

**NATIONAL ASSOCIATION  
FOR RESEARCH  
IN SCIENCE TEACHING**

**THE IMPACT OF LEARNING PARADIGMS  
ON  
TEACHING AND RESEARCH**

**1979 NARST ANNUAL MEETING  
ATLANTA, GEORGIA  
ATLANTA HILTON  
March 21 – 23, 1979**

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PROGRAM COMMITTEE

John W. Renner, Chairman	University of Oklahoma
Patricia Blosser	Ohio State University
William Holliday	University of Calgary
William Capie	University of Georgia
James A. Shymansky	University of Iowa
Arthur White	Ohio State University

FUTURE MEETINGS OF NARST

1980	With AERA	Boston
1981	With NSTA	New York

## REGISTRATION INFORMATION

Registration for the Meeting will be conducted in the North Wing Prefunction Foyer on the Second Floor of the Atlanta Hilton. Both persons who have preregistered and those who have not will be able to obtain the following at the registration table:

Book of Abstracts of Papers

Registration Badge

Ticket to the Luncheon

The registration fee for members and non-members of NARST includes a ticket to the annual luncheon. The annual luncheon program contains the presentation of the annual JRST award, an award for completed research and a special question and answer session regarding the presentations made at General Session II.

## PLACEMENT SERVICE

A placement desk and bulletin boards will be set up in the registration area. This will provide for the posting of information about jobs available and personnel seeking employment. Interested parties may post information and addresses on the bulletin board and arrange interviews on their own. For further information, interested parties should see or contact NARST's Coordinator of Placement:

Dr. John E. Penick  
University of Iowa  
Iowa City, Iowa 52242



NARST OFFICERS

1978-79

PRESIDENT

James R. Okey  
University of Georgia  
Athens, GA 30602

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University of Oklahoma  
Norman, OK 73069

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Columbus, OH 43210

EDITOR, JOURNAL OF RESEARCH IN SCIENCE TEACHING

David P. Butts  
University of Georgia  
Athens, GA 30602

BOARD MEMBERS

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PRESIDENTS OF NARST

1928	W.L. Eikenberry	1955	Kenneth E. Anderson
1929	W.L. Eikenberry	1956	W.C. Van Deventer
1930	W.L. Eikenberry	1957	Waldo W. Blanchet
1931	Elliot R. Downing	1958	Nathan S. Washton
1932	Elliot R. Downing	1959	Thomas P. Fraser
1933	Francis D. Curtis	1960	Vaden W. Miles
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1938	Hanor A. Webb	1965	Frederic B. Dutton
1939	Ralph Powers	1966	Milton O. Pella
1940	Otis W. Caldwell	1967	H. Craig Sipe
1941	Harry A. Carpenter	1968	John M. Mason
1942	G.P. Cahoon	1969	Joseph D. Novak
1943	Florence G. Billig	1970	Willard J. Jacobson
1944	Florence G. Billig	1971	Paul D. Hurd
1945	Florence G. Billig	1972	Frank X. Sutman
1946	C.L. Thiele	1973	J. David Lockard
1947	Earl R. Glenn	1974	Wayne W. Welch
1948	Ira C. Davis	1975	Robert E. Yager
1949	Joe Young West	1976	Ronald D. Anderson
1950	N. Eldred Bingham	1977	O. Roger Anderson
1951	Betty Lockwood	1978	Roger G. Olstad
1952	Betty Lockwood	1979	James R. Okey
1953	J. Darrell Barnard		
1954	George C. Mallinson		

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Sherwood Fawcett  
Craig Sipe

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J.R. Mayor  
Ragy Mitias  
Donald G. Peterson  
Ronald J. Raven  
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Ruth L. Roche  
Edward Victor  
Nathan S. Washton  
Helen N. Weekes  
Paul A. Wilkinson

ROOM LOCATION

<u>Room</u>	<u>Floor</u>
Prefunction Foyer	Second
Cabinet	Fourth
DeKalb	Second
Gwinnett	Second
Paulding	Second
Fayette	Second
Newton	Second
Henry	Second
Rockdale	Second
Forsythe	Second
Crystal Ballroom II Parlors E & F	Lobby
Director	Fourth
Board	Fourth
Grand Ballroom A	Second
Crystal Ballroom I Parlors B,C, & D	Lobby
Embassy	Fourth



2:45 p.m. - 3:45 p.m.

SESSION A-2

Room: Newton  
Second Floor

Title: Perception and Student Behavior

Evaluator: John Lutz  
National Technical Institute  
For The Deaf  
Rochester, NY 14623

Presider: Michael R. Abraham  
University of Oklahoma  
Norman, OK 73019

Interpretations of Observations of Motion and Semantic  
Knowledge Structures of Students at Four Grade Levels

Leo Klopfer & Audrey B. Champagne  
University of Pittsburgh  
Pittsburgh, PA 15260

Student Perceptions of Courses and  
Solutions of Environmental Problems

R. L. Doran & S. J. Alaimo  
SUNY Buffalo  
Amherst, NY 14260

A Study of The Effect of Science Knowledge and Coping  
Strategies Related to Stress on Student Behavior

Marianne Betkouski  
University of North Florida  
Jacksonville, FL 32216

2:45 p.m. - 3:45 p.m.

SESSION A-3

Room: Henry  
Second Floor

Title: Teacher Characteristics

Evaluator: Gordon Johnson  
Northern Arizona University  
Flagstaff, AZ 86011

Presider: Leon Ukens  
Towson State University  
Baltimore, MD 21204

Development and Validation of An Instrument to  
Assess Teachers' Conceptions of Scientific Theories

Joseph Cotham  
Michigan State University  
East Lansing, MI 48824

The Effects of Knowledge on Elementary Science Inquiry Teaching

Daniel Dobey  
West Virginia State College  
Shepherdstown, WV 25443

Conceptions of Heat-Related Phenomena Held By  
Prospective Elementary School Teachers

Carl Naegele & Joseph Cotham  
Michigan State University  
East Lansing, MI 48824

2:45 p.m. - 3:45 p.m.

SESSION A-4

Room: Rockdale  
Second Floor

Title: Paper Set

Evaluator: Irving Williams  
Nassau Community College  
Garden City, NY 11530

President: Keith Kennedy  
St. Cloud State University  
St. Cloud, Minnesota 56301

Research Methodology for Representing the Strategies Sixth Grade  
Children Use in Finding Relations Between Variables

Judith VanKirk  
Cornell University  
Ithaca, NY 14850

Fred Finley  
University of Wisconsin-Madison  
Madison, Wisconsin 53706

Judy H. Dennison & Edward Smith  
Michigan State University  
East Lansing, Michigan 48823

2:45 p.m. - 3:45 p.m.

SESSION A-5

Room: Forsythe  
Second Floor

Title: Piagetian Research

Evaluator: Craig Sipe  
P.O. Box 7  
New York, NY 12077

President: Claudia Douglass  
Central Michigan University  
Mt. Pleasant, MI 48859

A Method of Scoring Piaget's Shadows Task

Diane Leasure, Dale Baker, & Walt Lockwood  
Rutgers University  
New Brunswick, NJ 08903

The Effect of Small Group Teaching on Acquisition  
and Transfer of Nonvisual Seriation Abilities

Michael Padilla  
University of Georgia  
Athens, GA 30602

Lloyd Ollila  
University of Victoria  
British Columbia  
Canada

The Effect of a Weighted Scoring System on the  
Construct Validity of the Piagetian Logical Operations Test

John Staver  
DePaul University  
Chicago, Illinois 60614

Dorothy L. Gabel  
Indiana University  
Bloomington, IN 47401

4:00 p.m. - 5:00 p.m.

SESSION B-1

Room: Fayette  
Second Floor

Title: Paper Set

Evaluator: June Paradise Maul  
Rutgers University  
New Brunswick, NJ 08903

President: Frank Sullivan  
Salem State College  
Salem, MA 01970

Predictors of Science and Mathematics Achievement  
and Science Career Expectations of Innercity Adolescents

Mae Lee, Fletcher Watson, Theresa Jordan &  
Tina Jacobowitz  
New York University  
New York, NY 10003

4:00 p.m. - 5:00 p.m.

SESSION B-2

Room: Newton  
Second Floor

Title: Student Characteristics and  
Performance

Evaluator: F. David Boulanger  
University of Illinois  
at Chicago Circle  
Chicago, IL 60680

Presider: Bruce Tulloch  
The Packer Collegiate Institute  
Brooklyn, NY 11201

The Mental Representation of 3-D Shape Conceptualized From 2-D  
Perspective Views by Sixth and Eighth Grade Students

Dan Jones  
Southern Illinois University  
at Carbondale  
Belleville, IL 62223

Field Dependence/Independence, Logic, Space  
Perception and Science Achievement

Leslie Wormack  
Ramapo College of New Jersey  
Mahwah, NJ 07430

Intellectual Achievement Responsibility, Spatial Ability,  
and Sex as Factors Influencing Performance in Regents Biology

William Doody  
Syracuse University  
Syracuse, NY 13210

4:00 p.m. - 5:00 p.m.

SESSION B-3

Room: Henry  
Second Floor

Title: Pre-service Teacher Education

Evaluator: Emmett Wright  
University of Maryland  
College Park, MD 20742

Presider: Morris Enyeart  
Rutgers University  
New Brunswick, NJ 08903

The Effects of Preservice Education Program Model  
on Preservice Model Behavior

Dennis Sunal  
West Virginia University  
Morgantown, WV 26506

An Investigation of Three Approaches for Science Methods  
Instruction of Pre-service Elementary Teachers

Willis Horak  
The University of Arizona  
Tucson, AZ 85721

Achievement of Teaching Competencies by  
Secondary Science Teachers

James Okey & William Capie  
University of Georgia  
Athens, GA 30602

4:00 p.m. - 5:00 p.m.

SESSION B-4

Room: Rockdale  
Second Floor

Title: Symposium

Evaluator: Robert Hayward  
Fernbank Science Center  
Atlanta, GA 30307

Presider: R. D. Sherwood  
Indiana University  
Bloomington, IN 47405

Operations Research Models for Quantifying the  
Structure of Behavior Sequences

David W. Kopp & Michael D. Duffy  
University of Pittsburgh  
Pittsburgh, PA 15260

4:00 p.m. - 5:00 p.m.

SESSION B-5

Room: Forsythe  
Second Floor

Title: General Research

Evaluator: Glenn D. Berkheimer  
Michigan State University  
E. Lansing, MI 48824

Presider: Stephen F. Godomsky, Jr.  
University of Maine  
Farmington, ME 04938

The Influence of Concrete and Formal Operational Development  
on the Opinions Secondary School Students  
Have on the Quality of the Environment

Gabriel Ziccarelli  
University of Pittsburgh  
Pittsburgh, PA 15260

The Science Curriculum Improvement Study  
and Student Attitudes

Jane Bowyer  
Mills College  
Oakland, CA 94613

Larry Lowery  
University of California  
Berkeley, CA 94720

Mike Padilla  
University of Georgia  
Athens, GA 30601

A Comparison of Perceptions of Some Basic Science  
Education Attitudes



8:30 a.m. - 9:30 a.m.

SESSION C-1

Room: Fayette  
Second Floor

Title: Instruction

Evaluator: Donald Riechard  
Emory University  
Atlanta, GA 30322

Presenter: Rebecca Halyard  
Clayton Junior College  
Morrow, GA 30260

Predicting Success in a Non-Calculus Junior College Physics Course

Brooke Fridmore  
Clayton Junior College  
Morrow, Georgia 30260

Edward C. Lucy  
Georgia State University  
Atlanta, GA 30303

Genetics Instruction: Audio Tutorial Laboratory  
Approach Compared to a Traditional Method

Jean Ross  
Springfield College  
Springfield, MA 01109

Leverne Thelen  
University of Massachusetts  
Boston, MA 02116

The Role of the Laboratory in Introductory  
College Biology Courses

Janice Lee & Norman D. Anderson  
North Carolina University  
Raleigh, NC 27607

8:30 a.m. - 9:30 a.m.

SESSION C-2

Room: Newton  
Second Floor

Title: General Research

Evaluator: Gary Isham  
Edmonds Community College  
Lynnwood, WA 98036

Presenter: Daniel Sheldon  
University of Iowa  
Iowa City, IA 52242

The Effectiveness of Science Supervisors and Their  
Membership Within a Faculty

William Ritz  
California State University  
Long Beach, CA 90840

Jane G. Cashell  
Syracuse University  
Syracuse, NY 13210

Future Supply and Demand for Physical Science Teachers in Kansas

William La Shier  
University of Kansas  
Lawrence, KS 66045

Five Years of Achievement in ISCS Level II

Thomas McDuffie  
St. Joseph's University  
Philadelphia, PA 19131

8:30 a.m. - 9:30 a.m.

SESSION C-3

Room: Henry  
Second Floor

Title: Paper Set

Evaluator: Vincent Lunetta  
University of Iowa  
Iowa City, IA 52242

President: Eugene Gennaro  
University of Minnesota  
Minneapolis, MN 55455

Follow-Up Studies in Teacher Education: Models for Teacher Evaluation

Patricia Blosser & Robert W. Howe  
The Ohio State University  
Columbus, Ohio 43210

John E. Penick  
The University of Iowa  
Iowa City, Iowa 52242

Jerry B. Ayers  
Tennessee Technological University  
Cookeville, TN 38501

J. Dudley Herron  
Purdue University  
West Lafayette, IN 47907

8:30 a.m. - 9:30 a.m.

SESSION C-4

Room: Rockdale  
Second Floor

Title: Learning

Evaluator: Lowell Bethel  
University of Texas  
at Austin  
Austin, TX 78712

President: Jose L. Vinelli  
Florida Dept. of Education  
Tallahassee, FL 32304

The Influence of the Reflective/Impulsive Dimension on Problem  
Solving Skills in Elementary School Science

K. G. Jacknicke  
University of Alberta  
Edmonton, Alberta  
Canada T6G 2G5

Differential Response to Prompting and Confirmation in the  
Acquisition of an Inductively Presented Biologic Concept

John Koran  
University of Florida  
Gainesville, FL 32611

Preconcepts and Proactive Inhibition in Learning Science

Gideon Carmi  
Hebrew University  
5 Ethiopia St.  
Jerusalem, Israel

8:30 a.m. - 10:45 a.m.

SESSION C-5

Room: Forsythe  
Second Floor

Title: Techniques and Procedures of  
Research



9:45 a.m. - 10:45 a.m.

SESSION D-3

Room: Henry  
Second Floor

Title: Inservice Teacher Education

Evaluator: Paul Marino  
Boston University  
Boston, MA 02215

Presenter: John Balling  
Chesapeake Bay Center for  
Environmental Studies  
Edgewater, MD 21037

The Effects of an Academic Year Workshop on Energy Upon the Understanding of Energy Alternatives and Their Economic and Political-Social Ramifications and Selected Energy Related Attitudes of Secondary Science Teacher Participants

Joy Lindbeck  
The University of Akron  
Akron, OH 44325

An Analysis of Outcomes in an Energy Education Workshop for Junior and Senior High School Teachers of Science

Lynn Glass  
Iowa State University  
Ames, IA 50011

Effectiveness of a Metric Leader Training Project  
John Butzow & Bernard Yvon  
University of Maine  
Orono, Maine 04473

9:45 a.m. - 10:45 a.m.

SESSION D-4

Room: Rockdale  
Second Floor

Title: Symposium

Evaluator: Frank Crawley  
University of Texas  
Austin, TX 78712

Presenter: W. D. Moorehead  
1314 Jones Street  
Fort Valley, GA 31030

A Symposium on Innovative Approaches to Data Collection

Willard Jacobson & Gary Bates  
T.C. Columbia University  
New York, NY 10027

Kelvin C. James  
Harlem Hospital  
New York, NY 10001

Richard J. Andren  
Montgomery County Community  
College  
Blue Bell, PA 19422

Mitchell E. Batoff  
Jersey City State College  
Jersey City, NJ 07305

8:30 a.m. - 10:45 a.m.

SESSION D-5

Room: Forsythe  
Second Floor

Title: Techniques and Procedures  
of Research

Leader: Ann Howe  
Syracuse University  
Syracuse, NY 13210

(continuation of Session C-5)



Science Teachers' Opinions Relative to the Importance  
and Perceived Achievability of Selected Goals of Science Education

Ronald Rowe  
Beaver College  
Glenside, PA 19038

A Comparison of Students' and Teachers' Viewpoints of Science  
Instruction and Science-Oriented Careers

Harold Jaus  
Purdue University  
West Lafayette, IN 47907

Effect of an Inservice Program on the Attitude of Junior High  
School Science Teachers and the Relation of this  
Attitude to Student Achievement

Martha Piper, Patricia O'Sullivan &  
Joseph P. Carbonari  
University of Houston  
Houston, TX 77004

2:00 p.m. - 3:00 p.m.

SESSION E-3

Room: Henry  
Second Floor

Title: Instruction

Evaluator: John Caldwell  
Michigan State University  
E. Lansing, MI 48824

President: Walter Lowell  
Memorial University  
St. John's, Newfoundland  
Canada

The Science Role Concept and Dogmatism of Preservice Teachers  
in Selected Elementary Education Programs

Charles Price  
The Ohio State University  
Columbus, OH 43212

The Effects of Teachers Cognitive Questioning Level and Redirecting  
on Student Science Achievement

Joseph Riley  
University of Georgia  
Athens, GA 30602

The Effect of An Extended Teacher Wait - Time on Science  
Achievement In Australian Schools

Ken Tobin  
University of Georgia  
Athens, GA 30602

2:00 p.m. - 3:00 p.m.

SESSION E-4

Room: Rockdale  
Second Floor

Title: Techniques and Procedures of Research



The Relationship Among Intellectual Development, Achievement and  
Self-Concept of Elementary School Minority Children

Luis Martinez-Perez & Richard Campbell  
Florida International University  
Miami, FL 33199

Can Information About Famous Black Scientists Influence the Self-Concept  
and Academic Achievement of Elementary Minority School Children

Richard Campbell, Dennis D. Murphy & Willie E. Williams  
Florida International University  
Miami, FL 33199

The Development and Validation of the Image of Science and Scientist Scale

Joseph Krajovich  
Edison Township Public Schools  
Edison, NJ 08817

Jeffrey K. Smith  
Rutgers University  
New Brunswick, NJ 08903

3:15 p.m. - 5:30 p.m.

SESSION F-3

Room: Henry  
Second Floor

Title: Techniques and Procedures of Research

Leaders: William Capie & James R. Okey  
University of Georgia  
Athens, GA 30602

The purpose of this training session is to help science educators learn a procedure for assessing teaching performance or competence. Being able to objectively assess the performance or skills of teachers can aid in studies of teacher behavior, program evaluation, and pre- or inservice teacher education. The 18 competencies included in the assessment are associated with 6 teaching functions: planning, instructing, managing, providing the learning environment, evaluating, and being a professional. Extensive tryouts have shown the teacher competencies and assessment procedures to be valid and reliable. Videotape analysis, examination of teaching objectives and procedures, and discussion will be used to teach participants how to use this competency assessment system.

3:15 p.m. - 4:15 p.m.

SESSION F-4

Room: Rockdale  
Second Floor

Title: Research Methodology

Evaluator: Victor J. Mayer  
The Ohio State University  
Columbus, OH 43210

Presenter: Leonard Simons  
Elmira College  
Elmira, NY 14901

A Search for the Processes of Science

David Torrence  
Tennessee Technological University  
Cookeville, TN 38501

A Meta-Analysis of Elementary School Science Process-Curricula Studies



Evaluator: John Hockett  
Governor's State University  
Park Forest, IL 60466

Presider: Ragy Mitias  
Ohio University  
Athens, OH 45701

A Theoretical Model for the Dissemination and Utilization of Knowledge  
and Its Application to Improving Elementary School Science Instruction

Paul Welliver & Menahem Rabinovich  
The Pennsylvania State University  
University Park, PA 16802

A Study to Determine the Effect of a Textbook Elementary Science Program  
Versus a Non-Textbook Elementary Science Program on the Critical Thinking  
Skill Development of Third Grade Children

Ralph Allen  
University of Montana  
Missoula, Montana

Joseph Callahan  
Northern Montana College  
Havre, Montana 59501

A Suggested Success Model for the Initial Implementation  
of SCIS in An Urban Setting

Patricia Price  
Baldwinsville Schools  
Baldwinsville, NY 13027

Larry Schafer  
Syracuse University  
Syracuse, NY 13210

3:15 p.m. - 5:30 p.m.

SESSION G-3

Room: Henry  
Second Floor

Title: Techniques and Procedures of Research

(continuation of Session F-3)

4:30 p.m. - 5:30 p.m.

SESSION G-4

Room: Rockdale  
Second Floor

Title: Instruction

Evaluator: N. Eldred Bingham  
Editor "Science Education"  
Gainesville, FL 32605

Presider: Heidi Kass  
University of Alberta  
Edmonton, Alberta  
Canada T66 2G5

The Effect of Demonstration-Theory Versus Theory-Demonstration Sequences  
and of Expected and Discrepant Outcomes of A Demonstration Experiment on Subject's  
Test Scores of Bloom's Knowledge, Comprehension and Application Levels

Al Evans  
Georgia State University  
Smyrna, GA 30089

The Effect of Four Types of Study-Guide Questions and Structure  
on Learning From Written Text

Don Kauchak  
University of Utah  
Salt Lake City, Utah 84112

Paul Eggen & Sandra Kirk  
University of North Florida  
Jacksonville, FL 32216

Disruptive and Helpful Testing Cues in Science:  
An Index by Intensity and Frequency

William Kermis  
Syracuse University & Liverpool School District  
Syracuse, NY 13210

4:30 p.m. - 5:30 p.m.      SESSION G-5      Room: Forsythe  
Second Floor

Title: Learning

Evaluator: Ashley Morgan      President: Donald Starkweather  
Georgia State University      Science Education Department  
Atlanta, GA 30303      Oneonta, NY 13820

Logical Ability, Formal Thought and Achievement in Physics

Fred Seeber, George Pallrand,  
Geraldine VanDenberg & David VanHarlingen  
Rutgers University  
New Brunswick, NJ 08903

The Mole Concept: Investigation of an Hierarchical Model

A. K. Griffiths      Heidi Kass  
Memorial University of Newfoundland      University of Alberta  
St. John's, Newfoundland      Edmonton, Alberta  
Canada A1C 5S7      Canada T6G 2E1

The Effect of Student Manipulation of Molecular Models on Chemistry  
Achievement According to Piagetian Level

Dorothy Gabel  
Indiana University  
Bloomington, IN 47401

5:30 p.m. - 7:00 p.m.      SOCIAL TIME      Room: Crystal Ballroom I  
Parlors B, C, & D  
Lobby Level

Clarence H. Boeck, University of Minnesota,  
is retiring. He will attend this social  
period and colleagues, former students and  
friends are invited to drop by and greet him.

8:00 p.m. - 9:30 p.m.      RESEARCHERS' POTPOURRI      Room: Director  
Fourth Floor

Presiding: Arthur L. White      &      Linda DeTure  
Ohio State University      University of Florida  
Columbus, OH 43210      Gainesville, FL 32605

A discussion of the cooperative research  
activities of the NARST and the NSTA will  
be held.

8:00 p.m. - 9:30 p.m.      NARST AWARD PAPER      Room: Cabinet  
Fourth Floor

Presiding: John T. Wilson  
University of Iowa  
Iowa City, Iowa 52242 - 17 -



Sex Differences Among Early Adolescents in Learning  
a Spatial Visualization Skill

Walter Smith & Cynthia I. Litman  
University of Kansas  
Lawrence, KS 66045

The Effects of Setting Novelty and Number of Available Relevant  
Examples on Field Trip Behavior and Learning

John Balling & John H. Falk  
Smithsonian Institute  
Edgewater, MD 21037

Sex-Related Differences in Rate of Concept Attainment

Ann Howe  
Syracuse University  
Syracuse, NY 13210

8:00 a.m. - 9:00 a.m.

SESSION H-4

Room: Rockdale  
Second Floor

Title: Instruction

Evaluator: David Stronck  
University of Victoria  
Victoria, British Columbia  
Canada V8W 2Y2

Presenter: William C. Ritz  
California State University  
Long Beach, CA 90840

The Effects of Diagnosis, Remediation, and Locus of Control on Achievement,  
Retention, and Attitudes of Middle School Science Students

Ramona Saunders & Russell H. Yeany  
University of Georgia  
Athens, GA 30602

The Effects of A Diagnostic-Prescriptive Teaching Strategy on the Achievement  
and Attitudes of High School Biology Students

Joe Long  
Northeast Georgia Cooperative  
Educational Service Agency  
Winterville, GA 30683

James R. Okey & Russell H. Yeany  
University of Georgia  
Athens, GA 30602

The Effects of Diagnostic-Prescriptive Instruction and Locus of Control on  
Different Cognitive Levels of Science Achievement in University Students

Russell H. Yeany, Richard J. Dost,  
& Robert W. Matthews  
University of Georgia  
Athens, GA 30602

8:00 a.m. - 9:00 a.m.

SESSION H-5

Room: Forsythe  
Second Floor

Title: Round Table

Evaluator: William Brown  
Old Dominion University  
Norfolk, VA 23508

President: Glen Aikenhead  
University of Saskatchewan  
Saskatoon, Sask.  
Canada S7N DWO

Reflections on Writing an Annual Review and Summary of  
Research in Science Education

Rita Peterson  
341 Cress St.  
Laguna Beach, CA 92651

9:15 a.m. - 10:15 a.m.

GENERAL SESSION III

Room: Gwinnett, DeKalb,  
and Paulding  
Second Floor

Presiding: John W. Renner, President

The Impact of Paradigm-Based Research Upon  
Classroom Practice

Speaker: Rita W. Peterson  
Associate Professor of Science Education  
California State University  
Hayward, CA 94542

10:30 a.m. - 12:00 noon

THE OBOURN LECTURE

Room: Exhibit Hall C  
Georgia World Congress  
Center

Title: Child Development

The Obourn Award was established by the widow of Ellsworth Scott Obourn in recognition of his contributions in research and teaching in science education. Dr. Obourn was an officer and member of the NARST and the NSTA for many years. The Obourn Award is presented every two years to an individual who is recognized for contributions to research and science education. The recipient of the Obourn Award is asked to deliver the Memorial Lecture at a joint session of the NARST and the NSTA meetings. This year's recipient is Jean Piaget in recognition of his contributions to the field of child development. The award will be accepted by Bärbel Inhelder. Dr. Inhelder is an associate of Dr. Piaget, and works as professor of genetic psychology and research, University of Geneva, (Faculty of Psychology and Sciences of Education), a position previously occupied by Dr. Piaget.

Speaker: Bärbel Inhelder  
University of Geneva  
Geneva, Switzerland

Sponsored by the NARST and the NSTA

THE NATIONAL ASSOCIATION FOR  
RESEARCH IN SCIENCE TEACHING

THE NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING (NARST) was founded for the purpose of promoting research in science education at all educational levels, and for disseminating the findings of this research in such ways as to improve science teaching. NARST is incorporated as a non-profit corporation in the state of Minnesota. The official publication of the Association is the JOURNAL OF RESEARCH IN SCIENCE TEACHING. The major areas of concern are experimental and analytical research studies (theoretical or applied) encompassing curriculum development and organization, evaluation, learning theory, teacher education, programs for the talented and underachievers, and methods of instruction in sciences. Surveys of current practices, enrollment, and course offerings represent other interests.

NARST meets with the American Education Research Association one year and the National Science Teachers Association the next year. At these meetings research papers in the areas listed above are presented along with symposia on topics of interest to teachers and educational research workers.

NARST cooperates with the ERIC Science, Mathematics, and Environmental Education Information Analysis Center (SMEAC) located at the Ohio State University to conduct and publish reviews of research in science education at the elementary, secondary and college levels and to compile and publish the abstracts of papers presented at the annual meeting.

The constitution of NARST specifies that membership shall be drawn from those active in research in science education and those outstanding in science educational leadership such as teachers, supervisors and curriculum developers. Patron membership is available to individuals and organizations who would like to contribute more than the basic dues to support the work of our organization.

The Association maintains a Placement Information Service which, each year, provides lists of positions available and of personnel seeking employment. Prospective employees and employers are urged to use these lists to arrange contacts and interviews. Placement information is made available by mail early in each calendar year and at the annual meeting. Applications for membership, payment of dues, and correspondence related to the business operations of NARST should be mailed to the Executive Secretary.

## NARST PROGRAM STRUCTURE

This listing of program format and the following definitions are offered to clarify the structure of this program. In addition, all members are invited to make specific suggestions for modification of format or inclusion of topics in future meetings. Letters to the officers are always a welcomed means of communicating suggestions.

1. GENERAL SESSIONS--Researchers of national prominence are asked to address the NARST membership concerning the topics and issues of general concern. Such analyses of where we have been and where we are going are features of the annual meeting each year.
2. CONTRIBUTED PAPERS--Individual members share results of their research efforts with other members. A series of concurrent sessions where such Contributed Papers are scheduled represent a major part of the NARST meetings. Generally such papers are restricted to a fifteen-to-twenty minute presentation which includes audience questioning as well.
3. PAPER SETS--Several related studies originating from a common research center or line of research can be structured as a set of from three to six separate but related reports. Such a grouping of paper often allows for common elements of design or approach to be presented once instead of several times.
4. SYMPOSIA AND PANELS--Areas of current research or research needs are identified and papers prepared addressing defined issues. Persons with varying backgrounds, positions, and research interests are included. In addition to presentations concerning research in a given area, interaction among the presentors, other discussants, and the audience is anticipated. Varying views, approaches, data reports, and data interpretation are desired features for these sessions.
5. TECHNIQUES AND PROCEDURES OF RESEARCH--These sessions are devoted to topics of basic importance for conducting disciplined inquiry of particular types. They are to contain a thorough and sophisticated treatment of a research methodology, including training in the basic procedures to be used.

## PLANNING NARST PROGRAMS

According to the NARST By-Laws, the Program Committee is a Standing Committee consisting of the Research Coordinator, the President-Elect (as chairman of the Committee), and four members (each with rotating two-year terms). This Program Committee is charged with planning the program format for the Annual Meeting. This planning includes preparing the Call for Papers, evaluating the contributions suggested by the members for all program elements, and preparing the program copy for distribution to members.

The Call for Papers is included in a Newsletter (and, at the option of the Secretary-Treasurer, a special mailing) to all members. The Call for Papers includes a questionnaire which serves as a cover sheet for multiple copies of a summary of the contributed paper or other program feature. Such copies are not to include names of the investigator or other means of identification. These copies of the summaries are number-coded with the cover sheets being filed until after all program planning and summary evaluation has occurred.

Members of the Program Committee read and rate each paper submitted for possible use on the program. Following this independent rating, the Committee meets as a group. The separate ratings are summarized and any disagreement among the Committee members making the ratings are then discussed thoroughly. All papers are eventually recommended for inclusion in the program structure or rejected. Sometimes the final decision regarding borderline situations is made based upon the program structure (i.e., number of papers within a particular classification, total number of concurrent sessions planned, needed balance in terms of topics). The names of contributors remain unknown to all persons making ratings until all decisions are made. The names of persons submitting Training Session, Symposium, and Panel proposals are discussed before final decisions are made.

## NOTES

E-1 \_\_\_\_\_

E-2 \_\_\_\_\_

E-3 \_\_\_\_\_

E-4 \_\_\_\_\_

E-5 \_\_\_\_\_

F-1 \_\_\_\_\_

F-2 \_\_\_\_\_

F-3 \_\_\_\_\_

F-4 \_\_\_\_\_

F-5 \_\_\_\_\_

G-1 \_\_\_\_\_

G-2 \_\_\_\_\_

G-3 \_\_\_\_\_

G-4 \_\_\_\_\_

G-5 \_\_\_\_\_

Researchers' Potpourri \_\_\_\_\_

NARST Award Paper \_\_\_\_\_

H-1 \_\_\_\_\_

H-2 \_\_\_\_\_

H-3 \_\_\_\_\_

H-4 \_\_\_\_\_

H-5 \_\_\_\_\_

General Session #4 \_\_\_\_\_

The Obourn Lecture \_\_\_\_\_

SCHEDULE PLANNING GUIDE

Wednesday, March 21		7:30 - 12:00	BOARD MEETING				
		1:00 - 2:30	GENERAL SESSION #1				
	Sessions	2:45 - 3:45	A-1	A-2	A-3	A-4	A-5
		4:00 - 5:00	B-1	B-2	B-3	B-4	B-5
		5:00 - 6:30	SOCIAL TIME				
		7:30 - 9:00	GENERAL SESSION #2				
Thursday, March 22			JRST EDITORIAL BOARD MEETING 8:00 - 9:30		NARST COMMITTEE MEETINGS 7:00 - 8:15		
	Sessions	8:30 - 9:30	C-1	C-2	C-3	C-4	C-5 Techniques & Procedures of Research
		9:45 - 10:45	D-1	D-2	D-3	D-4	
		11:00 - 11:45	ANNUAL BUSINESS MEETING OF THE NARST				
		12:00 - 1:45	ANNUAL LUNCHEON				
Thursday, March 22	Sessions	2:00 - 3:00	E-1	E-2	E-3	Techniques E-4 & Procedures of Research	E-5
		3:15 - 4:15	F-1	F-2	F-3 Techniques & Procedures of Research	F-4	F-5
		4:30 - 5:30	G-1	G-2		G-4	G-5
		5:30 - 7:00	SOCIAL TIME				
		8:00 - 9:30	RESEARCHERS' POTPOURRI				
			NARST AWARD PAPER				
Friday, March 23	Sessions	7:15 - 9:00	NARST BOARD MEETING				
		8:00 - 9:00	H-1	H-2	H-3	H-4	H-5
		9:15 - 10:15	GENERAL SESSION #3				
		10:30 - 12:00	THE OBOURN LECTURE				

HELP EVALUATE THE 1979 MEETING OF THE NARST

Please comment on each of the sessions you attended. Indicate strengths and weaknesses you observed of each of the sessions. Deposit this form in the box at the registration desk before 12:00 noon, Friday, March 23, 1979 or mail it to:

Dr. John W. Renner  
Rm. 323, Physical Sciences Center  
University of Oklahoma  
Norman, OK 73019

General Session #1 \_\_\_\_\_

Session # A-1 \_\_\_\_\_

A-2 \_\_\_\_\_

A-3 \_\_\_\_\_

A-4 \_\_\_\_\_

A-5 \_\_\_\_\_

B-1 \_\_\_\_\_

B-2 \_\_\_\_\_

B-3 \_\_\_\_\_

B-4 \_\_\_\_\_

B-5 \_\_\_\_\_

General Session #2 \_\_\_\_\_

C-1 \_\_\_\_\_

C-2 \_\_\_\_\_

C-3 \_\_\_\_\_

C-4 \_\_\_\_\_

C-5 \_\_\_\_\_

D-1 \_\_\_\_\_

D-2 \_\_\_\_\_

D-3 \_\_\_\_\_

D-4 \_\_\_\_\_

D-5 \_\_\_\_\_

Annual Luncheon \_\_\_\_\_

**NATIONAL ASSOCIATION FOR  
RESEARCH IN SCIENCE  
TEACHING**

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University of Oklahoma  
Norman, OK 73019

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