Research Council for Diagnostic and Prescriptive Mathematics

Twentieth Anniversary Conference

Holiday Inn Oceanfront
Melbourne, Florida
February 11-13, 1993
RCDPM 1993 Conference Program
February 11 - 12 - 13, 1993
Holiday Inn Oceanfront

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Cecil Trueblood
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A. Edward Uprichard
John Wilson

University
Covenant College
University of Central Florida
State University of New York - Buffalo
University of Kansas
Deceased
Florida State University
Northern Arizona University
Deceased
University of Central Florida
University of Central Florida
Stephen F. Austin University
University of Maryland
Retired
State University of New York - Buffalo
University of Wisconsin - Madison
Bowling Green State University
University of Akron
Penn State University
VA Polytech inst and State University
University of N. Carolina at Greensboro
Deceased
RCDPM
1993 Conference Program
February 11 - 12 - 13, 1993
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Welcome to the twentieth anniversary conference of the Research Council for Diagnostic and Prescriptive Mathematics. We cordially welcome you and hope this conference will be a professionally rewarding experience. Become an active member and participate in the research of the members of the organization. With the spirit of the founding members of the organization, the following suggestions are offered for your consideration.

1. Share your mathematical research ideas with as many members as possible.

2. As you are listening to a research presentation:
   a. Think - How can you help in the research project being discussed?
   b. Do - Offer to find a sample in your area that would fit into the population being considered.
   c. Do - Obtain permission from the researcher to use the developed research instrument.
   d. Do - Collect data and share them with the researcher.

3. Project how you could help in the researcher's literature review.
   a. Think - What are the resources available at my own university/school?
   b. Do - Offer to run a computer search at your university.
   c. Do - Share the unique materials available at your university with the researcher.

4. How can you help strengthen the Research Council for Diagnostic and Prescriptive Mathematics?
   a. Think - Do you know individuals who have interest in diagnostic and prescriptive mathematics?
   b. Do - Help recruit individuals whose interests are compatible with the mission of RCDPM.
   c. Do - Offer to collaborate on research with other RCDPM members.
   d. Do - Write the elected officers and share your good ideas.
   e. Do - Write articles and research reports for our journal FOCUS.

Support the RCDPM Mission Statement!
The Research Council for Diagnostic and Prescriptive Mathematics seeks to stimulate, generate, coordinate, and disseminate research efforts designed to understand and/or overcome factors that inhibit maximal mathematics learning.
3:45 - 4:30 Barbados
Focus on FOCUS
A discussion on how to use FOCUS as a forum for clinical and case study research.
Jean Schmittau & Jon Engelhardt, Chairs

4:30 - 5:00 Break

5:00 - 6:00 Reception honoring the founding members
Penthouse

6:00 - ?? Luau on the Beach

Friday, February 12, 1993
7:00 - 8:00 Continental breakfast Barbados/Aruba

8:00 - 8:50 Friday
Session 1 St. Anne
Assessing Individual Performance in Group Projects
A structured format will be presented that will help in assigning fair and objective grades to all group members who work together on a project.
Presenter - Sue Brown

Session 2 St. Thomas
Mathematical Concepts Used in Science Classes:
Moving toward an Integrated Curriculum
A research report on mathematical concepts used in science classes. The focus of the research is to ascertain what factors prevent students from using their mathematics knowledge and skills in a variety of contexts.
Presenters - Jayne Fleener, Susan Westbrook, & Laura Rogers

Session 3 St. Croix
Pre-rational Number Knowledge: Partitioning Strategies of Geometric Thinkers
A research report that isolates factors affecting how students construct rational number knowledge. Implications for the classroom will be discussed.
Presenter - Vicki Schell

Session 4 Martinique
Promoting Metacognition in Developmental Math Students
Literature seems to support that metacognition skills are a necessary condition for learning mathematics. Suggestions will be given for how instruction should be changed to address cognition metacognitively.
Presenters - Gwen Autin & Barbara Allen

Session 5 Antiqua
Assessment: Practices and Reporting Methods
Information concerning the methods used by leadership teams to inform the school community about changes in assessment practices will be presented.
Presenter - Mary Ellen Schmidt

9:00 - 9:50 Friday
Session 6 St. Anne
President's Hour: - - The Prez's Parting Shots
Standards and reform in mathematics education - where do diagnosis and RCDPM fit?
Presenter - Francis (Skip) Fennell

Session 7 St. Thomas
Sign Language and Geometry
A review of research and an outline of Van Hiele assessments and instructional activities in geometric thinking among deaf elementary school students and teachers will be considered. This session is related to the research to be presented by Marguerite Mason.
Presenter - Jerry Bryant

Session 8 St. Croix
The Kentucky Mathematics Intervention Process: a Constructionist Approach to the Remedial Framework, Grades k - 12
Along with the theoretical and available resources, twenty-one valued outcomes will be described and an activity lesson plan will be presented.
Presenters - Alan Zollman & Ann Bartosh
Session 9
The Effects of Two Different Teaching Strategies on Post-Secondary Developmental Mathematics Students
This study was concerned with evaluating which of two instructional settings is more successful in helping to remediate deficiencies of mathematics students.
Presenter - Harriet Lamm

Session 10
Elementary Teachers' Concepts of Statistics
A three year study to help elementary school teachers learn how to teach data analysis and data interpretation more effectively.
Presenters - George Bright, Sarah Berenson, & Susan Friel

9:50 - 10:10 Break

10:10 - 11:00 Friday
Session 11
Teacher Education: Probing Questions During Clinical Diagnostic Interviews
Illustrations of probing questions, to examine reasons for a mathematics difficulty, used during clinical diagnostic interview, and suggestions for teacher education procedures will be presented.
Presenter - Phyllis Kavet

Session 12
Mathematics Enrichment for Elementary School Teachers
A method for improving the mathematics skills of prospective elementary teachers will be presented.
Presenter - Paula Gnepp

Session 13
Humanizing the Multiple-Choice Test With Partial Credit
An innovative assessment instrument that increases the intelligent use of multiple-choice testing and lowers student anxiety will be discussed.
Presenter - Barry Cherkas

Session 14
Assessing Children's Thinking: The Role of Informal Algorithms
Young children's thinking will inform educators about the development of place value in an effort to support meaningful mathematics teaching and learning.
Presenter - Deborah Carey

Session 15
A Survey to Identify the Degree of Importance Given to the NCTM's Curriculum Standards by Student Teachers
The degree of importance which teachers assign to each of the standards will, in part, influence their implementation.
Presenter - Robert Cunningham

11:00 - 12:00 Friday
Session 16
The Role of Language in the Acquisition of Geometric Knowledge Among the Deaf
This study focuses on the levels of geometric understanding and misconceptions among five deaf children. This report is related to the presentation by Jerry Bryant.
Presenter - Marguerite Mason

Session 17
Preservice Teacher's Visual Approaches to Problem Solving
Sample drawings will be discussed and analyzed. Implications of teacher's abilities to implement the NCTM standards will be included.
Presenters - Virginia Uenick & Linda Zech

Session 18
The Use of Three-Dimensional Models in the Teaching of Calculus
Three different methods of representing 3D objects with 2D imagery were compared to determine the least ambiguous method.
Presenters - Susan Ganter & David Eby

Session 19
A Study of the Factors Used by Judges to Establish Passing Scores for Teacher Certification Tests in Mathematics and Other Areas
A process by which passing scores can be determined, especially in mathematics, by using judges will be discussed.
Presenters Charles Dziuban & Michael Hynes
Session 20

**The Linguistic Packaging of Mathematics**
A research report on the examination of the linguistic grammar used in mathematics texts and classrooms. It includes conjectures about the impact of those structures upon the learning and/or doing of mathematics.
Presenter - Jan Green

12:15 - 2:00 Friday Luncheon Barbados/Aruba
RCDPM Annual Business Meeting

2:30 - 4:00 Friday Thematic Presentations Barbados
**Multicultural Issues**
Gil Cuevas, Chair
Presenters:
Mary Lou Navin
Dawn Hoyt Kidd
Gil Cuevas

**Alternative Assessment** Aruba
Ann McAlonie, Chair
Presenters:
David Boliver
Grace Burton
Edward Silver

4:00 - 4:15 Break

4:15 - 5:15 Small Group Discussion Barbados/Aruba
Presiders:
Robert Ashlock Jerry Cummins
Doug Brumbaugh Diana Jordan
Tom Romberg Dawn Hoyt Kidd
Bob Sovchik Janet Scheer
Ed Urick David Boliver

Friday Optional Dinner on Gatsby's Little River Queen

**Saturday, February 13, 1993**
7:00 - 8:00 Continental breakfast Lobby/Paradise

8:00 - 8:50 Saturday

**Session 21** St. Anne
**Effects of Gender on Classroom Teaching Style** Research data on what teachers believe concerning success in mathematics as related to gender will be presented.
Presenter - Judith Olson

**Session 22** St Thomas
**Writing Activities as a Vehicle for Enhancing the Mathematics Learning of Language Minority Students**
Language activities, including whole language mathematics activities, derived from math clinic experiences, will be presented as a vehicle for enhancing student mathematics learning.
Presenter - David Davidson

**Session 23** St Croix
**Alternative Assessment**
Research report on alternative assessment methods used in a graduate level diagnostic/prescriptive mathematics course. Findings and implications will be discussed.
Presenter - Enrique Ortiz

**Session 24** Martinique
**Graphing Technology and Knowledge of Function Properties: A Dialogue With Students**
Research report will focus on data collected while students had access to graphing technology. Misconceptions that may be attributed to technology use will be highlighted and implications for classroom instructional practice will be discussed.
Presenter - Denise Thompson

**Session 25** Antigua
**School-Based Mathematics Clinics**
The presentation will describe a replicable, high school-based clinical intervention strategy that uses assessment techniques sensitive to social and affective as well as cognitive and psychomotor blocks to learning mathematics.
Presenter - George Wyer
9:00 - 9:50 Saturday
Session 26 St. Anne
Writing to Learn Mathematics
Using writing to learn mathematics as a bridge of communication between the teacher and the learner. Presentation will focus on activities for developmental mathematics classes and how this techniques provides information to detect common misconceptions.
Presenter - Aparna Ganguli

Session 27 St. Thomas
The Middle Grade Dilemma - Possible Directions
Presentation will address the mis-direction of middle school mathematics. The role of on-going classroom diagnostic approaches will be discussed.
Presenters - C. J. Dockweiler & Mona Majdalani

Session 28 St. Croix
Teachers' Understanding of Functions and Graphing
Research report on relationship among teacher's knowledge of functions and graphing, their attitudes about functions and graphing, and what teachers actually do in the classroom.
Presenter - Kingsley Durant

Session 29 Martinique
Alternative Assessment Vehicles
The potential of alternative assessment vehicles should be explored and monitored. Progress will be reported on a comprehensive alternative assessment package.
Presenter - Austin Connelly

Session 30 Antigua
Project UP With Math
A report on the results of a clinical intervention with at-risk elementary school students will be given.
Presenters Karen Verbeke & Nancy Morgan Clayton

9:50 - 10:10 Break

10:10 - 11:00 Saturday
Session 31 St. Anne
Mathematics Disabilities Among Preservice Teachers
A report on case studies that investigate factors which inhibit maximal mathematics performance among preservice elementary and special education teachers.
Presenter - Beatrice Babbitt

Session 32 St. Thomas
Diagnosing Children's Ratio and Proportion Concepts
Research report on an examination of factors which affect a child's understanding or misunderstanding of ratio and proportion.
Presenter - Sandra Atkins

Session 33 St. Croix
The G.A.M.E.S. Experience
Description of an intervention model designed to overcome the factors that have inhibited maximum mathematics learning for 7th and 8th grade female students who have limited desire to be successful in mathematics will be given.
Presenter - Sheryl Maxwell

Session 34 Martinique
Interviewing Students: Some Practical Issues
This presentation addresses a methodology for interviewing students that is extremely useful for understanding aspects of students' mathematical thinking.
Presenter - Joe Garofalo

Session 35 Antigua
Understanding Exponentiation
Description of a teaching experiment to determine whether altering the order in which this topic is taught resulted in greater understanding.
Presenter - Jean Schmitau

11:00 - 12:00 Saturday
Wilson Memorial Lecture Barbados/Aruba
Chair, Francis (Skip) Fennell
Presenter - The Honorable Walter Komanski
Circuit Court Judge
Ninth Judicial Circuit in and of Orlando, Florida

12:00 Conference Closing
HAVE A SAFE TRIP HOME!
THANKS FOR COMING!
SEE YOU NEXT YEAR!

1:00 - 5:00 RCDPM Board Meeting Penthouse
### RCDPM 1993 Conference Program

**February 11 - 12 - 13, 1993**

**Holiday Inn Oceanfront**

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#### Plan your participation

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