	LIFE SCIENCE	
196	Life Science: A Laboratory Approach (Marean)	Addison-Wesley Publishing Co., Inc.
197	Exploring Life Science (Thurber)	Allyn & Bacon, Inc.
198	Life Science: A Modern Course (Mason)	American Book Co.
199	Life Science: A Problem Solving Approach (Carter)	Ginn & Co.
200	The World of Life (Branley)	Ginn & Co.
201	Life: Its Forms and Changes	Harcourt Brace Jovanovich, Inc.
202	Life and the Molecule: The Biological Sciences (Navarra)	Harper & Row Publishers, Inc.
203	Life in the Environment: The Biological Sciences (Navarra)	Harper & Row Publishers, Inc.
204	Spaceship Earth: Life Science (Stone)	Houghton Mifflin Co.
205	Life Science: A Search for Understanding (Brown)	J. B. Lippincott Co.
206	Challenges to Science Series: Life Science (Smallwood)	McGraw-Hill Book Co.
207	Focus on Life Science (Heimler)	Charles E. Merrill Publishing Co.
208	Ideas and Investigations in Science: Life Science (Wong)	Prentice-Hall, Inc.
209	Interaction of Man and the Biosphere: Inquiry in Life Science (Abraham)	Rand McNally & Co.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	PHYSICAL SCIENCE	
210	Physical Science: A Laboratory Approach (Marean)	Addison-Wesley Publishing Co., Inc.
211	Exploring Physical Science (Thurber)	Allyn & Bacon, Inc.
212	Inquiry into Physical Science (Jacobson)	American Book Co.
213	Physical Science: A Problem Solving Approach (Carter)	Ginn & Co.
214	The Physical World (Branley)	Ginn & Co.
215	Energy and the Atom: The Physical Sciences (Navarra)	Harper & Row Publishers, Inc.
216	Our Physical Environment: The Physical Sciences (Navarra)	Harper & Row Publishers, Inc.
217	Modern Physical Science (Tracy)	Holt, Rinehart & Winston, Inc.
218	Spaceship Earth: Physical Science (Hill)	Houghton Mifflin Co.
219	The Physical Sciences (Fisk)	Laidlaw Brothers
220	Physical Science: A Search for Understanding (Brown)	J. B. Lippincott Co.
221	Challenges to Science Series: Physical Science (Williams)	McGraw-Hill Book Co.
222	Focus on Physical Science (Heimler)	Charles E. Merrill Publishing Co.
223	Ideas and Investigations in Science--Physical Science (Dolmatz)	Prentice-Hall, Inc.
224	Introductory Physical Science (IPS) (Haber-Schaim)	Prentice-Hall, Inc.
225	Physical Science II (PSII) (Haber-Schaim)	Prentice-Hall, Inc.
226	Physical Science for Progress (Pella)	Prentice-Hall, Inc.
227	Interaction of Matter and Energy: Inquiry in Physical Science (Abraham)	Rand McNally & Co.
	OTHER SCIENCE	
228	Thinking Ahead in Science	American Book Co.
229	Science for a Changing World (Munch)	Benefic Press
230	Concepts and Challenges in Science Series (Winkler)	CEBCO/Standard Publishing
231	Individualized Science Instructional System (Burkman)	Ginn & Co.
232	University of Illinois Astronomy Program (Atkin)	Harper & Row Publishers, Inc.
233	Patterns and Processes of Science (Brock)	D. C. Heath & Co.
234	Modern Science Series (Blanc)	Holt, Rinehart & Winston, Inc.
235	Science for Space Age (Smith)	J. B. Lippincott Co.
236	Principles of Science Series (Heimler)	Charles E. Merrill Publishing Co.
237	Matter, Energy and Change (Townsend)	Scott Foresman & Co.
238	Intermediate Science Curriculum Study: Probing the Natural World	Silver Burdett Co.

LIST OF SOCIAL STUDIES TEXTBOOKS/PROGRAMS

(To be used for questions 23a and 23b)

The following is a list of frequently used social studies textbooks and programs. The list is arranged alphabetically by publisher within each area of social studies. If there is more than one author, only the first author is shown.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	AMERICAN HISTORY	
501	The American Experience (Madgic)	Addison-Wesley Publishing Co., Inc.
502	Amherst Project Units in American History (Brown)	Addison-Wesley Publishing Co., Inc.
503	The People Make a Nation (Sandler)	Allyn & Bacon, Inc.
504	History: U.S.A. (Allen)	American Book Co.
505	U.S.A. History With Documents (Allen)	American Book Co.
506	Freedom's Frontiers: The Story of the American People (Clark)	Benziger, Bruce, Glencoe, Inc.
507	Land of the Free: A History of the U.S. (Caughey)	Benziger, Bruce, Glencoe, Inc.
508	Search for Freedom (Jacobs)	Benziger, Bruce, Glencoe, Inc.
509	From Subject to Citizen	Denoyer-Geppert Co.
510	American History (Abramowitz)	Follett Publishing Co.
511	American Nation: Adventures in Freedom (Abramowitz)	Follett Publishing Co.
512	American History for Today (Branson)	Ginn & Co.
513	Decisions in United States History (Kenworthy)	Ginn & Co.
514	Episodes in American History (Burns)	Ginn & Co.
515	In Search of America (Sandler)	Ginn & Co.
516	America: Its People and Values (Wood)	Harcourt Brace Jovanovich, Inc.
517	Building the American Nation (Reich)	Harcourt Brace Jovanovich, Inc.
518	Rise of the American Nation (Todd)	Harcourt Brace Jovanovich, Inc.
519	A People and a Nation (Ver Steeg)	Harper and Row Publishers, Inc.
520	America: A Modern History of the U. S. (Freidel)	D. C. Heath & Co.
521	American Pageant: A History of the Republic (Bailey)	D. C. Heath & Co.
522	The Americans: A History of the U.S. (Fenton)	Holt, Rinehart & Winston, Inc.
523A	Challenge of America (Okun)	Holt, Rinehart & Winston, Inc.
523B	Discovering American History (Kownslar)	Holt, Rinehart & Winston, Inc.
524	The Shaping of America (Curry)	Holt, Rinehart & Winston, Inc.
525	History of the United States (Wade)	Houghton Mifflin Co.
526	Liberty and Union: A History of the United States (Ridge)	Houghton Mifflin Co.
527	This is America's Story (Wilder)	Houghton Mifflin Co.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	AMERICAN HISTORY (cont'd.)	
528	History of a Free People (Bragdon)	Macmillan Publishing Co., Inc.
529	As it Happened: A History of the U. S. (Sellers)	McGraw-Hill Book Co.
530	The Impact of Our Past: A History of the U. S. (Weisberger)	McGraw-Hill Book Co.
531	Adventure of the American People (Graff)	Rand McNally & Co.
532	The Free and the Brave (Graff)	Rand McNally & Co.
533	United States History: Search for Freedom (Current)	Scott, Foresman & Co.
534	Adventures in American History (Glanzrock)	Silver Burdett Co.
	CIVICS, CITIZENSHIP AND GOVERNMENT	
535	Challenge of American Democracy, The (Felder)	Allyn & Bacon, Inc.
536	Crucial Issues in American Government (Fraenkel)	Allyn & Bacon, Inc.
537	Magruder's American Government (McClenaghan)	Allyn & Bacon, Inc.
538	American Society: Inquiry into Civic Issues (Allen)	American Book Co.
539	Civics (Ball)	Follett Publishing Co.
540	American Political Behavior (Mehlinger)	Ginn & Co.
541	Conflict, Politics and Freedom (Quigley)	Ginn & Co.
542	Voices for Justice (Quigley)	Ginn & Co.
543	Your Rights and Responsibilities as an American Citizen (Quigley)	Ginn & Co.
544	Trailmarks of Liberty (Ratcliffe)	Houghton Mifflin Co.
545	Our American Government and Political System (Wit)	Laidlaw Brothers
546	American Government in Action (Resnick)	Charles E. Merrill Publishing Co.
547	Process of American Government: Cases and Problems (Feder)	Noble and Noble Publishers, Inc.
548	America's Political System (Woll)	Random House, Inc.
549	American Adventures (Epstein)	Scholastic Book Services
550	American Adventures (Friedman)	Scholastic Book Services
551	American Adventures (Hoexter)	Scholastic Book Services
552	American Government in The Twentieth Century (Abenstein)	Silver Burdett Co.
	WORLD HISTORY	
553	A Global History of Man (Stavrianos)	Allyn & Bacon, Inc.
554	Pageant of World History (Leinwand)	Allyn & Bacon, Inc.
555	World History (Abramowitz)	Follett Publishing Co.
556	World History: A Cultural Approach (Roselle)	Ginn & Co.
557	Exploring Civilizations (Linder)	Globe Book Co., Inc.
558	Exploring World History (Hold)	Globe Book Co., Inc.
559	Building the Modern World (Biller)	Harcourt Brace Jovanovich, Inc.
560	Men and Nations: A World History (Mazour)	Harcourt Brace Jovanovich, Inc.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	WORLD HISTORY (cont'd)	
561	The Ecumene: Story of Humanity (McNeill)	Harper & Row Publishers, Inc.
562	The Record of Mankind (Roehm)	D. C. Heath & Co.
563	Man's Unfinished Journey: A World History (Perry)	Houghton Mifflin Co.
564	Man's Cultural Heritage: A World History (Welty)	J. B. Lippincott Co.
565	World History Through Inquiry (Massialas)	Rand McNally & Co.
566	World Cultures Program	Scholastic Book Services
567	Living World History (Wallbank)	Scott, Foresman & Co.
	CONTEMPORARY PROBLEMS	
568	Crucial Issues in American Government (Fraenkel)	Allyn & Bacon, Inc.
569	Harvard University Social Studies Project (Oliver)	American Educational Publishers
570	Contemporary Social Problems Series	Dickenson Publishing Co.
571	Living in Urban American (Fenton)	Holt, Rinehart & Winston, Inc.
572	Analysis of Public Issues (Shaver)	Houghton Mifflin Co.
573	Justice in Urban America Series	Houghton Mifflin Co.
574	Black in White America	Macmillan Publishing Co., Inc.
575	Inquiry into Crucial American Problems (Fraenkel)	Prentice-Hall, Inc.
576	Problems of American Society	Washington Square Press
577	Public Issues Series	Xerox Educational Publishers
	SOCIOLOGY, ANTHROPOLOGY, WORLD CULTURES, GEOGRAPHY	
578	People: Cultures, Times, Places	Addison-Wesley Publishing Co., Inc.
579	World Studies Inquiry Series (Birch)	Addison-Wesley Publishing Co., Inc.
580	Asian Studies Inquiry Program (Michaelis)	Addison-Wesley Publishing Co., Inc.
581	Episodes in Social Inquiry Series (SRSS)	Allyn & Bacon, Inc.
582	Inquiries in Sociology (SRSS)	Allyn & Bacon, Inc.
583	Readings in Sociology Series (Hughes)	Allyn & Bacon, Inc.
584	Vital Issues: America Series	Cambridge Book Co.
585	Anthropology Today	CRM Books
586	Society Today	CRM Books
587	World of Mankind Series (Quigley)	Follett Publishing Co.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	SOCIOLOGY, ANTHROPOLOGY (cont'd)	
588	Ginn Social Science Series (Kenworthy)	Ginn & Co.
589	Sociology.(Landis)	Ginn & Co.
590	Anthropology (Salzmann)	Harcourt Brace Jovanovich, Inc.
591	Sociology: The Study of Human Relationships (Thomas)	Harcourt Brace Jovanovich, Inc.
592	Modern Sociology (Koller)	Holt, Rinehart & Winston, Inc.
593	Human Experience: World Culture Studies (Weitzman)	Houghton Mifflin Co.
594	World Regional Studies	Houghton Mifflin Co.
595	Geography in an Urban Age (High School Geography Project)	Macmillan Publishing Co., Inc.
596	Patterns in Human History (ACSP)	Macmillan Publishing Co., Inc.
597	The Wide World: A Geography (James)	Macmillan Publishing Co., Inc.
598	Sociology (Horton)	McGraw-Hill Book Co.
599	Sociology: An Analysis of Life in Modern Society (Green)	McGraw-Hill Book Co.
600	Sociology (Sankowsky)	Oxford Book Co.
601	Western Man and The Modern World Series (James)	Pergamon Press, Inc.
602	Inquiry into World Culture Series (Fraenkel)	Prentice-Hall, Inc.
603	Investigating Man's World (Hanna)	Scott, Foresman & Co.
604	Concern Series	Silver Burdett Co.
605	Mankind in Time and Place (Cooper)	Silver Burdett Co.
606	The Human Values Series (Arnspiger)	Steck-Vaughn Co.
	ECONOMICS	
607	Economics in Society (ECON 12) (Helburn)	Addison-Wesley Publishing Co., Inc.
608	Economic Man (Rader)	Benefic Press
609	Economics: An Analytical Approach (Harriss)	Ginn & Co.
610	The American Economy: Analysis, Issues, Principles (Sampson)	Houghton Mifflin Co.
611	Understanding Our Economy (Mortenson)	Houghton Mifflin Co.
612	Economics and The American System (Davies)	J. B. Lippincott Co.
613	Economics in Action (Calderwood)	Macmillan Publishing Co., Inc.
614	Economics (McConnell)	McGraw-Hill Book Co.
615	Economics (Samuelson)	McGraw-Hill Book Co.
616	World of Economics (Silk)	McGraw-Hill Book Co.
617	Economics: Principles and Practices (Brown)	Charles E. Merrill Publishing Co.
618	The Economic Process (Daugherty)	Scott, Foresman & Co.

CODE NUMBER	TEXTBOOK/PROGRAM	PUBLISHER
	PSYCHOLOGY	
619	Psychology: The Science of Behavior (Branca)	Allyn & Bacon, Inc.
620	Psychology: Understanding Ourselves and Others (Tallent)	American Book Co.
621	Psychology Today: An Introduction	CRM Books
622	Understanding Psychology	CRM Books
623	Exploring Human Nature	Education Development Center
624	An Invitation to Modern Psychology (Gallup)	Free Press
625	Human Behavior (Berelson)	Harcourt Brace Jovanovich, Inc.
626	Human Psychology (Kuhn)	Harcourt Brace Jovanovich, Inc.
627	Psychology: Its Principles and Applications (Engle)	Harcourt Brace Jovanovich, Inc.
628	Psychology of Modern Life (Whittaker)	Human Science Publishing Co.
629	Psychology for Living (Sorenson)	McGraw-Hill Book Co.
630	Psychology for You (Gordon)	Oxford Book Co.
631	Dimensions of Personality	Pflaum/Standard
632	Psychology: A Brief Introduction (Wertheimer)	Scott, Foresman & Co.
	OTHER SOCIAL STUDIES	
633	Essence I	Addison-Wesley Publishing Co., Inc.
634	Essence II	Addison-Wesley Publishing Co., Inc.
635	Concepts and Inquiry Series	Allyn & Bacon, Inc.
636	Concerns of the Nation (Lineham)	Bobbs-Merrill Co.
637	Exploring Childhood	Education Development Center
638	People and Technology	Education Development Center
639	Tiegs-Adams Series	Ginn & Co.
640	The Social Sciences: Concepts and Values (Brandwein)	Harcourt Brace Jovanovich, Inc.
641	Carnegie-Mellon Social Studies Curriculum Project (Fenton)	Holt, Rinehart & Winston, Inc.
642	Holt Social Studies Curriculum	Holt, Rinehart & Winston, Inc.
643	Life in America Series (Wade)	Houghton Mifflin Co.
644	Concepts for Social Studies (Price)	Macmillan Publishing Co., Inc.
645	Scott Foresman Spectra Program (Cuban)	Scott, Foresman, & Co.
646	Social Studies Unit Books	Xerox Educational Publishers

LIST OF CURRICULUM MATERIALS
(To be used in questions 15 and 16)

Selected mathematics, science, and social studies curriculum materials are listed below. Interdisciplinary materials (e.g., math and science) are listed separately at the end of the list. Within each subject area, materials which are used primarily in the elementary grades are listed first.

Code Number	MATHEMATICS
101	Comprehensive School Mathematics Program--Elementary Component (CSMP)
102	Developing Mathematical Processes (DMP)
103	Educational Research Council Mathematics Program (formerly Greater Cleveland Mathematics Program)
104	Individualized Mathematics System (IMS)
105	Individually Prescribed Instruction (IPI)
106	Infinity Factory
107	Madison Mathematics Project (MAD-M)
108	Comprehensive School Mathematics Program--Elements of Mathematics (CSMP-EM)
109	Modern Coordinate Geometry
110	School Mathematics Study Group (SMSG)
111	Search for Understanding Computation (SUC)
112	Secondary School Mathematics Curriculum Improvement Study (SSMCIS)
113	Stretchers and Shrinkers/Motion Geometry (University of Illinois Committee on School Mathematics)

	SCIENCE
201	BSCS Elementary School Science Project
202	Conceptually Oriented Program in Elementary Science (COPES)
203	Elementary Science Study (ESS)
204	Individualized Science (IS)
205	Science--A Process Approach (SAPA)
206	Science Curriculum Improvement Study (SCIS)
207	Biological Science: An Ecological Approach (BSCS Green)
208	Biological Science: An Inquiry into Life (BSCS Yellow)
209	Biological Science: Molecules to Man (BSCS (Blue)
210	Biological Science: Interaction of Experiments and Ideas
211	Biological Science: Me Now
212	Biological Science: Me and My Environment
213	Biological Science: Patterns and Processes
214	Chemical Bond Approach (CBA)
215	Chemical Education Materials Study (CHEM Study)
216	Individualized Science Instructional Systems (ISIS)
217	Introductory Physical Science (IPS)
218	Investigating the Earth--Earth Science Curriculum Project (ESCP)
219	Outdoor Biology Instructional Strategies (OBIS)
220	Physical Science II (PSII)

Code Number	SCIENCE (continued)
221	Physical Science Study Committee Physics (PSSC)
222	Probing the Natural World--Intermediate Science Curriculum Study (ISCS)
223	Project Physics Course (Harvard)
224	Science Explorations for the Future
225	Time, Space, and Matter--Secondary School Science Project
225	University of Illinois Astronomy Program

SOCIAL STUDIES

301 Concepts and Inquiry (Educational Research Council)
302 Elementary School Economics I, II (University of Chicago)
303 Elementary Social Science Education Program Laboratory Units (SRA)
304 Man: A Course of Study (MACOS)
305 Materials and Activities for Teachers and Children (MATCH)
306 Our Working World
307 Taba Program in Social Science

308 American Political Behavior
309 Black in White America
310 Carnegie-Mellon Social Studies Curriculum Project (Holt Social Studies Curriculum)
311 Comparing Political Experiences
312 Economics in Society (ECON 12)

313 Exploring Childhood
314 Exploring Human Nature
315 Family of Man (Minnesota Project Social Studies)
316 Georgia Anthropology Curriculum Project
317 Geography in an Urban Age--High School Geography Project

318 Human Behavior Curriculum Project
319 Patterns in Human History--Anthropology Curriculum Study Project
320 People and Technology
321 Project Africa
322 Social Studies Dynamics Program
323 Sociological Resources for the Social Studies (Episodes in Social Inquiry Series, Inquiries in Sociology, Readings in Sociology).

Code Number	INTERDISCIPLINARY
401	MINNEMAST (Minnesota School Mathematics and Science Teaching Project)
402	Unified Science and Mathematics for Elementary Schools (USMES)
403	Environmental Studies for Urban Youth (ESSENCE)
404	Human Sciences Program (BSCS)
405	Biomedical Interdisciplinary Curriculum Project
406	Huntington II
407	Technology-People-Environment (Engineering Concepts Curriculum Project-ECCP)
408	The Man Made World (Engineering Concepts Curriculum Project-ECCP)

THIS LIST NEED NOT BE RETURNED WITH THE QUESTIONNAIRE.

APPENDIX F

Reliability Questionnaires

This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-S-76010
Approval Expires 12/31/77

TEACHER QUESTIONNAIRE

SECTION A: GENERAL INFORMATION

1. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes	1
No	2

2. As a source of information about new developments in education, how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3

3a. How many different classes of students do you teach in a typical week?

(Circle one.)

One class	1 *GO TO Q. 3b*
More than one class	2 *GO TO Q. 4, Section B*

3b. How many minutes do you spend per week teaching each of the following subject areas? Please write "0" if you do not teach a particular subject to this class.

Subject	Approximate Number of Minutes per Week
a. Mathematics	______ minutes/week
b. Science	______ minutes/week
c. Social Studies	______ minutes/week
d. Reading	______ minutes/week

SECTION B: YOUR SCIENCE TEACHING

The remaining questions relate to your science teaching. A class is considered to be a K-3 class if at least half of the students in that class are in grades K, 1, 2, or 3. If you teach more than one class of science per day, please answer these questions about your first K-3 science class.

4. How often do you use each of the following techniques in teaching science to this class? If a technique does not apply to your class, please circle 1, "Never." (Circle one on each line.)

	Never	Less Than Once A Month	At Least Once A Month	At Least Once A Week	Just About Daily
a. Lecture	1	2	3	4	5
b. Discussion	1	2	3	4	5
c. Student reports or projects	1	2	3	4	5
d. Library work	1	2	3	4	5
e. Students working at chalkboard	1	2	3	4	5
f. Individual assignments	1	2	3	4	5
g. Students use hands-on manipulative or laboratory materials	1	2	3	4	5

5. Are you using one or more published textbooks or programs for teaching science to this class?

(Circle one.)

Yes .... 1 *GO TO Q. 6*
No .... 2 *GO TO Q. 7, Section C*

6. Please provide the following information for each published textbook/program that you are using in teaching science to this class. List the one which is used most often first.

	Title	Author	Publisher	Copyright Date
1.				
2.				
3.				

SECTION C: YOUR MOST RECENT SCIENCE LESSON IN THIS CLASS

Please answer the following questions specific to your most recent science lesson in this class. Do not be concerned if this lesson was not typical of instruction in this class.

7a. How many minutes did a typical student spend on science (including teacher-led instruction as well as small-group and individual work) during your most recent science lesson in this class? ______ minutes.

7b. Did that lesson take place on the most recent day your school was in session?

(Circle one.)

Yes 1
No 2

8. Indicate if each of the following activities took place during that science lesson.

(Circle one on each line.)

	Yes	No
a. Lecture	1	2
b. Discussion	1	2
c. Student use of hands-on, manipulative or laboratory materials	1	2

THANK YOU FOR YOUR COOPERATION!

This report is authorized by law (P.L. 81-507, as amended). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

O.M.B. No. 099-S-76010
Approval Expires 12/31/77

TEACHER QUESTIONNAIRE

SECTION A: GENERAL INFORMATION

1. Have you attended any NSF-sponsored institutes, conferences, or workshops?

(Circle one.)

Yes	1
No	2

2. As a source of information about new developments in education, how useful do you find each of the following?

(Circle one on each line.)

	Not Useful	Somewhat Useful	Very Useful
a. Teachers	1	2	3
b. Principals	1	2	3
c. Local Subject Specialists/Coordinators	1	2	3
d. State Department Personnel	1	2	3
e. College Courses	1	2	3
f. Local In-service Programs	1	2	3
g. Federally Sponsored Workshops	1	2	3

SECTION B: YOUR SCIENCE TEACHING

The remaining questions relate to your science teaching. A class is considered to be a 10-12 class if at least half of the students in that class are in grades 10, 11, or 12. If you teach more than one class of science per day, please answer these questions about your ________ 10-12 science class.

3. What is the title of this course? ______________________________

4. How often do you use each of the following techniques in teaching science to this class? If a technique does not apply to your class, please circle 1, "Never."

(Circle one on each line.)

	Never	Less Than Once A Month	At Least Once A Month	At Least Once A Week	Just About Daily
a. Lecture	1	2	3	4	5
b. Discussion	1	2	3	4	5
c. Student reports or projects	1	2	3	4	5
d. Library work	1	2	3	4	5
e. Students working at chalkboard	1	2	3	4	5
f. Individual assignments	1	2	3	4	5
g. Students use hands-on manipulative or laboratory materials	1	2	3	4	5

5. Are you using one or more published textbooks or programs for teaching science to this class?

(Circle one.)

Yes	1	*GO TO Q. 6*
No	2	*GO TO Q. 7, Section C*

6. Please provide the following information for each published textbook/program that you are using in teaching science to this class. List the one which is used most often <u>first</u>.

	Title	Author	Publisher	Copyright Date
1.				
2.				
3.				

SECTION C: YOUR MOST RECENT SCIENCE LESSON IN THIS CLASS

Please answer the following questions specific to your most recent science lesson in this class. Do not be concerned if this lesson was not typical of instruction in this class.

7a. How many minutes did a typical student spend on science (including teacher-led instruction as well as small-group and individual work) during your most recent science lesson in this class? _______ minutes

7b. Did that lesson take place on the most recent day your school was in session?

(Circle one.)

Yes	1
No	2

8. Indicate if each of the following activities took place during that science lesson.

(Circle one on each line.)

	Yes	No
a. Lecture	1	2
b. Discussion	1	2
c. Student use of hands-on, manipulative or laboratory materials	1	2

THANK YOU FOR YOUR COOPERATION!