

Newsletter

Vol. 21 No. 4 NEWSLETTER OF THE NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING Oct. 1979

PRESIDENT'S PAGE

The NARST is maintained because of the interest of its members in research. There are at least three types of interest in research that the membership can have. The most obvious interest is in doing research. One reason for those interested in doing research belonging to the NARST is to gain deeper insight into the research process and to be in constant touch with the research that is reported in the JRST. For these people the annual meetings have proved to be a time to gain new ideas about the insights into the research they are doing by talking with other researchers about it. The NARST has met its responsibilities to the research in an adequate manner.

The second type of membership interest that exists is the desire to use the results of research that others have done. "Is it relevant to the classroom?" That question is usually asked of everyone who has done research. Presentations at the annual meetings and certain articles in the JRST have reflected the use of research. There is no doubt, however, that the NARST should increase its efforts to make research results available to those who will use them and to make those results as lucid as possible.

There is a third category of membership interest in research that the NARST has not focused its attention on. That category deals with the research science educators believe needs to be done. What are the major problems in science education that need to be researched? During the next few months the NARST will begin to discharge its responsibility to that membership interest. But, that responsibility can be discharged only if the membership cooperates.

During the fall you will receive a request to describe the five research problems you feel are most in need of research. That same request will be made of the members of the AETS and the NSSA. A compilation of the research problems suggested will then be prepared and made available to the membership. The exact publication format has not been decided at this time. Involving the three organizations mentioned will provide research suggestions from people with different interest patterns.

You can see that this NARST effort will not succeed unless you cooperate. Please return your completed questionnaire when you receive it.

John W. Renner,
President

1978 FINANCIAL REPORT

	<u>1977</u>	<u>1978</u>
<u>SAVINGS</u>		
Savings Accounts	\$ 2,009.09	\$ 2,151.93
Interest Earned	142.94	150.01
	<hr/>	<hr/>
TOTALS:	\$ 2,151.93	\$ 2,301.94

RECEIPTS

Balance, January 1	\$ 1,165.41	\$ 2,328.41
Dues	15,070.00	16,316.12
Royalties	1,055.70	1,800.00
Annual Meeting	4,743.00	4,293.00
From East Lansing Bank	--	2,815.92
Other	112.99	347.82
	<hr/>	<hr/>
TOTALS:	\$22,147.10	\$27,901.27

DISBURSEMENTS

President's Office	\$ None	\$ 37.50
Executive Board-Fall Meeting	1,512.06	1,591.05
Executive Secretary's Office	1,991.98	2,401.71
Membership: Newsletters & Promotion	1,935.49	1,246.83
Journal (1978 - includes \$5000 due for 1977)	8,297.50	16,594.40
Annual Meeting	5,754.06	3,668.72
Other	327.60	449.08
	<hr/>	<hr/>
TOTALS:	\$19,818.69	\$25,989.29
Checking Account Balance	2,328.41	\$ 1,911.98
	<hr/>	<hr/>
TOTALS:	\$22,147.10	\$27,901.27

INSTITUTIONAL SUPPORT

University of Georgia Editorial Office	\$18,000.00
Drake University Executive Secretary's Office	6,500.00
	<hr/>
	\$24,500.00

MEMBERSHIP REPORT

	<u>1978</u>	<u>1979</u>
Regular Members	705	681
Patron Members	2	2
Sustaining Members	6	7
Life Members	10	10
Emeritus Members	<u>13</u>	<u>17</u>
TOTAL:	736	717

1979 Patron Members

Battelle Memorial
Institute
Craig Sipe

1979 Sustaining Members

Difco Laboratories
J. W. George Ivany, Jr.
Ragy Mitias
Bothaina Omara
Ronald Raven
Joyce Swartney
Robert Yager

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RESEARCH IN PROGRESS

The next newsletter and subsequent issues will include a section in which members may identify research in progress. The purpose of the section is to promote communication amongst members pursuing the same lines of research.

Each listing shall be limited to a one sentence descriptor and the name, address and phone number of the researcher.

Send listing to: R. J. Vanden Branden
NARST Newsletter Editor
Memorial Hall
Drake University
Des Moines, IA 50311

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WHAT RESEARCH SAYS TO THE
SCIENCE TEACHER V. II
Edited by Mary Budd Rowe

Now available from NSTA is this 120 page book, second in a series, developed with funding from ERIC, Columbus, OH. Seven science educators examine research findings on topics of crucial interest to teachers. Order from: NSTA

1742 Connecticut Avenue, NW
Washington, D.C. 20009

Stock No. 471-14758

\$4.00 in advance

Only orders on official institutional purchase orders will be billed.

EXECUTIVE BOARD TO MEET

Responsibility for the affairs of the Association are vested with an elected Executive Board. The Board meets twice a year at the time of the annual meeting and again in the Fall.

The Board will meet with the Program Committee on November 1-2 in Kansas City in conjunction with the SSMA meeting.

The Board earnestly solicits your ideas and suggestions. Communicate with President Jack Renner or any member of the Board. See June newsletter for list of officers.

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1980 ANNUAL MEETING IN BOSTON

The 1980 annual meeting of NARST will be held at the Boston Park Plaza Hotel in Boston Friday, April 11 through Sunday, April 13, following the sessions of the American Education Research Association.

Your program committee will meet November 1. Send your program ideas and suggestions to the chairman:

Stanley Helgeson
NARST Program Chairman
Science and Mathematics Education
The Ohio State University
Columbus, OH 43210

SEE CALL FOR PROPOSALS IN SEPTEMBER NEWSLETTER.

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NOMINEES FOR NARST OFFICES

The Elections Committee has nominated the following for the offices listed:

For President-Elect

James J. Gallagher
Michigan State University

Rita W. Peterson
California State University -
Hayward

For Board of Directors

James P. Barufaldi
University of Texas

Jane B. Bowyer
Mills College

J. Dudley Herron
Purdue University

Doris A. Trojack
Univ. of Missouri - St. Louis

For Research Coordinator

Howard L. Jones
University of Houston

Arthur L. White
The Ohio State University

Additional nominations may be made by petition of ten (10) members. Said petitions shall be in the hands of the Executive Secretary three (3) months prior to the annual meeting. Deadline for receipt of petitions is January 10, 1980. Vita on all nominees shall appear in later newsletter.

NEW TITLE

Sourcebook: Science Education
for the Physically Handicapped
Edited by Helenmarie Hofman and Kenneth S. Ricker

This easy-to-use, spiral bound volume includes chapters on the following topics: law and the handicapped; teacher training; resources; visual, auditory, and orthopedic handicaps; careers. Also included: position statement, recommendations, and a look to the future..1979, 284 pp. \$6.00 plus \$2.00 postage and handling. Order from:

NSTA
1742 Connecticut Avenue, N.W.
Washington, DC 20009

Stock No. 471-14760

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MEMBERS TRAVEL ABROAD

HERMAN KRANZER, University of West Florida, is spending the Fall Semester as visiting research professor in science education at Provincial Kaohsiung Teacher College, Kaohsiung, Taiwan, Republic of China.

VINCE LUNETTA, University of Iowa, spent the Spring Semester in Portugal on a Fulbright Fellowship.

CARLTON KNIGHT, University of Delaware, is presently at the American University in Beirut, Lebanon.

WAYNE WELCH, University of Minnesota, was in Israel on a Fulbright, Spring Semester 1979.

MEMBERS RETIRE

Edward Victor has retired from Northwestern University and is now Adjunct Professor at Arizona State. His new address is 9819 Calico Drive, Sun City, AZ 85373.

Clarence (Harry) Boeck has retired from the University of Minnesota and reports, at least at printing time, no regrets.

RESEARCH INTEREST EXCHANGE

This page in this newsletter and in subsequent newsletters is to be used to establish contact between members pursuing the same or related lines of research. Here's the first entries received by the Editor.

Marcia L. Linn.....
 Adolescent Reasoning Project
 Laurence Hall of Science
 University of California
 Berkeley, California 94720

(415) 642-3679

Description: The NSF funded Adolescent Reasoning Project is researching context effects including the influence of knowledge and task demand on scientific reasoning. A special interest is in the ability to control variables.

Dr. Mary Westerback.....
 C. W. Post College of Arts and Science
 Long Island University
 Greenwale, NY 11548

(516) 299-2318

Description: Personal research on attitude toward teaching science and anxiety about teaching science in preservice elementary teachers.

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SOCIETY FOR COLLEGE SCIENCE TEACHERS

Membership in the Society for College Science Teachers is open to anyone who wishes to join. The Society is especially eager to enroll those faculty who teach first and second year science courses, whether at a community or junior college, a four-year college, or a university. Anyone joining before December 31, 1979, will be considered a charter member. Dues: \$10.00

The Society is faced with an enormous number of tasks and the necessity of identifying members who will perform them. Among the most urgent are:

- Arranging for incorporation and tax-free status
- Arranging programs for NSTA conventions (Hartford, Portland, St. Louis, Anaheim)
- Recruiting members
- Raising funds (proposal writing)
- Handling funds (treasurer)
- Drafting Constitution and Bylaws
- Liaison to other science societies

If you are interested in helping with any of these jobs, please contact Dr. Sterling L. Smith, Box 23953, TWU Station, Denton, TX 76204.

REGISTER FOR PLACEMENT SERVICE

Now is the time to register with the NARST Placement Service. Send announcements to:

Dr. John Penick, Coordinator
 NARST Placement Service
 Physics Building
 The University of Iowa
 Iowa City, IA 52242

If you are seeking a position, send a single sheet containing an abbreviated vita and a brief description of the type of position being sought. Also, include five self-addressed envelopes. These will be used to notify you of openings as they are received.

If you have a position to fill, send a one-page description or your regular announcement.

All announcements received before January 15th will be published in a special placement edition of the newsletter February 1st.

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FROM THE PROGRAM COMMITTEERating of Program Proposals

The Program Committee for the 1980 Annual Meeting will evaluate submitted papers using a double blind procedure. A rating sheet is included in this newsletter for your information. Suggestions on how this might be improved will be appreciated.

The Committee is also trying to improve the rating of different types of research by using a classification scheme. Each paper will be placed into one of the following categories:

A - Experimental	C - Historical	E - Case Study
B - Descriptive	D - Philosophical	F - Other

This list will be added to the cover sheet for proposals to be submitted next fall for the 1981 meeting. Each proposer will be asked to classify his/her own work.

Each reader is asked to respond to the program interest survey included with this newsletter. Photocopy this page and return it as soon as possible to me along with your other ideas for the annual meeting.

Stan Helgeson
 NARST Program Chairman
 ERIC/SMEAC Room 310
 1200 Chambers Road
 Columbus, OH 43212

NARST PAPER RATING FORM

Paper # _____

CRITERIA	RELEVANCE		RATING					CRITERIA	RELEVANCE		RATING									
	Yes	No	High	.	.	Low	Yes		No	High	.	.	Low							
A. PROBLEM/PURPOSE: The problem is clearly stated and the rationale is logical.							B. DESIGN AND PROCEDURES: The design (plan) and procedures of the study are appropriate to the stated problem or purpose.													
1. The purpose is concisely stated.	Y	N	5	4	3	2	1	1. The research design is fully described.	Y	N	5	4	3	2	1					
2. Objectives or hypotheses are logically developed from, or related to, some theory or related problem.	Y	N	5	4	3	2	1	2. The population and sample are described (geographical limits, time period covered, sociological description, sampling units).	Y	N	5	4	3	2	1					
3. Variables are identified, and their relationship to theory or observation is explained. (If the variables are new, then evidence from a pilot study is presented.)	Y	N	5	4	3	2	1	3. The sampling method is appropriate and practical. It provides for a sample of sufficient size which is representative of the defined population.	Y	N	5	4	3	2	1					
4. The results will contribute to the solution of some practical or theoretical problem.	Y	N	5	4	3	2	1	4. Controls for sources of error are described and are appropriate (e.g., sampling error, nonresponse, interviewer bias, response error, response set, experimenter bias, teacher effect, control of variables, extraneous factors).	Y	N	5	4	3	2	1					
AVERAGE RATING OF RELEVANT CRITERIA <input type="text"/>							AVERAGE RATING OF RELEVANT CRITERIA <input type="text"/>													
C. DATA COLLECTION: The relationship of the data gathering procedures to the implementation of the design is appropriate.							D. ANALYSIS: The analysis of the data is appropriate.													
1. The data gathering methods are clearly described and meet the requirements of the problem.	Y	N	5	4	3	2	1	1. The analysis methods are appropriate to the problem.	Y	N	5	4	3	2	1					
2. The measuring instruments and/or procedures are appropriate.	Y	N	5	4	3	2	1	2. The analysis methods are appropriate to the sample.	Y	N	5	4	3	2	1					
3. The validity and reliability of the evidence are established, or a procedure for establishing the validity and reliability of the evidence is described.	Y	N	5	4	3	2	1	3. The results of the analysis are clearly presented.	Y	N	5	4	3	2	1					
4. Evidence of precautions taken to maintain objectivity in data collection (especially in historical and similar studies).	Y	N	5	4	3	2	1	AVERAGE RATING OF RELEVANT CRITERIA <input type="text"/>												
AVERAGE RATING OF RELEVANT CRITERIA <input type="text"/>							E. CONCLUSIONS: The conclusions are reasonable.													
TOTAL RATING SCORE (Sum of averages for A, B, C, D, E) <input type="text"/>							1. The conclusions are clearly stated.							Y	N	5	4	3	2	1
							2. The conclusions are substantiated by the evidence presented.							Y	N	5	4	3	2	1
							3. Interpretations and implications are impartial and scientific.							Y	N	5	4	3	2	1
							4. A comprehensive discussion of the qualifications is given (methodological problems and errors, alternative explanations, other limitations).							Y	N	5	4	3	2	1
							AVERAGE RATING OF RELEVANT CRITERIA <input type="text"/>													

TECHNIQUES AND PROCEDURES OF
RESEARCH AT THE 1980
NARST MEETING IN BOSTON

The NARST Program Committee needs your help in planning sessions for the annual meeting which focus upon the techniques and procedures of research. If many members desire a specific type of session, we try to find someone to lead it. From the list below, number your first, second, and third choices for these sessions. If there are topics not on the list that you would like to see offered, enter them in the blanks. If you have suggestions for persons who could lead a particular session, write in their names to the right of the topic.

- _____ Stepwise multiple regression (application and interpretation)
- _____ Multivariate analysis of variance (application and interpretation)
- _____ Evaluating teacher education programs
- _____ Factor analysis (application and interpretation)
- _____ Maximum likelihood regression analysis
- _____ Analysis of covariance (application and interpretation)
- _____ Post-hoc data analysis (multiple comparison techniques)
- _____ Internal consistency test reliability (computation from pre-
pared programs)
- _____ Establishing reliability and validity of instruments
- _____ Planning and conducting survey studies
- _____ Selecting designs for research and evaluation studies
- _____ Discriminate analysis
- _____ Assessing the impact of a science curriculum
- _____ Attitude assessment
- _____ Cluster analysis (hierarchical classificatory methods)
- _____ Error rate
- _____ Meta-analysis
- _____ Other (specify) _____

NARST members should submit proposals for the Technique and Procedures of Research session to the NARST Program Committee for the topics listed here or for any other topics they feel are important. Mark your choices on this sheet and mail it by October 10, 1979 to:

Stan Helgeson
ERIC/SMEAC - Room 310
1200 Chambers Road
Columbus, OH 53212

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RESEARCH IN SCIENCE TEACHING
207 MEMORIAL HALL
DRAKE UNIVERSITY
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FIRST CLASS MAIL