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This is the second in the third series of general bibliographies developed to disseminate information on documents analyzed at the ERIC Information Analysis Center for Science Education. Reported are some 113 citations of selected documents related to teacher education in science and mathematics education. The documents included represent research reports, research reviews, manuals, textbooks, and other types. Citations are listed in alphabetical order by author and indicate sources, availability, and major ideas of the document. This bibliography updates, but does not replace general bibliography 2 (ED 015 879) and general bibliography 12 (ED 026 278) produced earlier by this Center. (RH)



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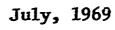
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A. SCIENCE EDUCATION

11 83 17 3 1. SE 004 018

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INDIANA UNIVERSITY, BLOOMINGTON

UNIVERSITY MICROFILMS, AND AREGR, MICHIGAN

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152 66

*DOCTORAL THESES, *INSTRUCTION, *PROBLEM SOLVING, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, *TEACHING TECHNIQUES, COLLEGE SCIENCE, RESEARCH REPORTS, WATSON GLASER CRITICAL THINKING APPRAISAL, 1966, INDIANA UNIVERSITY

11 35 29 2. SE 005 957 1

BLASS, GERHARD A.

TPT NOTES, A COOPERATIVE PROJECT TO IMPROVE HIGH SCHOOL PHYSICS IN DETROIT THE PHYSICS TEACHER

11 00 68

*EDUCATIONAL PROGRAMS, *INSERVICE EDUCATION, *PHYSICS, *SCIENCE INSTITUTES, *TEACHER EDUCATION, CONTINUING EDUCATION, PROJECT REPORTS, NATIONAL SCIENCE FOUNDATION, CENCO INSTRUMENT CORPORATION, DETROIT PUBLIC SCHOOLS, MICHIGAN

11 72 20 3. SE 005 868

BOENER, CHARLOTTE; AND OTHERS

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11 00 68

*PROFESSIONAL EDUCATION, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, COLLEGE SCIENCE, GENERAL EDUCATION, GENERAL SCIENCE, STUDENT TEACHING

11 09 17 4. SE 905 972

BRADSHAW, CHARLES KENNETH

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1

11 93 25

BUPKHAKT, BRUCE

A SURVEY OF JUNIOR COLLEGE CERTIFICATION REQUIREMENTS IN THE UNITED STATES THE AMERICAN BIOLOGY TEACHER

11 00 67

5

*COLLEGE SCIENCE, *JUNIOR COLLEGES, *TEACHER CERTIFICATION, CERTIFICATION, TEACHER QUALIFICATIONS, TEACHER EDUCATION

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2

11 01 17

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11 81 17

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66

*ELEMENTARY SCHOOL SCIENCE, *METHODS COURSES, *STUDENT TEACHERS, *TEACHER EDUCATION, DOCTORAL THESES, ELEMENTARY SCHOOL TEACHERS, RESEARCH REPORTS, TEAM TEACHING, UNIVERSITY OF ILLINOIS, 1966

8. SE 005 094

3

11 09 11

COHEN, DONALD; AND OTHERS

SUPPLEMENTARY MODERN MATHEMATICS FOR GRADES 1 THROUGH 9, IN-SERVICE COURSE FOR TEACHERS

SYRACUSE UNIVERSITY, NEW YORK; WEBSTER COLLEGE, ST. LOUIS, MISSCURI EDRS

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*ELEMENTARY SCHOOL MATHEMATICS, *INSERVICE TEACHER EDUCATION, *MATHEMATICS, *SECONDARY SCHOOL MATHEMATICS, *TEACHER EDUCATION, ARITHMETIC, ALGEBRA, CURRICULUM DEVELOPMENT, DISCOVERY LEARNING, INSERVICE COURSES, INSTRUCTIONAL MATERIALS, MATHEMATICAL CONCEPTS, MODERN MATHEMATICS, THE MADISON PROJECT



- 9. SE CO5 299 1 11 13 3?

 COMMISSION ON UNDERGRADUATE EDUCATION IN THE BIOLOGICAL SCIENCES

 CUEBS NEWS, VOLUME II, NUMBER 5

 COMMISSION ON UNDERGRADUATE EDUCATION IN THE BIOLOGICAL SCIENCES, WASHINGTON, D.C.

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 *BIOLOGY, *COLLEGE SCIENCE, *CURRICULUM, *INSTRUCTION, *TEACHER EDUCATION,

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- 10. SE 005 302

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 COMMISSION ON UNDERGRADUATE EDUCATION IN THE BIOLOGICAL SCIENCES, WASHINGTON, D.C.
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 *BIOLOGY, *COLLEGE SCIENCE, *PROFESSIONAL ASSOCIATIONS, *UNDERGRADUATE STUDY,
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 COMMISSION ON UNDERGRADUATE EDUCATION IN THE BIOLOGICAL SCIENCES

 CUEBS NEWS, VOLUME IV, NUMBER 5

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 NEWSLETTERS, PROGRAM PLANNING, PRESERVICE EDUCATION, COMMISSION ON

 UNDERGRADUATE EDUCATION IN THE BIOLOGICAL SCIENCES
- 12. SE 004 355

 CRAIG, GERALD S.

 SCIENCE FOR THE ELEMENTARY SCHOOL TEACHER

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 66 962

 *ELEMENTARY SCHOOL SCIENCE, *INSTRUCTION, *LEARNING, *RESOURCE MATERIALS,

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1

11 25 20

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EDUCATION QUARTERLY

5

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14. SE 005 781

3

11 81 1/

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OKLAHOMA STATE UNIVERSITY

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

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67 95

*ELEMENTARY SCHOOL SCIENCE, *PRESERVICE EDUCATION, *PSYCHOLOGICAL CHARACTERISTICS, *TEACHER EDUCATION, ACHIEVEMENT, DOCTORAL THESES, METHODS COURSES, RESEARCH REFORTS, SCIENCE EDUCATION, TEACHER ATTITUDES, ROKEACH'S DOGMATISM SCALE, READ GENERAL SCIENCE TEST, 1967

15. SE 005 339

1

11 84 20

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THE CONCEPT OF FYST, AN ASSOCIATION FOR FIRST-YEAR SCIENCE TEACHERS THE SCIENCE TEACHER

09 00 68

2

*BEGINNING TEACHERS, *CONTINUING EDUCATION, *PAPERS, *PROFESSIONAL ASSOCIATIONS, *SCIENCE TEACHERS, *TEACHER EDUCATION, ONONDAGE COUNTY, NEW YORK, CENTER FOR SCIENCE EDUCATION, SCIENCE WORKSHOPS, SYRACUSE UNIVERSITY, DIRECTOR OF SCIENCE TEACHERS IN THE GREATER SYRACUSE AREA, NATIONAL SCIENCE FOUNDATION, 1968

16. SE 005 432

1

11 84 20

EGGLESION, J. F.; KELLY, P. J. MATHEMATICS AND SCHOOL BIOLOGY JOURNAL OF BIOLOGICAL EDUCATION

06 00 68

16

*BIOLOGY, *CURRICULUM, *MATHEMATICS, *PAPERS, SECONDARY SCHOOL SCIENCE, BIOLOGY COURSES, RESEARCH NEEDS, THE ORIGIN OF SPECIES, DESCENT OF MAN, NUFFIELD FOUNDATION SCIENCE TEACHING PROJECT

1 11 35 17

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INCREASING THE COGNITIVE LEVEL OF CLASSROOM QUESTIONS: AN APPLICATION OF BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES

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18. SE 004 693

3

11 09 20

FENG, CHUAN C.

COMPUTER RELATED MATHEMATICS AND SCIENCE CURRICULUM MATERIALS - A NATIONAL SCIENCE FOUNDATION COOPERATIVE COLLEGE-SCHOOL SCIENCE PROGRAM IN COMPUTING SCIENCE EDUCATION BOULDER VALLEY SCHOOL DISTRICT, COLORADO; JEFFERSON COUNTY SCHOOL DISTRICT, COLORADO EDRS

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19. SE 004 130

11 81 29

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ELEMENTARY SCIENCE

MISSOURI STATE DEPARTMENT OF EDUCATION, JEFFERSON CITY

*ELEMENTARY SCHOOL SCIENCE, *INSERVICE PROGRAMS, *PROGRAM DESCRIPTIONS, *SCIENCE, *TEACHER EDUCATION, OBJECTIVES, MISSOURI STATE DEPARTMENT OF EDUCATION, NATIONAL DEFENSE EDUCATION ACT, TITLE III

20. SE 005 000

11 92 17

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2

11 53 17

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LABORATORY EXPERIMENTS IN COLLEGE PHYSICAL SCIENCE FOR PROSPECTIVE ELEMENTARY SCHOOL TEACHERS

COLUMBIA UNIVERSITY, NEW YORK, NEW YORK University microfilms, ann arbor, michigan

*COLLEGE SCIENCE, *ELEMENTARY SCHOOL SCIENCE, *INSTRUCTIONAL MATERIALS, *LABORATORY EXPERIMENTS, *PHYSICAL SCIENCES, *SCIENCE ACTIVITIES, *TEACHER EDUCATION, CHEMISTRY, DOCTORAL THESES, PHYSICS, UNDERGRADUATE STUDY

22. SE 004 342

1

11 42 20

HIGGINS, JON L.; BOYER, ROBERT E. EXPERIMENTAL EARTH SCIENCE FOR EIGHTH GRADE - A COOPERATIVE COLLEGE-SCHOOL SCIENCE PROGRAM

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3

*CURRECULUM DEVELOPMENT, *EARTH SCIENCE, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, CURRICULUM, GRADE 8, INSERVICE EDUCATION, SCIENCE ACTIVITIES, EARTH SCIENCE CURRICULUM PROJECT, NATIONAL SCIENCE FOUNDATION, SAN ANTONIO, TEXAS

23. SE 004 621

3

11 35 17

HOFFART, ERVIN H.

THE ROLE OF HIGH SCHOOL TEACHERS IN DISSEMINATING NEW ELEMENTARY SCIENCE CURRICULUM EDUCATION DEVELOPMENT CENTER, NEWTON, MASSACHUSETTS **EDRS**

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24. SE 005 020

11 71 15

HONE, ELIZABETH B.; AND OTHERS

A SOURCEBOOK FOR ELEMENTARY SCIENCE

HARCOURT, BRACE & WORLD, INC., NEW YORK, NEW YORK

62 552

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11 93 17

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26. SE 004 393

1

11 81 20

JACOBSON, WILLARD J.

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68 8

*EDUCATIONAL CHANGE, *ELEMENTARY SCHOOL SCIENCE, *TEACHER EDUCATION, EDUCATIONAL PROGRAMS, SCIENCE TEACHERS

27. SE 005 599

1

11 33 17

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09 00 68

*COLLEGE SCIENCE, *EDUCATIONAL PROGRAMS, *HIGH SCHOOL TEACHERS, *PHYSICS, *TEACHER EDUCATION, CURRICULUM, EVALUATION, RESEARCH REPORTS

28. SE 004 299

2

11 91 11

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THE RONALD PRESS COMPANY, NEW YORK, NEW YORK

63 492

*ELEMENTARY SCHOOL SCIENCE, *INSTRUCTIONAL MATERIALS, *METHODS COURSES,

*SCIENCE ACTIVITIES, *TEACHING METHODS, *TEACHER EDUCATION, AUDIOVISUAL AIDS,

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11 81 19

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31. SE 004 184

1

11 91 29

KROCKOVER, GERALD H.; SCHAEFER, DONALD A.
IMPROVING ELEMENTARY SCIENCE INSTRUCTION
SCHOOL SCIENCE AND MATHEMATICS

02 00 68 6

*ELEMENTARY SCHOOL SCIENCE, *SUMMER INSTITUTES, *TEACHER EDUCATION, INSTRUCTIONAL IMPROVEMENT, MATHEMATICS, PHYSICAL SCIENCES, TEACHING METHODS, UNITED STATES OFFICE OF EDUCATION, PHYSICAL SCIENCE STUDY COMMITTEE, AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE - SCIENCE A PROCESS APPROACH, TEST ON UNDERSTANDING SCIENCE

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33. SE 0C4 234

3

11 82 22

LEFLER, RALPH W.; A'D OTHERS

CUIDELINES FOR CONTENT OF PRE-SERVICE PROFESSIONAL EDUCATION FOR SECONDARY SCHOOL SCIENCE TEACHERS

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ED 017 470 MF \$0

MF \$0.25 HC \$1.35

12 00 67 25

*PROFESSIONAL EDUCATION, *PRESERVICE EDUCATION, *SCIENCE EDUCATION, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, GUIDELINES, TLACHER ROLE, ASSOCIATION FOR THE EDUCATION OF IEACHERS IN SCIENCE, NATIONAL SCIENCE TEACHERS ASSOCIATION, AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

34. SE 004 308

1

11 91 11

LEWIS, JUNE E.; POTTER, IRENE C.

THE TEACHING OF SCIENCE IN THE ELEMENTARY SCHOOL

PRENTICE-HALL, INCORPORATED, ENGLEWOOD CLIFFS, NEW JERSEY

61 381

*ELEMENTARY SCHOOL SCIENCE, *METHODS COURSES, *RESOURCE MATERIALS, *SCIENCE EDUCATION, *SCIENCE ACTIVITIES, *TEXTBOOKS, *TEACHING METHODS, *TEACHER EDUCATION, AUDIOVISUAL AIDS, BIOLOGICAL SCIENCES, EARTH SCIENCES, EVALUATION, EDUCATIONAL OBJECTIVES, FILMS, INSTRUCTIONAL MATERIALS, PHYSICAL SCIENCES, SCIENCE MATERIALS

35. SE 004 653

1

11 12 20

LIGHTNER, JERRY P.

THE OUTLOOK FOR HIGH SCHOOL BIOLOGY TEACHING

THE AMERICAN BIOLOGY TEACHER

3

04 00 68

*BIOLOGY, *CAREERS, *SECONDARY SCHOOL SCIENCE, *SCIENCE TLACHERS, MANPOWER NEEDS, TEACHER EDUCATION, TEACHER SALARIES

36. SE 005 641

3

11 71 17

MACDOUGALL, MARY ANN

THE TEACHING OF UPPER ELEMENTARY SCHOOL SCIENCE USING PROGRAMED MATERIALS COUPLED WITH STUDENT PERFORMED EXPERIMENTS

UNIVERSITY OF VIRGINIA, CHARLOTTESVILLE

EDRS

ED 023 613

MF \$0.50

HC \$4.55

08 00 68

89

*ACHIEVEMENT, *ELEMENTARY SCHOOL SCIENCE, *INDIVIDUALIZED INSTRUCTION, *PROGRAMED INSTRUCTION, *TEACHER EDUCATION, CURRICULUM, GRADE 4, GRADE 5, GRADE 6, INSTRUCTIONAL MATERIALS, INSERVICE EDUCATION, LORGE-THORNDIKE INTELLIGENCE TEST, SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS SCIENCE ACHIEVEMENT TEST

3

11 94 17

MARTINEN, GORDON DAVID

A STUDY OF THE NATIONAL SCIENCE FOUNDATION SUMMER INSTITUTES IN SCIENCE AND MATHEMATICS HELD AT THE UNIVERSITY OF IDAHO FROM 1957 THROUGH 1964 AND THEIR IMPACT ON PROFESSIONAL ACTIVITIES OF THE PECIPIENTS

UNIVERSITY OF IDAHO

university microfilms, Ann Arbor, Michigan

NOT AVAILABLE FROM EDRS ED 022 702

> 288 67

*MATHEMATICS, *SCIENCES, *SUMMER INSTITUTES, *SECONDARY SCHOOL TEACHERS, *TEACHER EDUCATION, DOCTORAL THESES, EVALUATION, PROGRAM EVALUATION, TEACHER CHARACTERISTICS, RESEARCH REPORTS, UNIVERSITY OF IDAHO, NATIONAL SCIENCE FOUNDATION

38. SE 005 080

1

11 04 11

MASSEY, NORMAN B.

PATTERNS FOR THE TEACHING OF SCIENCE

MACMILLAN COMPANY, NEW YORK, NEW YORK

257

*INSTRUCTIONAL MATERIALS, *SCIENCE EDUCATION, *SCIENCE ACTIVITIES, *TEACHER EDUCATION, AUDIOVISUAL AIDS, INSTRUCTION, TEACHING TECHNIQUES, TEXTBOOKS, 1965

39. SE 005 647

1

11 83 17

MATTHEWS, CHARLES C.

CLASSROOM VERBAL BEHAVIOR OF SCIENCE STUDENT TEACHERS AND THEIR COOPERATING TEACHERS

JOURNAL OF RESEARCH IN SCIENCE TEACHING

*BEHAVIOR, *COOPERATING TEACHERS, *STUDENT TEACHERS, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, LEARNING, VERBAL COMMUNICATION, CORNELL UNITERSITY, 1967

40. SE 005 147

11 83 17

MATTHEWS, CHARLES COLUMBUS

THE CLASSROOM VERBAL BEHAVIOR OF SELECTED SECONDARY SCHOOL SCIENCE STUDENT TEACHERS AND THEIR COOPERATING CLASSROOM TEACHERS

CORNELL UNIVERSITY

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

ED 023 593

NOT AVAILABLE FROM EDRS

242 66

*SCIENCE TEACHERS, *STUDENT TEACHERS, *TEACHER EDUCATION, *TEACHER CHARACTERISTICS, *TEACHER BEHAVIOR, DOCTORAL THESES, INTERACTION PROCESS ANALYSIS, SECONDARY SCHOOL TEACHERS, VERBAL COMMUNICATION, CORNELL UNIVERSITY, FLANDERS INTERACTION ANALYSIS SYSTEM



1

11 42 20

MAYER, VICTOR J.

SCIENCE REQUIREMENTS IN EARTH SCIENCE TEACHER PREPARATION PROGRAMS
JOURNAL OF RESEARCH IN SCIENCE TEACHING

68 *6*

*COLLEGE SCIENCE, *EARTH SCIENCE, *SURVEYS, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, EDUCATIONAL PROGRAMS, RESEARCH REPORTS, NATIONAL COUNCIL FOR ACCREDITATION OF TEACHER EDUCATION, DIRECTORY OF GEOSCIENCE DEPARTMENTS, AMERICAN GEOLOGICAL INSTITUTE, EARTH SCIENCE CURRICULUM PROJECT, 1967

42. SE 005 286

1

11 85 20

MCAULAY, J.D.

TRAINING AND RETRAINING OF MATHEMATICS AND SCIENCE TEACHERS THE EDUCATION DIGEST

03 00 65 3

*COLLEGE SCIENCE, *CONTINUING EDUCATION, *TEACHER EDUCATION, MATHEMATICS TEACHERS, SCHOOL INDUSTRY RELATIONSHIP, SCIENCE TEACHERS

43. SE 005 152

2

11 54 17

MCBRIDE, RICHARD EARL

THE EFFECT OF AN IN-SERVICE SCIENCE TRAINING PROGRAM FOR TEACHERS ON THE ACHIEVEMENT OF ELEMENTARY SCHOOL CHILDREN CORNELL UNIVERSITY, ITHACA, NEW YORK

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

67 133

*ACHIEVEMENT, *ELEMENTARY SCHOOL SCIENCE, *INSERVICE TEACHER EDUCATION, *PROGRAM. EFFECTIVENESS, *TEACHER EDUCATION, DOCTORAL THESES, EVALUATION, ELEMENTARY SCHOOL TEACHERS, EGUCATIONAL PROGRAMS, PHYSICAL SCIENCES, RESEARCH REPORTS, NEW YORK STATE'S REGIONAL SCIENCE PROGRAM, NEW YORK STATE EDUCATION DEPARTMENT, CORNELL UNIVERSITY, SPEARMAN-BROWN PROPHECY FORMULA, 1967

44. SE 005 153

2

11 86 17

MCLEOD, RICHARD J.

CHANGES IN THE VERBAL INTERACTION PATTERNS OF SECONDARY SCIENCE STUDENT TEACHERS WHO HAVE HAD TRAINING IN INTERACTION ANALYSIS AND THE RELATIONSHIP OF THESE CHANGES TO THE VERBAL INTERACTION OF THEIR COOPERATING TEACHERS CORNELL UNIVERSITY

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

66 336

*INTERACTION PROCESS ANALYSIS, *STUDENT TEACHERS, *SCIENCE TEACHERS, *TEACHER EDUCATION, DOCTORAL THESES, INSTRUCTION, RESEARCH REPORTS, SECONDARY SCHOOL SCIENCE, VERBAL COMMUNICATIONS



1

11 01 17

MENZEL, ERVIN WESLEY

A STUDY OF PRESERVICE ELEMENTARY TEACHER EDUCATION IN TWO PROCESSES OF SCIENCE TEMPLE UNIVERSITY

UNIVERSITY MICROFILMS, ANN AREOR, MICHIGAN

68 228

*ELEMENTARY SCHOOL TEACHERS, *INSTRUCTION, *TEACHER EDUCATION, *TEACHING PROCEDURES, *TEACHING METHODS, ACHIEVEMENT, DOCTORAL THESES, DISCOVERY PROCESSES, METHODS COURSES, RESEARCH REPORTS, STUDENT TEACHERS, SEQUENTIAL TEST ON EDUCATIONAL PROGRESS

46. SE 004 784

1

11 42 06

MERRILL, WILLIAM M.; AND OTHERS

RECOMMENDATIONS - ACADEMIC PREPARATION OF SECONDARY SCHOOL EARTH SCIENCE TEACHERS JOURNAL OF GEOLOGICAL EDUCATION

02 00 66 4

*EARTH SCIENCE, *PROFESSIONAL EDUCATION, *SECONDARY SCHOOL TEACHERS, *TEACHER EDUCATION, CERTIFICATION, GEOLOGY, MATHEMATICS, UNDERGRADUATE STUDY, NATIONAL SCIENCE TEACHERS ASSOCIATION, EARTH SCIENCE CURRICULUM PROJECT, NATIONAL ASSOCIATION OF GEOLOGY TEACHERS, ASSOCIATION FOR THE EDUCATION OF TEACHERS OF SCIENCE, COUNCIL FOR THE EDUCATION OF TEACHERS OF SCIENCE

47. SE 004 782

1

11 43 20

MERRILL, WILLIAM M.; SHRUM, JOHN W.

PLANNING FOR EARTH SCIENCE TEACHER PREPARATION

JOURNAL OF GEOLOGICAL EDUCATION

02 00 56 3

*EDUCATIONAL PROGRAMS, *EARTH SCIENCE, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, CERTIFICATION, EDUCATIONAL IMPROVEMENT, EARTH SCIENCE CURRICULUM PROJECT, PANEL ON EARTH SCIENCE TEACHER PREPARATION, COUNCIL ON EDUCATION IN THE GEOLOGICAL SCIENCES

48. SE 004 321

2

11 93 17

MILLIKER, DON QUENTIN

AN EVALUATION OF NATIONAL SCIENCE FOUNDATION INSTITUTES BY THE PARTICIPANTS OKLAHOMA STATE UNIVERSITY, OKLAHOMA CITY

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

64 172

*INSERVICE TEACHER EDUCATION, *MATHEMATICS TEACHERS, *SCIENCE TEACHERS, *SUMMER INSTITUTES, *SCIENCE INSTITUTES, *TEACHER EDUCATION, DOCTORAL THESES, GRADUATE STUDY, MATHEMATICS INSTITUTES, PROGRAM EVALUATION, RESEARCH REPORTS, TEACHING METHODS, TRAINING PROGRAMS, OKLAHOMA STATE UNIVERSITY, KANSAS STATE COLLEGE OF PITTSBURGH, NATIONAL SCIENCE FOUNDATION, 1964



49. SE 905 150

3

11 82 17

MITIAS, RACY GEORGY EL-KOMOS

PATTERNS OF PROBLEM SOLVING BEHAVIOR AMONG PROSPECTIVE SCIENCE TEACHERS

THE OHIO STATE UNIVERSITY, COLUMBUS

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

ED 025 416

NOT AVAILABLE FROM EDRS

67 201

*COLLEGE SCIENCE, *PRESERVICE EDUCATION, *PROBLEM SOLVING, *STUDENT BEHAVIOR, *TEACHER ENJOATION, BEHAVIOR, DOCTORAL THESES

50. SE 004 036

3

11 83 17

MOLCHEN, KENNETH JOSEPH

A STUDY OF CHANGES IN INTENTIONS, PERCEPTIONS, AND CLASSROOM VERBAL BEHAVIOR

GF SCIENCE INTERNS AND APPPENTICES

HARVARD UNIVERSITY, CAMBRILGE, MASSACHUSETTS

UNIVERSITY MICROFILMS, ANN AREOR, MICHIGAN

ED 022 666 NOT AVAILABLE FROM EDRS

67 390

*BEHAVIOR, *TEACHER EDUCATION, *TEACHER INTERNS, DOCTORAL THESES, TEACHER ROLE, RESEARCH REPORTS, HARVARD UNIVERSITY, FLANDERS INTERACTION ANALYSIS

51. SE 004 193

1

11 92 29

NEAL, VICTOR T.

OCEANOGRAPHY FOR TEACHERS

THE SCIENCE TEACHER

02 00 68

1

*EDUCATIONAL PROGRAMS, *OCEANOLOGY, *SUMMER PROGRAMS, *TEACHER EDUCATION, *ELEMENTARY SCHOOL SCIENCE, SECONDARY SCHOOL SCIENCE, OREGON STATE UNIVERSITY

52. SE 005 692

4

11 42 29

NICODEMUS, ROBERT B.

A SUMMER PROGRAM FOR TEACHERS OF EARTH SCIENCE CURRICULUM PROJECT MATERIALS EDRS

ED 024 606 MF \$0.25 HC \$1.15

68 21

*EARTH SCIENCE, *PROGRAM DESCRIPTIONS, *SECONDARY SCHOOL SCIENCE, *SUMMER INSTITUTES, *TEACHER EDUCATION, EDUCATIONAL PROGRAMS, SCIENCE COURSE IMPROVEMENT PROJECT, EARTH SCIENCE CURRICULUM PROJECT, INVESTIGATING THE EARTH, COOPERATIVE COLLEGE-SCHOOL SCIENCE PROGRAM, NATIONAL SCIENCE FOUNDATION, 1968



7

11 22 17

ORLICH, DONALD C.; SEELING, ROBERT H.

SCIENCE PREPARATION OF IDAHO BIOLOGY TEACHERS COMPARED WITH AAAS COOPERATIVE COMMITTEE RECOMMENDATIONS

JOURNAL OF RESEARCH IN SCIENCE TEACHING

68

*BIOLOGY, *SCIENCE TEACHERS, *SECONDARY SCHOOL SCIENCE, *STATE SURVEYS, *TEACHER EDUCATION, RESEARCH REPORTS, IDAHO, AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, 1965

54. SE 005 463

1

19 72 17

PERKES, VICTOR A.

JUNIOR HIGH SCHOOL SCIENCE TEACHER PREPARATION, TEACHING BEHAVIOR, AND STUDENT ACHIEVEMENT

JOURNAL OF RESEARCH IN SCIENCE TEACHING

68 6

*ACADEMIC ACHIEVEMENT, *JUNIOR HIGH SCHOOL, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, *TEACHER BEHAVIOR, GENERAL SCIENCE, RESEARCH REPORTS, SEQUENTIAL TEST OF EDUCATIONAL PROGRESS, JUNIOR HIGH SCHOOL SCIENCE ACHIEVEMENT TEST, SCIENCE TEACHING OBSERVATION INSTRUMENT

55. SE 005 748

1

11 92 29

PITTSYLVANIA COUNTY SCHOOLS

SCIENCE WORKSHOP

PITTSYLVANIA COUNTY SCHOOLS, CHATHAM, VIRGINIA

07 00 68 9

*CURRICULUM GUIDES, *ELEMENTARY SCHOOL SCIENCE, *TEACHING GUIDES, CURRICULUM DEVELOPMENT, INSERVICE TEACHER EDUCATION, PROGRAM DESCRIPTIONS, SUMMER WORKSHOPS, TEACHER EDUCATION, PITTSYLVANIA COUNTY, CHATHAM, VIRGINIA, 1968

56. SE 004 138

2

11 81 11

RENNER, JOHN W.; RAGAN, WILLIAM B.

TEACHING SCIENCE IN THE ELEMENTARY SCHOOL

university of oklahoma, norman

HARPER AND ROW PUBLISHERS, INC., NEW YORK, NEW YORK

68 360

*ELEMENTARY SCHOOL SCIENCE, *INSTRUCTION, *TEACHER EDUCATION, *TEACHING TECHNIQUES, CRITICAL THINKING, EVALUATION, INQUIRY TRAINING, INSTRUCTIONAL MATERIALS, SCIENCE ACTIVITIES, TEXTBOOKS, 1968



1

11 83 17

REYNOLDS, GEORGE WILLIAM

THE USEFULNESS OF THE PORTABLE VIDEO RECORDER IN SUPERVISING STUDENT TEACHERS OF SCIENCE

OHIO STATE UNIVERSITY, COLUMBUS, OHIO

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

66 13

*STUDENT TEACHING, *SUPERVISORY METHODS, *TEACHER EDUCATION, DOCTORAL THESES, RESEARCH REPORTS, VIDEO TAPE RECORDINGS, PROFESSIONAL-EMPLOYEE ROLE CONCEPT SCALE, 1966

58. SE 004 329

2

11 85 17

ROBINETTE, WALTER ROLAND

A DESCRIPTIVE ANALYSIS OF A SCIENCE EDUCATION WORKSHOP AND OUTCOMES AS REFLECTED IN CLASSROOM PRACTICES

ALABAMA POLYTECHNIC INSTITUTE

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

57 297

*INSERVICE EDUCATION, *SCIENCE EDUCATION, *TEACHER EDUCATION, TEACHENG EFFECTIVENESS, WORKSHOPS, ALBAMA, 1957

59. SE 004 379

1

11 29 29

RUTLEDGE, JAMES A.

PREPARING SECONDARY SCHOOL TEACHERS FOR 1980

JOURNAL OF RESEARCH IN SCIENCE TEACHING

68 8

*SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, CURRICULUM PLANNING, EDUCATIONAL INNOVATION, EDUCATIONAL PROGRAMS, SCIENCE TEACHERS

60. SE 004 042

3

11 53 17

SANDERS, LEROY JOHN

AEROSPACE EDUCATION FOR TEACHERS BASED ON RECOMMENDATIONS OF SELECTED AVIATION AND SPACE INDUSTRIES

COLORADO STATE COLLEGE, GREELEY

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

ED 022 669

NOT AVAILABLE FROM EDRS

67 177

*AEROSPACE TECHNOLOGY, *COLLEGE SCIENCE, *TEACHER EDUCATION, ELEMENTARY SCHOOL TEACHERS, PHYSICAL SCIENCES, SECONDARY SCHOOL TEACHERS, SCIENCES, SCHOOL INDUSTRY RELATIONSHIP, RESEARCH REPORTS

1

11 34 29

SCHAEFER, DOMALD A.; KROCKOVER, GERALD H. SUMMER PHYSICS PROGRAM FOR ELEMENTARY SCHOOL TEACHERS THE SCIENCE TEACHER

03 00 68

*ELEMENTARY SCHOOL TEACHER, *ELEMENTARY SCHOOL SCIENCE, *PHYSICS, *TEACHER EDUCATION, EDUCATION L PROGRAM, PROGRAM DESCRIPTIONS, CONTINUING EDUCATION, PHYSICAL SCIENCE STUDY COMMITTEE, AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, UNITED STATES OFFICE OF EDUCATION, BETTENDORF PUBLIC SCHOOLS, IOMA, MARYCREST COLLEGE, DAVENPORT, AMAS SCIENCE PROCESS MEASURE FOR TEACHERS, TEST ON UNDERSTANDING SCIENCE, 1968

62. SE 004 960

7

11 09 32

SCHOOL MATHEMATICS STUDY GROUP

SMSG NEWSLETTER NO. 19 - REPORT OF A SURVEY OF IN-SERVICE PROGRAMS FOR MATHEMATICS TEACHERS

SCHOOL MATHEMATICS STUDY GROUP, STANFORD UNIVERSITY, CALIFORNIA 09 00 64 31

*ELEMENTARY SCHOOL MATHEMATICS, *INSERVICE TEACHER EDUCATION, *MATHEMATICS, *PROFESSIONAL CONTINUING EDUCATION, *TEACHER EDUCATION, EDUCATIONAL PROGRAMS, LATHEMATICS TEACHERS, SURVEYS, TEACHERS, SCHOOL MATHEMATICS STUDY GROUP, 1964

63. SE 004 781

1

11 42 17

SHEA, JAMES H.

HIGHLIGHTS OF 1965 ESCP SURVEY OF EARTH SCIENCE TEACHERS JOURNAL OF GEOLOGICAL EDUCATION

02 00 66

*EARTH SCIENCE, *TEACHER EDUCATION, GENERAL SCIENCE, RESEARCH REPORTS, *SECONDARY SCHOOL TEACHERS, EARTH SCIENCE CURRICULUM PROJECT

64. SE 004 783

1

11 43 06

SHRUM, JOHN W.

RECOMMENDATIONS FOR A BASIC ACADEMIC PREPARATION FOR EARTH SCIENCE TEACHERS JOURNAL OF GEOLOGICAL EDUCATION

02 00 66

*CONFERENCE REPORTS, *EARTH SCIENCE, *EARTH SCIENCE TEACHERS, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, UNDERGRADUATE STUDY, EARTH SCIENCE, CURRICULUM PROJECT, AMERICAN GEOLOGICAL INSTITUTE

65. SE 904 213

1

11 86 20

SOAR, ROBERT S.

NEW DEVELOPMENTS IN EFFECTIVE TEACHING

THE AMEPICAN BIOLOGY TEACHER

01 00 68

*EVALUATION, *EFFECTIVE TEACHING, *TEACHER EDUCATION, CLASSROOM RESEARCH, EVALUATION, EVALUATION TECHNIQUES, INTERACTION PROCESS ANALYSIS, PAPERS, TEACHER BEHAVIOR, VERBAL BEHAVIOR

2

11 95 37

SUTMAN, FRANK X.; AND OTHERS

A CAREER FOR YOU AS A SCIENCE TEARER

NATIONAL SCIENCE TEACHERS ASSOCIATION, WASHINGTON, D.C.

66 4

*GCCUPATIONAL INFORMATION, *PROFESSIGNAL RAINING, *SCIENCE TEACHING CAREERS, *TEACHER ROLE, *TEACHER EDUCATION, COLLEGE TEACHING, CAREERS, ELEMENTARY SCHOOL SCIENCE, NATIONAL MERIT SCHOLARSHIPS, NATIONAL EDUCATION ASSOCIATION, NATIONAL SCIENCE TEACHERS ASSOCIATION

67. SE 005 990

1

11 83 17

SWEENEY, MARGARET WILSON

THE EFFECTS OF TWO ORGANIZATIONAL PATTERNS OF MICROSIMULATED TEACHING EXPERIENCES ON THE VERBAL BEHAVIOR OF STUDENT TEACHERS TRAINED AND NOT TRAINED IN INTERACTION ANALYSIS

WEST VIRGINIA UNIVERSITY

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

68 173

*INTERACTION PROCESS ANALYSIS, *MICROTEACHING, *STUDENT TEACHERS, *TEACHER
EDUCATION, DCCTORAL THESES, RESEARCH REPORTS, SIMULATION, TEACHER CHARACTERISTICS,
TEACHING TECHNIQUES, TEACHER BEHAVIOR

68. SE 005 021

1

11 83 11

TANNENBAUM, HAROLD E.; AND OTHERS

SCIENCE EDUCATION FOR ELEMENTARY SCHOOL TEACHERS, SECOND EDITION

ALLYN AND BACON, INC., BOSTON, MASSACHUSETTS

65 3<u>4</u>9

*ELEMENTARY SCHOOL TEACHERS, *INSTRUCTIONAL MATERIALS, *SCIENCE TEACHING, *TEACHING METHODS, *TEACHER EDUCATION, GRADUATE STUDY, SCIENCE EDUCATION, TEXTBOOKS, UNDERGRADUATE STUDY

69. SE 004 676

1

11 86 20

THIMANN, KENNETH V.

THE CANDIDATES' DEGREE - IS THE PH.D. DEGREE INADEQUATE?

BIOSCIENCE

03 00 68 2

*DOCTCRAL DEGREES, *EDUCATIONAL PROBLEMS, *GRADUATE STUDY, *TEACHER EDUCATION, COLLEGE PROGRAMS, EDUCATIONAL PROGRAMS, SCIENCE EDUCATION HISTORY

70. SE 004 049

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11 83 17

TILLERY, BILL

IMPROVEMENT OF SCIENCE EDUCATION METHODS COURSES THROUGH STUDENT SELF-EVALUATION COLORADO STATE COLLEGE, GREELEY

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

ED 021 719 NOT AVAILABLE FROM EDRS

67 124

*EVALUATION, *METHODS COURSES, *SELF EVALUATION, *TEACHER EDUCATION, COLLEGE STUDENTS, DOCTORAL THESES, ELEMENTARY SCHOOL SCIENCE, RESEARCH REPORTS, COLORADO STATE COLLEGE, STUDENT EVALUATION OF ACHIEVEMENT, 1967

71. SE 905 667 1

TURNER, GEORGE C.

THE INTERN-MASTER'S DEGREE PROGRAM - A NEW APPROACH FOR BOTH TEACHERS AND STUDENTS THE SCIENCE TEACHER

11 92 20

11 00 68 2

*COLLEGE SCIENCE, *MATHEMATICS, *MASTERS DEGREES, *SECONDARY SCHOOL SCIENCE, *TEACHER EDUCATION, *TEACHER INTERNS, EDUCATIONAL PROGRAMS, CALIFORNIA STATE COLLEGE AT FULLERTON, NATIONAL SCIENCE FOUNDATION, 1968

72. SE 005 924 1 11 92 17

TWEETEN, PAUL W.; YAGER, ROBERT F.

CONTENT PREPARATION OF SCIENCE TEACHERS IN IONA

SCHOOL SCIENCE AND MATHEMATICS

12 00 68 4

*ACADEMIC EDUCATION, *SCIENCE TEACHERS, *SECONDARY SCHOOL SCIENCE, *TEACHER CHARACTERISTICS, *TEACHER EDUCATION, BIOLOGY, CHEMISTRY, PHYSICS, *STATE SURVEYS, IOWA, 1968

73. SE 004 875 3 11 53 17

WEICHINGER, THEODORE

THE DETERMINATION OF SUITABLE LABORATORY EXPERIENCES FOR A PHYSICAL SCIENCE COURSE FOR PROSPECTIVE ELEMENTARY SCHOOL TEACHERS

COLORADO STATE COLLEGE, GREELEY

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

ED 020 899 NOT AVAILABLE FROM EDRS

67 271

*DCCTORAL THESES, *ELEMENTARY SCHOOL SCIENCE, *PHYSICAL SCIENCES, *SCIENCE TEACHERS, *TEACHER EDUCATION, *UNDERGRADUATE STUDY, CHEMISTRY, LABORATORY PROCEDURES, LABORATORY EXPERIMENTS, SCIENCE COURSES, RESEARCH REPORTS, COLORADO STATE COLLEGE

74. SE 005 461 1 11 34 17

WELCH, WAYNE W.; WALBERG, HERBERT J. AN EVALUATION OF SUMMER INSTITUTE PROGRAMS FOR PHYSICS TEACHERS JOURNAL OF RESEARCH ON SCIENCE TEACHING

68 5

*ACHIEVEMENT, *PHYSICS TEACHERS, *SECONDARY SCHOOL CIENCE, *SUMMER INSTITUTES, *TEACHER EDUCATION, CONTINUING EDUCATION, EVALUATION, RESEARCH REPORTS, TEST ON UNDERSTANDING SCIENCE, TEST ON SELECTED TOPICS IN PHYSICS, WELCH SCIENCE PROCESS INVENTORY, READ GENERAL SCIENCE TEST



3

11 91 17

WILSON, JOHN HAROLD

DIFFERENCES BETWEEN THE INQUIRY-DISCOVERY AND THE TRADITIONAL APPROACHES TO TEACHING SCIENCE IN ELEMENTARY SCHOOLS

UNIVERSITY OF OKLAHOMA, NORMAN

UNIVERSITY MICROFILMS, AND ARDOR, MICHIGAN

ED 021 721 NOT AVAILABLE FROM EDRS

67 101

*CURRICULUM DEVELOPMENT, *ELEMENTARY SCHOOL TEACHER, *ELEMENTARY SCHOOL SCIENCE, *INSTRUCTION, *TEACHER EDUCATION, COGNITIVE DEVELOPMENT, CRITICAL THUNKING, INSERVICE TEACHER EDUCATION, QUESTIONING TECHNIQUES, SCIENCE COURSE IMPROVEMENT PROJECT, TEACHER CHARACTERISTICS, TEACHING METHODS, TEACHING PROCEDURES, RESEARCH REPORTS, SCIENCE CURRICULUM IMPROVEMENT STUDY, 1967

76. SE 004 878

3

11 83 17

WITTWER, FRANKLIN ALFRED

AN EVALUATION OF THE NATIONAL SCIENCE FOUNDATION RESEARCH PARTICIPATION PROGRAM FOR HIGH SCHOOL SCIENCE TEACHERS AT THE UNIVERSITY OF WISCONSIN

UNIVERSITY OF WISCONSIN, MADISON

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

ED 023 582 NOT AVAILABLE FROM EDRS

67 113

*RESEARCH, *RESEARCH SKILLS, *SCIENCE EDUCATION, *SCIENCE INSTITUTES, *TEACHER EDUCATION, DOCTORAL THESES, GRADUATE STUDY, NATIONAL SCIENCE FOUNDATION, UNIVERSITY OF WISCONSIN, RESEARCH PARTICIPATION PROGRAM, SCIENCE PROCESS INVENTORY, ACADEMIC YEAR EXTENSION, 1967

77. SE 005 872

1

11 54 20

WRIGHT, KENNETH

A RADIO COURSE FOR PHYSICAL SCIENCE TEACHERS

SCHOOL SCIENCE AND MATHEMATICS

10 00 68

6

*EDUCATIONAL PROGRAMS, *PROGRAM DESCRIPTIONS, *RADIO TECHNOLOGY, *SCIENCE TEACHERS, *SCIENCE CCURSES, *TEACHER EDUCATION, CONTINUING EDUCATION, PHYSICAL SCIENCES, SCIENCE EQUIPMENT, SCIENCE MATERIALS, CENTRAL MICHIGAN UNIVERSITY

78. SE 004 060

3

11 83 17

YULO, RALPH JAMES

AN EXPLORATION OF THE FLANDERS SYSTEM OF INTERACTION ANALYSIS AS A SUPERVISORY DEVICE WITH SCIENCE INTERNS

HARVARD UNIVERSITY, CAMBRIDGE, MASSACHUSETTS

UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

ED 023 574

NOT AVAILABLE FROM EDRS

67 441

*INTERACTION PROCESS ANALYSIS, *STUDENT TEACHING, *TEACHER EDUCATION, *SCIENCE EDUCATION, DOCTORAL THESES, EVALUATION, SELF EVALUATION, SUPERVISORY METHODS, SUPERVISION, VERBAL COMMUNICATION, HARVARD UNIVERSITY, FLANDERS SYSTEM OF INTERACTION ANALYSIS, 1967

79. SE 004 237 3 11 85 20

ASSOCIATION FOR THE EDUCATION OF TEACHERS OF SCIENCE. COMPILATION OF PAPERS AND REPORTS FROM SESSIONS HELD IN CONJUNCTION WITH THE CONVENTION OF THE NATIONAL SCIENCE TEACHERS ASSOCIATION (NEW YORK CITY, APRIL 1, 2, 1966).

NATIONAL SCIENCE TEACHERS ASSOCIATION, WASHINGTON, D.C.

ED 017 471 MF \$0.25 EC \$2.75

66 53

*DOCTORAL PROGRAMS, *INSTRUCTION, *METHODS COURSES, *PROFESSIONAL EDUCATION,
*SCIENCE EDUCATION, *TEACHER EDUCATION, *TEACHER CERTIFICATION, EDTANY,
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11 95 03 3 SE 004 218 88. SCIENCE EDUCATION INFORMATION REPORT, BIBLIOGRAPHY 2 - TEFCHER EDUCATION ERIC INFORMATION ANALYSIS CENTER FOR SCIENCE EDUCATION, COLUMBUS, OHIO **EDRS** HC \$2.35 MF \$0.25 ED 015 879 12 00 67 *BIOLOGY, *CURRICULUM DEVELOPMENT, *COLLEGE SCIENCE, *CHEMISTRY, *EDUCATIONAL PROGRAMS, *ELEMENTARY SCHOOL SCIENCE, *EARTH SCIENCE, *PHYSICS, *PROGRAM DESCRIPTIONS, *PROGRAM FLALUATION, *SECONDARY SCHOOL SCIENCE. *TEACHER EDUCATION, GRADUATE STUDY, METHODS COURSES, MATHEMATICS EDUCATION, PHYSICAL SCIENCES, TEACHER CERTIFICATION, TEACHER CHARACTERISTICS

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11 09 17

CALLAHAN, LEROY G.

A STUDY OF KNOWLEDGE POSSESSED BY ELEMENTARY SCHOOL TEACHERS, IN-SERVICE AND IN-TRAINING, OF THE CULTURAL, PSYCHOLOGICAL, AND MATHEMATICAL FOUNDATIONS OF THE ELEMENTARY SCHOOL MATHEMATICS PROGRAM SYRACUSE UNIVERSITY, NEW YORK

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6. SE 005 092

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11 09 11

DAVIS, ROBERT B.

EXPLORATIONS IN MATHEMATICS, A TEXT FOR TEACHERS SYRACUSE UNIVERSITY, NEW YORK; WEBSTER COLLEGE, ST. LOJIS, MISSOURI ADDISON-WESLEY PUBLISHING COMPANY, READING, MASSACHUSETTS NOT AVAILABLE FROM EDRS ED 023 587

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FISHER, JOHN J.

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3

11 09 17

FISHER, JOHN J.; AND OTHERS

PRE-SERVICE AND IN-SERVICE EDUCATION IN MATHEMATICS OF COLORADO ELEMENTARY SCHOOL TEACHERS - A STATUS REPORT

COLORADO STATE DEPARTMENT OF EDUCATION, DENVER, COLORADO

EDRS

ED 023 576 MF \$0.25 HC \$0.40

10 00 65 6

*INSERVICE TEACHER EDUCATION, *MATHEMATICS, *PRESERVICE EDUCATION, ELEMENTARY SCHOOL MATHEMATICS, RESEARCH REPORTS, TEACHER EDUCATION, COLORADO, 1965

10. SE 004 528

3

11 09 29

FULBRIGHT, CARLETON B.; AND OTHERS

DESCRIPTIVE OUTLINE OF MISSGURI'S INSERVICE TEACHER EDUCATION PROGRAM IN ELEMENTARY MATHEMATICS

MISSOURI STATE DEPARTMENT OF EDUCATION, JEFFERSON CITY

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ED 018 398 MF \$0.25 HC \$0.60

66 10

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11 09 20

JOHNSON, DONAVAN A.

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11 91 17

KANE, ROBERT B.

USE OF THE SEMANTIC DIFFERENTIAL TECHNIQUE TO MEASURE PROSPECTIVE ELEMENTARY SCHOOL TEACHER ATTITUDE TOWARD MATHEMATICS AND OTHER SUBJECTS. FINAL REPORT PURDUE UNIVERSITY, LAFAYETTE, INDIANA

EDRS

ED 021 761 MF \$0.50 HC \$3.40

02 00 68 66

*ATTITUDES, *ELEMENTARY SCHOOL TEACHERS, *MATHEMATICS, *TEACHER ATTITUDES, *TEACHER EDUCATION, EVALUATION TECHNIQUES, LANGUAGE ARTS, RESEARCH REPORTS, SOCIAL STUDIES, PURDUE UNIVERSITY, INDIANA, 1968

(24)



14. SE 005 142 2

LEAKE, JOHN BENJAMIN

A STUDY OF ATTITUDES OF ELEMENTARY TEACHERS TOWARD SCIENCE OKLAHOMA STATE UNIVERSITY, STILLWATER UNIVERSITY MICROFILMS, ANN ARBOR, MICHIGAN

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*ATTITUDES, *SCIENTIFIC ATTITUDES, *TEACHER EDUCATION, *TEACHER ATTITUDES, DOCTORAL THESES, EXTENSION EDUCATION, ELEMENTARY SCHOOL TEACHERS, RESEARCH REPORTS, TEACHER CHARACTERISTICS, OKLAHOMA STATE UNIVERSITY, 1966

11 84 17

15. SE 004 380 1 11 09 17

MARTIN, BERNARD L. SPATIAL VISUALIZATION ABILITIES OF PROSPECTIVE MATHEMATICS TEACHERS JOURNAL OF RESEARCH IN SCIENCE TEACHING

58 9
*MATHEMATICS, *MATHEMATICS TEACHERS, *SPATIAL VISUALIZATION, *TEACHER
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3

11 09 17

POLLACK, HELEN

SCHOOL HATHEMATICS STUDY GROUP REPORT NO. 3, A FILM-FILM TEXT STUDY STANFORD UNIVERSITY, CALIFORNIA, SCHOOL MATHEMATICS STUDY GROUP **EDRS**

MF \$0.50 HC \$3.00 ED C21 757

> 58 67

*COMPARATIVE ANALYSIS, *ELEMENTARY SCHOOL TEACHERS, *INSERVICE TEACHER EDUCATION, *MATHEMATICS, *TEACHER EDUCATION, ACHIEVEMENT, ACADEMIC ACHIEVEMENT, CURRICULUM, CURRICULUM DEVELOPMENT, FILMS, INSTRUCTION, SCHOOL MATHEMATICS STUDY GROUP, NATIONAL SCIENCE FOUNDATION, 1967

19. SE 004 348

1

11 09 17

REYS, ROBERT E.

MATHEMATICAL COMPETENCIES OF ELEMENTARY EDUCATION MAJORS JOURNAL OF EDUCATIONAL RESEARCH

02 00 68

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11 09 17

ROSENBLOOM, PAUL C.; AND OTHERS

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MINNESOTA SCHOOL MATHEMATICS AND SCIENCE CENTER, UNIVERSITY OF MINNESOTA, MINNIAPOLIS **EDRS**

MF \$6.75 ED 021 707 HC \$8.45

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3

11 09 16

SPROSS, PATRICIA M.

ELEMENTARY ARITHMETIC AND LEARNING AIDS

GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C.

EDRS

HARD COPY NOT AVAILABLE ED 017 457 MF \$0.75

> 142 65

*ARITHMETIC, *CURRICULUM, *CURRICULUM GUIDES, *ELEMENTARY SCHOOL MATHEMATICS, *INSERVICE TEACHER EDUCATION, *INSTRUCTIONAL AIDS, *MATHEMATICS, *TEACHER EDUCATION 23. SE 004 929 1 11 09 20

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