

## A TELETRAINING DELIVERY SYSTEM FOR INSERVICE INSTRUCTION ON PROBLEM SOLVING FOR MIDDLE SCHOOL TEACHERS

David Kullman

Problem solving has become a major focus on school mathematics in the 1980's, and Miami University is providing inservice instruction on problem solving for middle school teachers in Ohio. Support for this project has been provided by a grant under Title II of the Education for Economic Security Act of 1984, administered by the Ohio Board of Regents.

A unique feature of this project is the development and implementation of a teletraining delivery system. Using two-way audio and computer communication and one-way video communication, the project provides instruction to small groups of teachers at remote locations throughout Ohio. The teachers can remain at their home sites, while the instruction originates from Miami University in Oxford. The teletraining system is also used to assist these teachers in applying the problem solving strategies in their own classrooms. The training is based on an Instructional Model for Problem Solving (IMPS) that is designed to facilitate cognitive development.

The problem solving instruction is designed to give the middle school teachers and their students practice in using a specific set of strategies that have been shown to be effective in solving a variety of mathematical problems. Specifically, these strategies are: guess and check, work backwards, eliminate possibilities systematically, make a model, look at a related problem, and reason deductively. Along with these strategies, participants are taught to make diagrams and tables and to look for patterns. Earlier this year four master teachers and their middle school mathematics classes were videotaped while implementing the above strategies in an actual classroom setting.

Teletraining has been used extensively in industry, and some experimental projects have been carried out with high school students and undergraduates. However, this is the first time that such a delivery system is being used for inservice with middle school teachers.

This project is currently being piloted with 17 teachers at two locations in Darke and Warren counties. Participants meet weekly for a two hour course on Problem Solving for Middle School Mathematics Teachers. A diskette with graphics materials is mailed to the remote locations each week, along with printed notes and problem assignments. Participants mail their solutions back to Oxford to be graded. Each participant receives a tuition waiver and a \$200 stipend. The course will be repeated in the fall semester, 1987, at sites yet to be determined.

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Learning and Teaching Geometry, K-12. 1987 NCTM Yearbook (\$16.00)

Geometry for Grades K-6: Readings from the Arithmetic Teacher.  
(\$9.50)

Problem -solving Techniques Helpful in Mathematics and Science (\$4.00)

How to Teach Mathematics Using a Calculator: Activities for Elementary and Middle School (\$5.60)

Teaching and Learning: A Problem-solving Focus (\$12.00)

Stories of Excellence: Ten Case Studies from A Study of Exemplary Mathematics Programs (\$9.00)