

# Classified Index

## Volumes 3 and 4, 1972-73

### Author Index

- Alsbaugh, C. A. Identification of some components of computer programming aptitude. 3: 89-98, Mar. 1972.
- Armstrong, J. Representational modes as they interact with cognitive development and mathematical concept acquisition of the retarded to promote new mathematical learning. 3: 43-50, Jan. 1972.
- Austin, G. R., & Prevost, F. Longitudinal evaluation of mathematical computational abilities of New Hampshire's eighth and tenth graders, 1963-1967. 3: 59-64, Jan. 1972.
- Bausell, R. B., & Moody, W. B. Educational theory testing: A reply to Holz. 3: 186-88, May 1972.
- Bausell, R. B., Jenkins, J. R., & Moody, W. B. The effect of class size on the learning of mathematics: A parametric study with fourth-grade students. 4: 170-76, May 1973.
- Beamer, R. H., & Lemke, E. A. Effects of transfer of training of constant versus varied training, group size, and ability level, in elementary school mathematics. 4: 20-25, Jan. 1973.
- Bowers, R. G. The effect of triangle-pair configuration variation on achievement of selected classes of instructional objectives in plane geometry. 4: 110-13, Mar. 1973.
- Branca, N. A., & Kilpatrick, J. The consistency of strategies in the learning of mathematical structures. 3: 132-40, May 1972.
- Braswell, J., & Romberg, T. A. Achievement monitoring via item sampling: A practical data-gathering procedure for formative evaluation. 4: 262-70, Nov. 1973.
- Bright, G. W., Lovett, C. J., Peterson, J. C., & Thomas, H. L. The effect of organizers and knowledge of behavioral objectives on learning a mathematical concept. 4: 76-84, Mar. 1973.
- Bright, G. W. Some remarks on Levine's study of attitudes. 4: 126-28, Mar. 1973.
- Carey, R. L., & Steffe, L. P. Equivalence and order relations as interrelated by four- and five-year-old children. 3: 77-88, Mar. 1972.
- Collier, C. P. Prospective elementary teachers' intensity and ambivalence of beliefs about mathematics and mathematics instruction. 3: 155-63, May 1972.
- Cooney, T. J., & Henderson, K. B. Ways mathematics teachers help students organize knowledge. 3: 21-31, Jan. 1972.
- Davis, E. J. A study of the ability of school pupils to perceive and identify the plane sections of selected solid figures. 4: 132-40, May 1973.
- Farris, D. C. An explanation of selected relationships among the enactive, iconic, and symbolic modes of representation. 4: 104-5, Mar. 1973.
- Fennema, E. H. The relative effectiveness of a symbolic and a concrete model in learning a selected mathematical principle. 3: 233-38, Nov. 1972.
- Flora, B. V. Diagnosing selected behavior characteristics of teachers of secondary school mathematics. 3: 7-20, Jan. 1972.
- Gaston, J. A., & Kolb, J. R. A comparison of three strategies for teaching a selected mathematical concept to students in college algebra. 4: 177-86, May 1973.
- Gawronski, J. D. Inductive and deductive learning styles in junior high school mathematics: An exploratory study. 3: 239-47, Nov. 1972.
- Gilbert, L. E., & Romberg, T. A. The effect of training on length on the performance of kindergarten children on nonstandard but related tasks. 3: 69-75, Mar. 1972.
- Hansen, D. N., & Keats, J. B. Definitions and examples as feedback in a CAI stimulus-centered mathematics program. 3: 113-22, Mar. 1972.
- Harvey, J. G., & Romberg, T. A. Educational research in mathematics at the University of Wisconsin Research and Development Center for Cognitive Learning. 4: 243-50, Nov. 1973.
- Hatfield, L. L., & Kieren, T. E. Computer-assisted problem solving in school mathematics. 3: 99-112, Mar. 1972.
- Heimer, R. T., & Lottes, J. J. The theoretical model and a synopsis of the first two years of the research program. 4: 85-93, Mar. 1973.
- Heimer, R. T., et al. Toward a theory of sequencing: An integrated program of research. 4: 85-125, Mar. 1973.
- Henderson, K. B., & Cooney, T. J. Ways mathematics teachers help students organize knowledge. 3: 21-31, Jan. 1972.
- Hernandez, N. G. A model of classroom discourse for use in conducting aptitude-treatment interaction studies. 4: 161-69, May 1973.
- Hirschbuhl, J. J. An exploration of selected transitivity and conjunctive relationships among the enactive, iconic, and symbolic modes of representation. 4: 113-15, Mar. 1973.
- Holz, A. W. Comments on the effect of activity-oriented instruction. 3: 183-85, May 1972.
- Hopkins, L. V. An exploration of transivities formulated from a set of Piagetian-derived operations and their implications in traversing learning hierarchies. 4: 121-23, Mar. 1973.
- Hostetler, R. P. An exploration of the effect of selected sequence variables on student choice in the use of algorithms. 4: 115-18, Mar. 1973.
- Jenkins, J. R., Bausell, R. B., & Moody, W. B. The effect of class size on the learning of mathematics: A parametric study with fourth-grade students. 4: 170-76, May 1973.
- Jerman, M. Individualized instruction in problem solving in elementary school mathematics. 4: 6-19, Jan. 1973.
- Keats, J. B., & Hansen, D. N. Definitions and examples as feedback in a CAI stimulus-centered mathematics program. 3: 113-22, Mar. 1972.
- Keats, J. B. A reply to Kulm. 4: 190-92, May 1973.
- Kieren, T. E., & Hatfield, L. L. Computer-assisted problem solving in school mathematics. 3: 99-112, Mar. 1972.
- Kilpatrick, J., & Branca, N. A. The consistency of strategies in the learning of mathematical structures. 3: 132-40, May 1972.
- King, I. L. A formative development of an elementary school unit on proof. 4: 57-63, Jan. 1973.
- Klein, P. A. An exploration of selected relationships among the enactive, iconic, and symbolic modes of representation. 4: 94-103, Mar. 1973.
- Kolb, J. R., & Gaston, J. A. A comparison of three strategies for teaching a selected mathematical concept to students in college algebra. 4: 177-86, May 1973.

- Kratzer, R. O., & Willoughby, S. S. A comparison of initially teaching division employing the distributive and Greenwood algorithms with the aid of a manipulative material. 4: 197-204, Nov. 1973.
- Kulm, G. Some problems in a study of CAI feedback. 4: 187-89, May 1973.
- Lenke, E. A., & Beamer, R. H. Effects on transfer of training of constant versus varied training, group size, and ability level, in elementary school mathematics. 4: 20-25, Jan. 1973.
- Levine, G. Attitudes of elementary school pupils and their parents toward mathematics and other subjects of instruction. 3: 51-58, Jan. 1972.
- Lottes, J. J., & Heimer, R. T. The theoretical model and a synopsis of the first two years of the research program. 4: 85-93, Mar. 1973.
- Lovell, K. R. Intellectual growth and understanding mathematics. 3: 164-82, May 1972.
- Lovett, C. J., Bright, G. W., Peterson, J. C., & Thomas, H. L. The effect of organizers and knowledge of behavioral objectives on learning a mathematical concept. 4: 76-84, Mar. 1973.
- Montgomery, M. E. The interaction of three levels of aptitude determined by a teach-test procedure with two treatments related to area. 4: 271-78, Nov. 1973.
- Moody, W. B., & Bausell, R. B. Educational theory testing: A reply to Holz. 3: 186-88, May 1972.
- Moody, W. B., Bausell, R. B., & Jenkins, J. R. The effect of class size on the learning of mathematics: A parametric study with fourth-grade students. 4: 170-76, May 1973.
- Moser, J. M., Romberg, T. A., & Wiles, C. A. The relative effectiveness of two different instructional sequences designed to teach the addition and subtraction algorithm. 4: 251-62, Nov. 1973.
- Olander, H. T., & Robertson, H. C. The effectiveness of discovery and expository methods in the teaching of fourth-grade mathematics. 4: 33-44, Jan. 1973.
- Owens, D. T., & Steffe, L. P. Performance of kindergarten children on transitivity of three matching relations. 3: 141-54, May 1972.
- Paquette, G. A. An in-depth exploration of the role of iconic representations in the study of consequence of triangles. 4: 105-10, Mar. 1973.
- Peterson, J. C., Bright, G. W., Lovett, C. J., & Thomas, H. L. The effect of organizers and knowledge of behavioral objectives on learning a mathematical concept. 4: 76-84, Mar. 1973.
- Phillips, E. R. Validating learning hierarchies for sequencing mathematical tasks in elementary school mathematics. 4: 141-51, May 1973.
- Prevost, F., & Austin, G. R. Longitudinal evaluation of mathematical computational abilities of New Hampshire's eighth and tenth graders, 1963-1967. 3: 59-64, Jan. 1972.
- Robertson, H. C., & Olander, H. T. The effectiveness of discovery and expository methods in the teaching of fourth-grade mathematics. 4: 33-44, Jan. 1973.
- Romberg, T. A., & Braswell, J. Achievement monitoring via item sampling: A practical data-gathering procedure for formative evaluation. 4: 262-70, Nov. 1973.
- Romberg, T. A., & Harvey, J. G. Educational research in mathematics at the University of Wisconsin Research and Development Center for Cognitive Learning. 4: 243-50, Nov. 1973.
- Romberg, T. A. The effect of an advance organizer, cognitive set, and post organizer on the learning and retention of written materials. 4: 68-76, Mar. 1973.
- Romberg, T. A., & Gilbert, L. E. The effect of training on length on the performance of kindergarten children on nonstandard but related tasks. 3: 69-75, Mar. 1972.
- Romberg, T. A., Moser, J. M., & Wiles, C. A. The relative effectiveness of five different instructional sequences designed to teach the addition and subtraction algorithms. 4: 251-62, Nov. 1973.
- Romberg, T. A., & Shepler, J. Retention of probability concepts: A pilot study into the effects of mastery learning with sixth-grade students. 4: 26-32, Jan. 1973.
- Sawada, D. An assessment of a selected set of Piagetian-derived operators for the generation of effective learning hierarchies. 4: 118-21, Mar. 1973.
- Shepler, J., & Romberg, T. A. Retention of probability concepts: A pilot study into the effects of mastery learning with sixth-grade students. 4: 26-32, Jan. 1973.
- Steffe, L. P., & Carey, R. L. Equivalence and order relations as interrelated by four- and five-year-old children. 3: 77-88, Mar. 1972.
- Steffe, L. P., & Owens, D. T. Performance of kindergarten children on transitivity of three matching relations. 3: 141-54, May 1972.
- Suydam, M. N., & Weaver, J. F. Research on mathematics education (K-12) reported in 1971. 3: 196-232, Nov. 1972.
- Suydam, M. N., & Weaver, J. F. Research on mathematics education (K-12) reported in 1972. 4: 205-42, Nov. 1973.
- Szetela, W. The effects of test anxiety and success/failure on mathematics performance in grade eight. 4: 152-60, May 1973.
- Thomas, H. L., Bright, G. W., Lovett, C. J., & Peterson, J. C. The effect of organizers and knowledge of behavioral objectives on learning a mathematical concept. 4: 76-84, Mar. 1973.
- Usiskin, Z. P. The effects of teaching Euclidean geometry via transformations on student achievement and attitudes in tenth-grade geometry. 3: 249-59, Nov. 1972.
- Weaver, J. F., & Suydam, M. N. Research on mathematics education (K-12) reported in 1971. 3: 196-232, Nov. 1972.
- Weaver, J. F., & Suydam, M. N. Research on mathematics education (K-12) reported in 1972. 4: 205-42, Nov. 1973.
- Weaver, J. F. The symmetric property of the equality relation and young children's ability to solve open addition and subtraction sentences. 4: 45-56, Jan. 1973.
- Wiles, C. A., Moser, J. M., & Romberg, T. A. The relative effectiveness of five different instructional sequences designed to teach the addition and subtraction algorithms. 4: 251-62, Nov. 1973.
- Williford, H. J. A study of transformational geometry instruction in the primary grades. 3: 260-71, Nov. 1972.
- Willoughby, S. S., & Kratzer, R. O. A comparison of initially teaching division employing the distributive and Greenwood algorithms with the aid of a manipulative material. 4: 197-204, Nov. 1973.
- Wilson, J. W., & Romberg, T. A. The effect of an advance organizer, cognitive set, and post organizer on the learning and retention of written materials. 4: 68-76, Mar. 1973.

## Title Index

- Achievement monitoring via item sampling: A practical data-gathering procedure for formative evaluation. T. A. Romberg & J. Braswell. 4: 262-70, Nov. 1973.
- An assessment of a selected set of Piagetian-derived operations for the generation of effective learning hierarchies. D. Sawada. 4: 118-21, Mar. 1973.



- Attitudes of elementary school pupils and their parents toward mathematics and other subjects of instruction. G. Levine, 3: 51-58, Jan. 1972.
- Comments on the effect of activity-oriented instruction. A. W. Holz, 3: 183-85, May 1972.
- A comparison of initially teaching division employing the distributive and Greenwood algorithms with the aid of a manipulative material. R. O. Kratzer & S. S. Willoughby, 4: 197-204, Nov. 1973.
- A comparison of three strategies for teaching a selected mathematical concept to students in college algebra. J. A. Gaston & J. R. Kolb, 4: 177-86, May 1973.
- Computer-assisted problem solving in school mathematics. L. L. Hatfield & T. E. Kieren, 3: 99-112, Mar. 1972.
- The consistency of strategies in the learning of mathematical structures. N. A. Branca & J. Kilpatrick, 3: 132-40, May 1972.
- Definitions and examples as feedback in a CAI stimulus-centered mathematics program. J. B. Keats & D. N. Hansen, 3: 113-22, Mar. 1972.
- Diagnosing selected behavior characteristics of teachers of secondary school mathematics. B. V. Flora, Jr., 3: 7-20, Jan. 1972.
- Educational research in mathematics at the University of Wisconsin Research and Development Center for Cognitive Learning. T. A. Romberg & J. G. Harvey, 4: 243-50, Nov. 1973.
- Educational theory testing: A reply to Holz, W. B. Moody & R. B. Bausell, 3: 186-88, May 1972.
- The effect of an advance organizer, cognitive set, and post organizer on the learning and retention of written materials. T. A. Romberg & J. W. Wilson, 4: 68-76, Mar. 1973.
- The effect of class size on the learning of mathematics: A parametric study with fourth-grade students. W. B. Moody, R. B. Bausell & J. R. Jenkins, 4: 170-76, May 1973.
- The effect of organizers and knowledge of behavioral objectives on learning a mathematical concept. J. C. Peterson, H. L. Thomas, C. J. Lovett, & G. W. Bright, 4: 76-84, Mar. 1973.
- The effect of training on length on the performance of kindergarten children on nonstandard but related tasks. T. A. Romberg & L. E. Gilbert, 3: 69-75, Mar. 1972.
- The effect of triangle-pair configuration variation on achievement of selected classes of instructional objectives in plane geometry. R. G. Bowers, 4: 110-13, Mar. 1973.
- The effectiveness of discovery and expository methods in the teaching of fourth-grade mathematics. H. T. Olander & H. C. Robertson, 4: 33-44, Jan. 1973.
- The effects of teaching Euclidean geometry via transformations on student achievement and attitudes in tenth-grade geometry. Z. P. Usiskin, 3: 249-59, Nov. 1972.
- The effects of test anxiety and success failure on mathematics performance in grade eight. W. Szetela, 4: 152-60, May 1973.
- Effects on transfer of training of constant versus varied training, group size, and ability level, in elementary school mathematics. R. H. Beamer & E. A. Lemke, 4: 20-25, Jan. 1973.
- Equivalence and order relations as interrelated by four- and five-year-old children. L. P. Steffe & R. L. Carey, 3: 77-88, Mar. 1972.
- An exploration of the effect of selected sequence variables on student choice in the use of algorithms. R. P. Hostetler, 4: 115-18, Mar. 1973.
- An exploration of selected relationships among the enactive, iconic, and symbolic modes of representation. P. A. Klein, 4: 94-103, Mar. 1973.
- An exploration of selected relationships among the enactive, iconic, and symbolic modes of representation. D. C. Farris, 4: 104-5, Mar. 1973.
- An exploration of selected transitivity and conjunctive relationships among the enactive, iconic, and symbolic modes of representation. J. J. Hirschbuhl, 4: 113-15, Mar. 1973.
- An exploration of transitivity formulated from a set of Piagetian-derived operations and their implications in traversing learning hierarchies. L. V. Hopkins, 4: 121-23, Mar. 1973.
- A formative development of an elementary school unit of proof. I. L. King, 4: 57-63, Jan. 1973.
- Identification of some components of computer programming aptitude. C. A. Alspaugh, 3: 89-98, Mar. 1972.
- An in-depth exploration of the role of iconic representations in the study of congruence of triangles. G. A. Paquette, 4: 105-10, Mar. 1973.
- Individualized instruction in problem solving in elementary school mathematics. M. Jerman, 4: 6-19, Jan. 1973.
- Inductive and deductive learning styles in junior high school mathematics: An exploratory study. J. D. Gawronski, 3: 239-47, Nov. 1972.
- Intellectual growth and understanding mathematics. K. R. Lovell, 3: 164-82, May 1972.
- The interaction of three levels of aptitude determined by a teach-test procedure with two treatments related to area. M. E. Montgomery, 4: 271-78, Nov. 1973.
- Longitudinal evaluation of mathematical computational abilities of New Hampshire's eighth and tenth graders, 1963-1967. G. R. Austin & F. Prevost, 3: 59-64, Jan. 1972.
- A model of classroom discourse for use in conducting aptitude-treatment interaction studies. N. G. Hernandez, 4: 161-69, May 1973.
- Performance of kindergarten children on transitivity of three matching relations. D. T. Owens & L. P. Steffe, 3: 141-54, May 1972.
- Prospective elementary teachers' intensity and ambivalence of beliefs about mathematics and mathematics instruction. C. P. Collier, 3: 155-63, May 1972.
- The relative effectiveness of a symbolic and a concrete model in learning a selected mathematical principle. E. H. Fennema, 3: 233-38, Nov. 1972.
- The relative effectiveness of two different instructional sequences designed to teach the addition and subtraction algorithms. C. A. Wiles, T. A. Romberg, & J. M. Moser, 4: 251-62, Nov. 1973.
- A reply to Kulm, J. B. Keats, 4: 190-92, May 1973.
- Representational modes as they interact with cognitive development and mathematical concept acquisition of the retarded to promote new mathematical learning. J. R. Armstrong, 3: 43-50, Jan. 1972.
- Research on mathematics education (K-12) reported in 1971. M. N. Suydam & J. F. Weaver, 3: 196-232, Nov. 1972.
- Research on mathematics education (K-12) reported in 1972. M. N. Suydam & J. F. Weaver, 4: 205-42, Nov. 1973.
- Retention of probability concepts: A pilot study into the effects of mastery learning with sixth-grade students. T. A. Romberg & J. Shepler, 4: 26-32, Jan. 1973.
- Some problems in a study of CAI feedback. G. Kulm, 4: 187-89, May 1973.
- Some remarks on Levine's study of attitudes. G. W. Bright, 4: 126-28, Mar. 1973.
- A study of the ability of school pupils to perceive and identify the plane sections of selected solid figures. E. J. Davis, 4: 132-40, May 1973.
- A study of transformational geometry instruction in the primary grades. H. J. Williford, 3: 260-71, Nov. 1972.
- The symmetric property of the equality relation and young children's ability to solve open addition and subtraction sentences. J. F. Weaver, 4: 45-56, Jan. 1973.
- The theoretical model and a synopsis of the first two years of the research program. R. T. Heimer & J. J. Lottes, 4: 85-93, Mar. 1973.
- Toward a theory of sequencing: An integrated program of research. R. T. Heimer, et al., 4: 85-125.



Validating learning hierarchies for sequencing mathematical tasks in elementary school mathematics. E. R. Phillips. 4: 141-51, May 1973.  
Ways mathematics teachers help students organize knowledge. T. J. Cooney & K. B. Henderson. 3: 21-31, Jan. 1972.

## Subject Index

### ACHIEVEMENT

Achievement monitoring via item sampling: A practical data-gathering procedure for formative evaluation. 4: 262-70, Nov. 1973.  
The effect of triangle-pair configuration variation on achievement of selected classes of instructional objectives in plane geometry. 4: 110-13, Mar. 1973.  
The effects of teaching Euclidean geometry via transformations on student achievement and attitudes in tenth-grade geometry. 3: 249-59, Nov. 1972.  
The effects of test anxiety and success/failure on mathematics performance in grade eight. 4: 152-60, May 1973.  
Identification of some components of computer programming aptitude. 3: 89-98, Mar. 1972.  
Longitudinal evaluation of mathematical computational abilities of New Hampshire's eighth and tenth graders, 1963-1967. 3: 59-64, Jan. 1972.  
Representational modes as they interact with cognitive development and mathematical concept acquisition of the retarded to promote new mathematical learning. 3: 43-50, Jan. 1972.  
Validating learning hierarchies for sequencing mathematical tasks in elementary school mathematics. 4: 141-51, May 1973.

### ALGEBRA

A comparison of three strategies for teaching a selected mathematical concept to students in college algebra. 4: 177-86, May 1973.  
Definitions and examples as feedback in a CAI stimulus-centered mathematics program. 3: 113-22, Mar. 1972.

### APTITUDE AND ABILITY

Identification of some components of computer programming aptitude. 3: 89-98, Mar. 1972.  
The interaction of three levels of aptitude determined by a teach-test procedure with two treatments related to area. 4: 271-78, Nov. 1973.  
A model of classroom discourse for use in conducting aptitude-treatment interaction studies. 4: 161-169, May 1973.

### ATTITUDE

Attitudes of elementary school pupils and their parents toward mathematics and other subjects of instruction. 3: 51-58, Jan. 1972.  
The effectiveness of discovery and expository methods in the teaching of fourth-grade mathematics. 4: 33-44, Jan. 1973.  
The effects of teaching Euclidean geometry via attitudes in tenth-grade geometry. 3: 249-59, Nov. 1972.  
Prospective elementary teachers' intensity and ambivalence of beliefs about mathematics and mathematics instruction. 3: 155-63, May 1972.  
Some remarks on Levine's study of attitudes. 4: 126-28, Mar. 1973.

### COLLEGE MATHEMATICS

A comparison of three strategies for teaching a selected mathematical concept to students in college algebra. 4: 177-86, May 1973.  
Identification of some components of computer programming aptitude. 3: 89-98, Mar. 1972.

### COMPUTER-ORIENTED PROGRAMS

Computer-assisted problem solving in school mathematics. 3: 99-112, Mar. 1972.  
Definitions and examples as feedback in a CAI stimulus-centered mathematics program. 3: 113-22, Mar. 1972.  
Identification of some components of computer programming aptitude. 3: 89-98, Mar. 1972.  
A reply to Kulm. 4: 190-92, May 1973.  
Some problems in a study of CAI feedback. 4: 187-89, May 1973.

### CONCEPT FORMATION

A comparison of three strategies for teaching a selected mathematical concept to students in college algebra. 4: 177-86, May 1973.  
The consistency of strategies in the learning of mathematical structures. 3: 132-40, May 1972.  
The effect of training on length on the performance of kindergarten children on nonstandard but related tasks. 3: 69-75, Mar. 1972.  
Equivalence and order relations as interrelated by four- and five-year-old children. 3: 77-88, Mar. 1972.

### CONSERVATION (CONCEPT)

The effect of training on length on the performance of kindergarten children on nonstandard but related tasks. 3: 69-75, Mar. 1972.  
Equivalence and order relations as interrelated by four- and five-year-old children. 3: 77-88, Mar. 1972.  
Performance of kindergarten children on transitivity of three matching relations. 3: 141-54, May 1972.

### CURRICULUM

Achievement monitoring via item sampling: A practical data-gathering procedure for formative evaluation. 4: 262-70, Nov. 1973.  
An assessment of a selected set of Piagetian-derived operators for the generation of effective learning hierarchies. 4: 118-121, Mar. 1973.  
A formative development of an elementary school unit on proof. 4: 57-63, Jan. 1973.  
The theoretical model and a synopsis of the first two years of the research program. 4: 85-93, Mar. 1973.

## ELEMENTARY SCHOOL MATHEMATICS

- Attitudes of elementary school pupils and their parents toward mathematics and other subjects of instruction. 3: 51-58, Jan. 1972.
- A comparison of initially teaching division employing the distributive and Greenwood algorithms with the aid of a manipulative material. 4: 197-204, Nov. 1973.
- The effect of class size on the learning of mathematics: A parametric study with fourth-grade students. 4: 170-76, May 1973.
- The effectiveness of discovery and expository methods in the teaching of fourth-grade mathematics. 4: 33-44, Jan. 1973.
- Effects on transfer of training of constant versus varied training, group size, and ability level, in elementary school mathematics. 4: 20-25, Jan. 1973.
- A formative development of an elementary school unit on proof. 4: 57-63, Jan. 1973.
- Individualized instruction in problem solving in elementary school mathematics. 4: 6-19, Jan. 1973.
- The interaction of three levels of aptitude determined by a teach-test procedure with two treatments related to area. 4: 271-78, Nov. 1973.
- The relative effectiveness of a symbolic and a concrete model in learning a selected mathematical principle. 3: 233-38, Nov. 1972.
- A study of transformational geometry instruction in the primary grades. 3: 260-71, Nov. 1972.
- The symmetric property of the equality relation and young children's ability to solve open addition and subtraction sentences. 4: 45-56, Jan. 1973.
- Validating learning hierarchies for sequencing mathematical tasks in elementary school mathematics. 4: 141-51, May 1973.

## GEOMETRY

- The effect of triangle-pair configuration variation on achievement of selected classes of instructional objectives in plane geometry. 4: 110-13, Mar. 1973.
- The effects of teaching Euclidean geometry via transformations on student achievement and attitudes in tenth-grade geometry. 3: 249-59, Nov. 1972.
- An in-depth exploration of the role of iconic representations in the study of congruence of triangles. 4: 105-10, Mar. 1973.
- The interaction of three levels of aptitude determined by a teach-test procedure with two treatments related to area. 4: 271-78, Nov. 1973.
- A study of the ability of school pupils to perceive and identify the plane sections of selected solid figures. 4: 132-40, May 1973.
- A study of transformational geometry instruction in the primary grades. 3: 260-71 Nov. 1972.

## GROUPING

- The effect of class size on the learning of mathematics: A parametric study with fourth-grade students. 4: 170-76, May 1973.

## INSTRUCTION

- Comments on the effect of activity-oriented instruction. 3: 183-85, May 1972.
- A comparison of initially teaching division employing the distributive and Greenwood algorithms with the aid of a manipulative material. 4: 197-204, Nov. 1973.
- A comparison of three strategies for teaching a selected mathematical concept to students in college algebra. 4: 177-86, May 1973.
- Computer-assisted problem solving in school mathematics. 3: 99-112, Mar. 1972.
- Definitions and examples as feedback in a CAI stimulus-centered mathematics program. 3: 113-22, Mar. 1972.
- The effect of class size on the learning of mathematics: A parametric study with fourth-grade students. 4: 170-76, May 1973.
- The effect of organizers and knowledge of behavioral objectives on learning a mathematical concept. 4: 76-84, Mar. 1973.
- The effect of training on length on the performance of kindergarten children on nonstandard but related tasks. 3: 69-75, Mar. 1972.
- The effect of triangle-pair configuration variation on achievement of selected classes of instructional objectives in plane geometry. 4: 110-13, Mar. 1973.
- The effectiveness of discovery and expository methods in the teaching of fourth-grade mathematics. 4: 33-44, Jan. 1973.
- The effects of teaching Euclidean geometry via transformations on student achievement and attitudes. 3: 249-59, Nov. 1972.
- Effects of transfer of training of constant versus varied training, group size, and ability level, in elementary school mathematics. 4: 20-25, Jan. 1973.
- Equivalence and order relations as interrelated by four- and five-year-old children. 3: 77-88, Mar. 1972.
- An exploration of the effect of selected sequence variables on student choice in the use of algorithms. 4: 115-18, Mar. 1973.
- An exploration of selected relationships among the enactive, iconic, and symbolic modes of representation. 4: 104-5, Mar. 1973.
- An exploration of selected relationships among the enactive, iconic, and symbolic modes of representation. 4: 94-103, Mar. 1973.
- An exploration of selected transitivity and conjunctive relationships among the enactive, iconic, and symbolic modes of representation. 4: 113-15, Mar. 1973.
- An exploration of transitivity formulated from a set of Piagetian-derived operations and their implications in traversing learning hierarchies. 4: 121-23, Mar. 1973.
- A formulative development of an elementary school unit on proof. 4: 57-63, Jan. 1973.
- An in-depth exploration of the role of iconic representations in the study of congruence of triangles. 4: 105-10, Mar. 1973.
- Individualized instruction in problem solving in elementary school mathematics. 4: 6-19, Jan. 1973.
- Inductive and deductive learning styles in junior high school mathematics: An exploratory study. 3: 239-47, Nov. 1972.
- A model of classroom discourse for use in conducting aptitude-treatment interaction studies. 4: 161-69, May 1973.
- Prospective elementary teachers' intensity and ambivalence of beliefs about mathematics and mathematics instruction. 3: 155-63, May 1972.
- The relative effectiveness of a symbolic and a concrete model in learning a selected mathematical principle. 3: 233-38, Nov. 1972.
- The relative effectiveness of two different instructional sequences designed to teach the addition and subtraction algorithms. 4: 251-62, Nov. 1973.
- Representational modes as they interact with cognitive development and mathematical concept. 3: 43-50, Jan. 1972.



- Retention of probability concepts: A pilot study into the effects of mastery learning with sixth-grade students. 4: 26-32, Jan. 1973.
- Some problems in a study of CAI feedback. 4: 187-89, May 1973.
- A study of transformational geometry instruction in the primary grades. 3: 260-71, Nov. 1972.
- The theoretical model and a synopsis of the first two years of the research program. 4: 85-93, Mar. 1973.
- Toward a theory of sequencing: An integrated program of research. 4: 85-125.
- Ways mathematics teachers help students organize knowledge. 3: 21-31, Jan. 1972.

#### INSTRUCTIONAL MATERIALS

- An exploration of selected relationships among the enactive, iconic, and symbolic modes of representation. 4: 104-5, Mar. 1973.
- An exploration of selected relationships among the enactive, iconic, and symbolic modes of representation. 4: 94-103, Mar. 1973.
- An exploration of selected transitivity and conjunctive relationships among the enactive, iconic, and symbolic modes of representation. 4: 113-15, Mar. 1973.

#### INTERACTION

- The interaction of three levels of aptitude determined by a teach-test procedure with two treatments related to area. 4: 271-78, Nov. 1973.
- A model of classroom discourse for use in conducting aptitude-treatment interaction studies. 4: 161-69, May 1973.

#### LEARNING

- An assessment of a selected set of Piagetian-derived operators for the generation of effective learning hierarchies. 4: 118-21, Mar. 1973.
- The consistency of strategies in the learning of mathematical structures. 3: 132-40, May 1972.
- Definitions and examples as feedback in a CAI stimulus-centered mathematics program. 3: 113-22, Mar. 1972.
- The effect of an advance organizer, cognitive set, and post organizer on the learning and retention of written materials. 4: 68-76, Mar. 1973.
- The effect of organizers and knowledge of behavioral objectives on learning a mathematical concept. 4: 76-84, Mar. 1973.
- The effects on transfer of training of constant versus varied training, group size, and ability level, in elementary school mathematics. 4: 20-25, Jan. 1973.
- An exploration of the effect of selected sequence variables on student choice in the use of algorithms. 4: 115-18, Mar. 1973.
- An exploration of selected relationships among the enactive, iconic, and symbolic modes of representation. 4: 104-5, Mar. 1973.
- An exploration of selected relationships among the enactive, iconic, and symbolic modes of representation. 4: 94-103, Mar. 1973.
- An exploration of selected transitivity and conjunctive relationships among the enactive, iconic, and symbolic modes of representation. 4: 113-15, Mar. 1973.
- An exploration of transivities formulated from a set of Piagetian-derived operations and their implications in traversing learning hierarchies. 4: 121-23, Mar. 1973.
- An in-depth exploration of the role of iconic representations in the study of congruence of triangles. 4: 105-10, Mar. 1973.
- Inductive and deductive learning styles in junior high school mathematics: An exploratory study. 3: 239-47, Nov. 1972.
- Intellectual growth and understanding mathematics. 3: 164-82, May 1972.
- Performance of kindergarten children on transitivity of three matching relations. 3: 141-54, May 1972.
- The relative effectiveness of a symbolic and a concrete model in learning a selected mathematical principle. 3: 233-38, Nov. 1972.
- Retention of probability concepts: A pilot study into the effects of mastery learning with sixth-grade students. 4: 26-32, Jan. 1973.
- A study of the ability of school pupils to perceive and identify the plane sections of selected solid figures. 4: 132-40, May 1973.
- The symmetric property of the equality relation and young children's ability to solve open addition and subtraction sentences. 4: 45-56, Jan. 1973.
- Toward a theory of sequencing: An integrated program of research. 4: 85-125.
- Validating learning hierarchies for sequencing mathematical tasks in elementary school mathematics. 4: 141-51, May 1973.

#### MANIPULATIVE MATERIALS

- Comments on the effect of activity-oriented instruction. 3: 183-85, May 1972.
- A comparison of initially teaching division employing the distributive and Greenwood algorithms with the aid of a manipulative material. 4: 197-204, Nov. 1973.
- The relative effectiveness of a symbolic and a concrete model in learning a selected mathematical principle. 3: 233-38, Nov. 1972.
- Representational modes as they interact with cognitive development and mathematical concept acquisition of the retarded to promote new mathematical learning. 3: 43-50, Jan. 1972.
- A study of the ability of school pupils to perceive and identify the plane sections of selected solid figures. 4: 132-40, May 1973.

#### NEEDED RESEARCH

- Educational research in mathematics at the University of Wisconsin Research and Development Center for Cognitive Learning. 4: 243-50, Nov. 1973.
- The theoretical model and a synopsis of the first two years of the research program. 4: 85-93, Mar. 1973.

#### NUMBER CONCEPTS AND SYSTEMS

- A comparison of initially teaching division employing the distributive and Greenwood algorithms with the aid of a manipulative material. 4: 197-204, Nov. 1973.
- Longitudinal evaluation of mathematical computational abilities of New Hampshire's eighth and tenth graders, 1963-1967. 3: 59-64, Jan. 1972.
- Performance of kindergarten children on transitivity of three matching relations. 3: 141-54, May 1972.
- The relative effectiveness of two different instructional sequences designed to teach the addition and subtraction algorithms. 4: 251-62, Nov. 1973.
- The symmetric property of the equality relation and young children's ability to solve open addition and subtraction sentences. 4: 45-56, Jan. 1973.

## OBJECTIVES

- The effect of an advance organizer, cognitive set, and post organizer on the learning and retention of written materials. 4: 68-76, Mar. 1973.  
The effect of organizers and knowledge of behavioral objectives on learning a mathematical concept. 4: 76-84, Mar. 1973.  
The effect of triangle-pair configuration variation on achievement of selected classes of instructional objectives in plane geometry. 4: 110-13, Mar. 1973.

## PIAGETIAN RESEARCH

- An assessment of a selected set of Piagetian-derived operators for the generation of effective learning hierarchies. 4: 118-21, Mar. 1973.  
Equivalence and order relations as interrelated by four- and five-year-old children. 3: 77-88, Mar. 1972.  
An exploration of transitivity formulated from a set of Piagetian-derived operations and their implications in traversing learning hierarchies. 4: 121-23, Mar. 1973.  
Intellectual growth and understanding mathematics. 3: 164-82, May 1972.  
A study of the ability of school pupils to perceive and identify the plane sections of selected solid figures. 4: 132-40, May 1973.

## PRESCHOOL MATHEMATICS

- Equivalence and order relations as interrelated by four- and five-year-old children. 3: 77-88, Mar. 1972.

## PROBLEM SOLVING

- Computer-assisted problem solving in school mathematics. 3: 99-112, Mar. 1972.  
An exploration of the effect of selected sequence variables on student choice in the use of algorithms. 4: 115-18, Mar. 1973.  
Individualized instruction in problem solving in elementary school mathematics. 4: 6-19, Jan. 1973.  
Inductive and deductive learning styles in junior high school mathematics: An exploratory study. 3: 239-47, Nov. 1972.

## PROOFS AND LOGIC

- A formative development of an elementary school unit on proof. 4: 57-63, Jan. 1973.  
Ways mathematics teachers help students organize knowledge. 3: 21-31, Jan. 1972.

## RESEARCH CRITIQUES

- Comments on the effect of activity-oriented instruction. 3: 183-85, May 1972.  
Educational theory testing: A reply to Holz. 3: 186-88, May 1972.  
A reply to Kulm. 4: 190-92, May 1973.  
Some problems in a study of CAI feedback. 4: 187-89, May 1973.  
Some remarks on Levine's study of attitudes. 4: 126-28, Mar. 1973.

## RESEARCH METHODOLOGY

- Comments on the effect of activity-oriented instruction. 3: 183-85, May 1972.  
Educational research in mathematics at the University of Wisconsin Research and Development Center for Cognitive Learning. 4: 243-50, Nov. 1973.  
Educational theory testing: A reply to Holz. 3: 186-88, May 1972.  
A reply to Kulm. 4: 190-92, May 1973.  
Some problems in a study of CAI feedback. 4: 187-89, May 1973.  
Some remarks on Levine's study of attitudes. 4: 126-28, Mar. 1973.  
The theoretical model and a synopsis of the first two years of the research program. 4: 85-93, Mar. 1973.

## RESEARCH REVIEWS

- Educational research in mathematics at the University of Wisconsin Research and Development Center for Cognitive Learning. 4: 243-50, Nov. 1973.  
Intellectual growth and understanding mathematics. 3: 164-82, May 1972.  
Research on mathematics education (K-12) reported in 1971. 3: 196-232, Nov. 1972.  
Research on mathematics education (K-12) reported in 1972. 4: 205-42, Nov. 1973.

## RETENTION

- The effect of an advance organizer, cognitive set, and post organizer on the learning and retention of written materials. 4: 68-76, Mar. 1973.  
The effect of organizers and knowledge of behavioral objectives on learning a mathematical concept. 4: 76-84, Mar. 1973.  
The effectiveness of discovery and expository methods in the teaching of fourth-grade mathematics. 4: 33-44, Jan. 1973.  
Retention of probability concepts: A pilot study into the effects of mastery learning with sixth-grade students. 4: 26-32, Jan. 1973.  
Validating learning hierarchies for sequencing mathematical tasks in elementary school mathematics. 4: 141-51, May 1973.

## SECONDARY SCHOOL MATHEMATICS

- Computer-assisted problem solving in school mathematics. 3: 99-112, Mar. 1972.  
The effects of teaching Euclidean geometry via transformations on student achievement and attitudes in tenth-grade geometry. 3: 249-59, Nov. 1972.  
Inductive and deductive learning styles in junior high school mathematics: An exploratory study. 3: 239-47, Nov. 1972.  
Research on mathematics education (K-12) reported in 1971. 3: 196-232, Nov. 1972.  
Research on mathematics education (K-12) reported in 1972. 4: 205-42, Nov. 1973.

## SEQUENCING

- An assessment of a selected set of Piagetian-derived operators for the generation of effective learning hierarchies. 4: 118-21, Mar. 1973.  
An exploration of the effect of selected sequence variables on student choice in the use of algorithms. 4: 115-18, Mar. 1973.  
An exploration of transitivity formulated from a set of Piagetian-derived operations and their implications in traversing learning hierarchies. 4: 121-23, Mar. 1973.  
The relative effectiveness of two different instructional sequences designed to teach the addition and subtraction algorithms. 4: 251-62, Nov. 1973.  
The theoretical model and a synopsis of the first two years of the research program. 4: 85-93, Mar. 1973.



Toward a theory of sequencing: An integrated program of research. 4: 85-125, Mar. 1973.  
Validating learning hierarchies for sequencing mathematical tasks in elementary school mathematics. 4: 141-51, May 1973.

#### STUDENTS

Attitudes of elementary school pupils and their parents toward mathematics and other subjects of instruction. 3: 51-58, Jan. 1972.  
The effects of test anxiety and success/failure on mathematics performance in grade eight. 4: 152-60, May 1973.  
Inductive and deductive learning styles in junior high school mathematics: An exploratory study. 3: 239-47, Nov. 1972.

#### TEACHERS

Diagnosing selected behavior characteristics of teachers of secondary school mathematics. 3: 7-20, Jan. 1972.  
A model of classroom discourse for use in conducting aptitude-treatment interaction studies. 4: 161-69, May 1973.  
Prospective elementary teachers' intensity and ambivalence of beliefs about mathematics and mathematics instruction. 3: 155-63, May 1972.  
Ways mathematics teachers help students organize knowledge. 3: 21-31, Jan. 1972.

#### TESTS

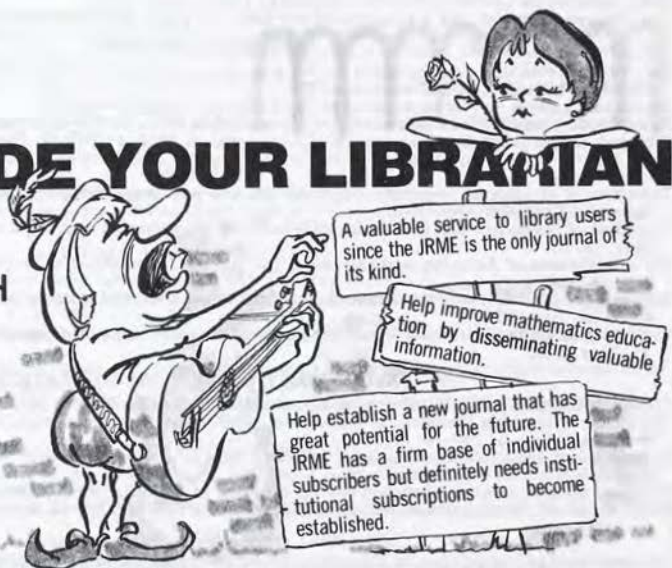
Achievement monitoring via item sampling: A practical data-gathering procedure for formative evaluation. 4: 262-70, Nov. 1973.  
Comments on the effect of activity-oriented instruction. 3: 183-85, May 1972.  
Diagnosing selected behavior characteristics of teachers of secondary school mathematics. 3: 7-20, Jan. 1972.  
Educational theory testing: A reply to Holz. 3: 186-88, May 1972.  
The effects of test anxiety and success/failure on mathematics performance in grade eight. 4: 152-60, May 1973.

#### TRANSFER OF TRAINING

The effect of training on length on the performance of kindergarten children on nonstandard but related tasks. 3: 69-75, Mar. 1972.  
Effects on transfer of training of constant versus varied training, group size, and ability level, in elementary school mathematics. 4: 20-25, Jan. 1973.

## SERENADE YOUR LIBRARIAN

WITH THE VALUES OF  
SUBSCRIBING TO THE  
JOURNAL FOR RESEARCH  
IN MATHEMATICS  
EDUCATION (JRME).



A valuable service to library users since the JRME is the only journal of its kind.

Help improve mathematics education by disseminating valuable information.

Help establish a new journal that has great potential for the future. The JRME has a firm base of individual subscribers but definitely needs institutional subscriptions to become established.

Sing our praises and show your JRME to your librarian. Since the JRME is a new journal, your librarian probably does not know about it.



**THE NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS**

1906 Association Drive, Reston, Virginia 22091

A BROCHURE LISTING ALL NCTM PUBLICATIONS IS FREE ON REQUEST.