

RCML Luncheon

March 7, 2009

Who would ever have believed that a conference that first met at Kent State University in 1974 and developed into an organization would still be alive and meeting 36 years later? It is a honor to be invited to reminisce with you today about mathematics education of the past. The original objectives of RCDPM have completely changed and has evolved into RCML today. Now let's go back in time and take a "Peek at the Past" as to how RCML has evolved into what it is today.

When, where, why, and how did RCML develop?

A seed was planted when a doctoral program was being pursued under mathematics educator Annie McGown at the University of Northern Colorado at Greeley. Annie McGown retired and the degree was completed under the guidance of Dr. Bothal. The mathematics seed germinated and guided my professional development. The philosophy which was gleaned from my doctoral program was that a good solid mathematics program should be based upon understanding of mathematics and not based upon calculating. We should do a better job of teaching mathematics so that every child will have the necessary mathematics skill to live a successful life.

Many adults believe that mathematics is adding, subtracting, multiplying, and dividing. This is not mathematics. These are only the tools of the trade and not mathematics itself. You can find this philosophy in the book and on the included computer disk of TODAY'S MATHEMATICS.

Upon arriving at Kent State University in 1961, Dr. Anita Christ was the sole mathematics educator and was overloaded with work, consequently I was hired to head the mathematics education program at Kent State University. Dr Christ and I were very concerned about the students (both college and public school) that were having difficulty learning mathematics. I believe that the student's mathematics difficulties were really based upon HOW MATHEMATICS WAS TAUGHT and not a characteristic inherent in mathematics. Mathematic teaching seemed to be based upon calculating rather than upon the understanding of mathematics.

Kent State University had a very active and effective reading center. It was a reading laboratory in which children with reading difficulties were diagnosed and remedial procedures prescribed. If this was an effective laboratory for reading difficulties, then

why shouldn't students with mathematics difficulties have a similar facility? Thus in May 11, 1962 Dr. Christ and I developed and presented to the College of Education a proposal to establish a Mathematics Lab at Kent State University. It was immediately approved by the College of Education and the mathematics Lab became a reality. Space was provided, a budget was established, materials were purchased and provisions were made for graduate assistance. At that time, we did not have a mathematics education doctoral program, but the development of the mathematics lab was the beginning of the doctoral program in mathematics education. The mathematics lab was housed in the University school - a kindergarten through high school on campus. We had two offices and an outer conference room. Across the hall was a room for materials and the lab itself.

Dr. Christ retired and Sister Doctor Maryjane Werner was hired to work with me and help develop the mathematics lab. Our main emphasis was focused on students who were suffering and struggling to learn mathematics. Our goals were:

1. To develop diagnostic instruments and procedures.
2. To prescribe remedial procedures for students suffering with mathematics difficulties.
3. To provide a remedial service to public schools children.
4. To provide a practicum for undergraduate students to work with elementary school children in mathematics.
5. To use the mathematic lab as a practical lab for doctoral students.
6. To provide graduate students with practicum supervising undergraduate students teaching elementary children mathematics

Dr Werner and I spent many hours with the help of the doctoral students to develop a CHECK LIST OF MATHEMATICS CONCEPTS. We studied how mathematics concepts develop in children from a philosophical view point and not from a calculating view point. The check list that was developed is still available on the computer disk that accompanies TODAY'S MATHEMATICS.

Before Dr. Werner arrived on campus, I was constantly reviewing the mathematics education literature and noted that Kent State was not the only campus in which remedial mathematics was being studied and researched. Why were all of these mathematics educators studying remedial mathematics and not communicating? Were we all plowing the same field and not sharing our knowledge? How could we cooperatively help each other. Could we have collaborative research projects, could we provide samples for research projects thus providing larger and more diverse populations? Through cooperation could we move forward much more rapidly?

Thus the First National Conference on Remedial Mathematics was held at Kent State University May of 1974. The purposes of the first conference were:

1. To examine diagnostic and prescriptive research in mathematics education.
2. To share remedial mathematics research.
3. To become acquainted with other professionals pursuing similar goals.

The first conference was organized with five major papers presented each being followed by a reaction paper. This would provide an opportunity for researchers to share their basic philosophy about how to help students having difficulty learning mathematics. How can students' mathematics difficulties be diagnosed. Then what procedures could and should be followed to remediate the student's difficulties. The presenters of the papers were to provide an insight into their research and procedures in diagnosing and prescribing remediation for student experiencing mathematics difficulties. Another professional was to provide a reaction paper to help the participants analyze the approaches and gain deeper insights.

The papers were:

Dr. Bob Ashlock & Dr. John Wilson - University of Maryland

Identifying and describing the remedial Mathematics student.

Reaction paper by Dr. Doug Brumbaugh from University of Central Florida.

Dr. Bob Underhill - University of Houston

Classroom Diagnosis

Reaction paper Dr. Tom Denmark - Florida State University

Dr. Jim Heddens - Kent State University

Clinical Diagnosis of Children with Mathematics Difficulties

Reaction paper by Dr. Alan Riedesel from State University of New York at Buffalo

Dr. Tom Romberg -University of Wisconsin - Madison

The Diagnostic process in Mathematics Instruction

Reaction paper by Dr. Mike Hynes - University of Central Florida

Dr. Jon Engelhardt - Arizona State University

Remediation of Learning Difficulties in School Mathematics: Promising Procedures & Directions.

Reaction paper by LeRoy Callahan - State University of New York at Buffalo

Note that the emphasis was strictly on diagnosing and prescribing remediation for

children having difficulty learning mathematics. The papers presented identified some specific areas that needed to be studied.

1. Innovative approaches need to be synthesized.
2. The creation of insightful diagnostic instruments.
3. The creation of diagnostic techniques and procedures.
4. The development of new and interesting materials
5. An examination of research reporting strategies.

In organizing the first conference, there was a major oversight. Dr. Vince Glennon was not invited to participate. Dr Glennon was a respected professor in mathematic education and was the major professor of ~~Bob Ashlock~~ and John Wilson. He would have been a very valuable contributor.

A second and third National Conference on Remedial Mathematic was held at Kent State in 1975 and 1976. The goals of the second & third conferences were more focused than the first conference :

1. How can we cooperatively develop research and share our insights?
2. How can research be cooperatively develop and be organized nationally and Internationally?
3. How can duplication of work & effort be avoided?

At the 1975 conference the group voted to organize into a formal research mathematics organization. The organization would be Research Council for Diagnostic and Prescriptive Mathematics (RCDPM). The organization was created to promote stimulation, generation, coordination, and dissemination of research and development efforts in diagnostic and prescriptive techniques. RCDPM was incorporated in 1978.

Over the 35 years since the conception of the research council, conferences have been held from Coast to coast. The name had gone through changes as well as the purposes of the organization. Now the purpose of the organization is -

The Research Council on Mathematics Learning seeks to stimulate, generate, coordinate, and disseminate research efforts designed to understand and/or influence factors that affect mathematics learning.

Note the difference in emphasis. Originally the organization was to focus on diagnosing and prescribing remedial procedures for students suffering from

mathematics difficulties. The goals and purposes of RCML today are much broader "understand and/or influences that affect mathematic learning. I think some of this was due to the fact that membership was falling and a much broader base would appeal to more professional mathematics educators.

Should the goals and objectives of the organization be reexamined? What does the membership want? Should the organization return to a more narrow focus or should it continue to broaden? How are the paper presented at this conference relate to each other? Is there a body of knowledge being developed or is each of us attaching an area of our own interest and has the cooperative element of coordinating research been lost? What does RCML want to stand for and what does it want to accomplish. If the organization is to survive another 35 years, what must be done?

When I retired from KSU 24 years ago I continued to teach - two years in Africa and then five years at the University of Central Florida making 54 years in the classroom. Since 1985, I just have been teaching and not involved in any research.

As I observe the poorer high school mathematics students, I observe that some are still depending upon counting as part of their mathematics calculating. Count forward to add and count backward to subtract. My hypothesis is that many elementary mathematics program are based on counting and that is the wrong foundation. The foundation for a beginning mathematics program should be based upon subitizing rather than counting. Children should look at a group of things and visualize the numberness immediately. DO NOT COUNT. When two and three are observed they should think five.

My challenge to you is to be a vital and progressive organization providing leadership and significant research in mathematics education. What should the goals and objectives of RCML be in order for it to survive the next 36 years. May RCML be a viable organization that provides mathematics education research that helps steer successful mathematics teaching for many years to come.

I assure you, I will not give the luncheon presentation at the conference in 36 years.

Questions