

STAGES OF THE SYSTEMIC CHANGE PROCESS

by
F. Joseph Merlino
Project Director
Greater Philadelphia Secondary Mathematics Project
January, 2000

1. Pre-Commitment: (6 to 12 months)

A. Initial Contact: The change process usually begins with a telephone call from a school official, typically a math supervisor or director of curriculum, about possible participation in the project. They will have learned about our project from any one of a number of sources:

- 1) Conference-related presentations: NCTM-related, New Standards Project School, NSF/RBS, NJSSI;
- 2) Publications: electronic, newsletter, newspaper;
- 3) Personal Networking: previous contacts, word-of-mouth, other NSF, USDOE or other education reform projects.

B. Initial meeting: After I pre-qualify a prospective school, an initial meeting is arranged at the school site. In attendance at this meeting are usually the director of curriculum, assistant superintendent, secondary math supervisor (s) or department head (s), myself and another member of our team. In smaller districts, the superintendent or school board members may also be in attendance.

This meeting usually lasts two hours. The purposes of the meeting are for us to gain an understanding of the district=s students, teachers, administration, history, politics; the current state of their mathematics program, their educational goals, priorities and instructional vision.

We then outline how our project can assist them to accomplish their goals. At this time, we distribute to them a folder containing information on our project. A period of questions and answers follows.

If at the conclusion of the meeting there is a mutual sense that we can work together, I describe the next steps in the change process. I emphasize that the decision to keep going forward is Ascaffolded@ at each step in the process. The next step for the school officials after the initial meeting is for them to meet by themselves to debrief each other and outline further questions and issues.

C. Subsequent Meetings with Administrators: If the school wants to continue the process, (and most do), the director of curriculum or assistant superintendent calls to arrange what usually

becomes a series of follow-up meetings. At these meetings other administrators, such as principals, the superintendent, board members and lead teachers, are brought into the discussion.

These meetings are used to discuss various issues, some of which are fairly generic while others may be specific to their school. In response to their questions, I may distribute to the school a more formal proposal of 21 pages for their information and discussion.

D. Initial Meeting with Teachers. Once the district administrators and I determine that there is sufficient interest, desire and capacity to become partners, a meeting is arranged with the secondary mathematics staff, grades 6 to 12. This meeting usually requires about three hours. (Two or three meetings or shorter duration may be combined.)

At this first teachers= meeting, the administrators are present. They introduce and explain the purpose of the meeting which is billed as only a @get acquainted session.@ We emphasize at the outset that no decisions about committing to the project, either by us or by the administration has been made as we want the teachers to be a part of the decision making process.

Next, we pose a series of questions to the assembled teachers, either verbally or in writing, for them to individually consider followed by small group discussion and then large group reporting out. The questions attempt to elicit the following:

1) Teachers= educational goals for their students. We compile a list from their own statements that all teachers present can agree on. We try to probe for further explanations of items like Aproblem-solving@ by providing successively more open-ended examples of Aproblems@ for their consideration. Teachers invariably list items that essentially match the NCTM standards.

2) Once the teachers= goals are articulated and posted on the wall, we then ask the teachers to individually grade, on a AA to F@ scale, how well their school=s students are reaching the math education goals they have agreed are important. All the grades are then compiled and displayed. Usually the mean is a AC@ with a few ABs and Ds.@

3) Teachers are then asked to list all of the obstacles to students reaching these goals. Rarely do teachers list their current curriculum and instruction as obstacles to student achievement. Virtually all of the obstacles are external to their own teaching.

4) A final questionnaire is given to the teachers, which is a set of forced choice questions about their beliefs about effective curriculum and instruction. We compile the results on an overhead and use the results to gauge the degree of teacher consensus or dissent, as well as how receptive they may be to inquiry-based curriculum and student-centered pedagogy.

5) The end result of this line of questions and discussions to open teachers up to the possibility of change around math teaching and learning, and get them to assent to stage 2.

2. Commitment to Explore Curricula and Instructional Changes (3 to 6 months)

A. Follow-up in-service with middle and high school teachers together. (2 to 3 hours)

- 1) Exploring the meaning of problem solving, constructivist pedagogy, and inquiry-based learning
- 2) This in-service is designed to prepare teachers to accept training in replacement units

B. Optional addition in-services (2 -3 hours each sessions)

- 1) cooperative learning,
- 2) state assessments and use of rubrics.
- 3) problem-solving using the graphics calculator

C. Replacement unit training

1) For high school teachers: 12 hours per unit. Teachers have their choice of math topic, e.g., statistics, algebra or geometry. We recommend ALL high school math teachers train and implement at least one replacement unit. The time of the training can be configured in a variety of formats, for example: 2 x 6 hour sessions; 3 x 4 hour sessions; or 4 x 3 hours sessions. The sessions can be done during school, after school, on regular in-service days or on Saturdays.

2) For middle school teachers: 6 hours per unit. We recommend ALL middle school teachers train and implement at least one replacement unit, preferably two. The time of the training can be configured in a variety of formats, for example: 1 x 6 hour sessions; 2 x 3 hour sessions. The sessions can be done during school, after school, on regular in-service days or on Saturdays.

D. Replacement unit implementation - GPSMP provides all training and mentors teachers when they begin to implement a replacement unit in their classroom(s).

E. School visitations

1) Once teachers are trained and implement at least one replacement unit, we then recommend they visit several schools implementing different secondary exemplary math curriculum, e.g., IMP or Core-plus, Connected Math or Math-in-Context.

2) School visits should be arranged with schools similar in student demographics.

3) A variety of classes should be observed, i.e., high to low performing students;

experienced and inexperienced teachers, block versus traditional scheduling.

3. Commitment to Adopt One of Various NSF Curricula (1 to 3 months)

A. More debriefing meetings with teachers, administrators and school board members concerning implementation issues before during and after teachers implement their replacement units.

B. Budgeting

1) Summer and academic year training (A total of 10 days per year)

2) Textbooks (1 new level per year)

3) Classroom supplies:

a) classroom set of graphics calculators (35)

b) 1 overhead projector

c) 1 overhead graphic calculator and LCD panel

d) classroom consumables and durable materials (\$300)

4. Adoption of a Specific NSF Curriculum (1 to 3 months)

A. NSF curriculum review process (See Bethlehem Area SD for example)

B. Community & Parent Involvement

1) Scheduling pre and post implementation Family Math Nights

2) Presentation before school board: This is a more formal presentation for a decision and commitment. It should follow previous presentations, which were informational in nature.

5. Piloting New Curriculum in Regular Classes (4 to 12 months)

A. Summer training,

B. Academic year implementation

C. Mentoring

D. Decision to scale-up

6. Full-Implementation (3 to 5 years)

A. Summer and academic year training,

B. Academic year implementation

C. Mentoring

D. Management Issues

E. Evaluation

F. Political Issues

7. School District Institutionalization (5 to 10 years)

A. Continual training

B. Hiring policies

C. Teacher evaluation and assignment criteria

D. Pre-service/teacher education linkages

8. Local and Regional Leadership Development (3 to 7 years)

A. Presenters

B. Mentors

C. Demonstration Schools

c:\wp8\school change for NSF