

**A Longitudinal/Cross-Sectional Study of the Impact of *Mathematics in Context*
on Student Mathematical Performance**

Teacher Questionnaire: School Context
(Working Paper #10)

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Teacher Questionnaire III: School Context

The purpose of Teacher Questionnaire III was to gather information on the context of the schools in which teachers work. Questionnaire items were adapted from the Center for Educational Work (1997); Center on Organization and Restructuring of Schools (1996); Local Systemic Change (1996); National Center for Improving Student Learning & Achievement in Mathematics & Science (1997); Porter, Kirst, Osthoff, Smithson, & Schneider (1993); Urban Mathematics Collaborative (1990); and Webb & Dowling (1993).

In the initial part of the questionnaire, the teacher listed local information, including the school name and address. In the first section of the questionnaire, the teacher described the nature of the school as a workplace. In Item 1, the teacher indicated the degree of influence he/she felt that teachers had over policy in school on a continuum from “no influence” to “a great deal of influence.” Information with respect to seven statements was collected, including influence over important educational decisions, discipline, curriculum, professional development, evaluation of teachers, hiring, and budgets. In the second item, the teacher indicated the degree of control he/she felt that teachers had in their classrooms on a continuum for “no control” to “complete control.” Information with respect to six statements was gathered, including selection of instructional materials, content, teaching methods, homework, grading, and discipline. In the third item, the teacher indicated the degree of agreement with nine statements regarding vision of student learning and the level of cooperation for accomplishing this vision. Each statement was accompanied by a 5-point Likert scale indicating the teacher’s level of agreement: “strongly disagree,” “disagree,” “no opinion,” “agree,” and “strongly agree.” In Item 4, the teacher indicated the extent to which district and school administrators and staff and external consultants helped him/her to improve teaching. Each professional category was rated on a continuum from “no help” to “extremely helpful.” A rating of “not applicable” was also available. Information was collected on seven categories, including principal, assistant principal, school curriculum specialist, district curriculum specialist, other teachers in school, other teachers in the district, university professors or researchers, and other (with a request for description).

In the second section of the questionnaire, the teacher described the nature of the support environment created by the administration and other teachers (Item 5). Information with respect to six statements was gathered on a 5-point Likert scale indicating the teacher’s level of agreement: “strongly disagree,” “disagree,” “don’t know,” “agree,” and “strongly agree.” In the third section of the questionnaire, the teacher described the nature of the climate for professional development present in the school (Item 6) through rating each of six statements on a continuum including “rarely or never,” “somewhat common,” “very common,” and “always.” In the fourth section of the questionnaire, the teacher responded to 22 statements intended to characterize his/her conceptions about mathematics teaching and learning (Item 7). Data collection included information about mathematics as a discipline, use of context, mastery of basic skills versus problem solving, use of calculators, content coverage, and aspects of instruction. Each statement was accompanied by a 5-point Likert scale indicating the teacher’s level of agreement: “strongly disagree,” “disagree,” “no opinion,” “agree,” and “strongly agree.”

In the final section of the questionnaire, the teacher described the nature of his/her assessment of student learning (Item 8). The teacher indicated the extent to which he/she used particular assessment methods on a continuum including “never,” “sometimes,” “often,” and “always.” The teacher also indicated the importance of each method in determining what to teach next and in determining student grades by rating each method on a continuum including “not important at all,” “not very important,” “somewhat important,” and “very important.”

Teachers completed the questionnaire in the fall of the first year of their participation in the study and in the spring of each year of their participation. For the fall administration, teachers in Districts 1 and 2 completed the questionnaire during the professional development institutes provided by the research team in the August prior to the school year. Each teacher received an honorarium for participating in the August institutes. Teachers in Districts 3 and 4, and teachers in Districts 1 and 2 who did not attend the institutes, completed the questionnaire (along with other teacher questionnaires) at times that were convenient for them and that did not interfere with classroom instruction, such as during their planning time or before or after school. These teachers received an honorarium of \$50 upon receipt of all questionnaires at the research center. For the spring administration in the first and second study years, teachers in all districts completed the questionnaire (along with another questionnaire) during the spring professional development institutes provided by the research team. In the spring of the third study year, teachers in Districts 1, 2, and 4 completed the questionnaire during the spring professional development institutes. Teachers received release time to participate in the spring institutes. Teachers who did not attend the institutes completed the questionnaire (along with another teacher questionnaire) at times that were convenient for them and that did not interfere with classroom instruction. These teachers received an honorarium of \$50 upon receipt of all questionnaires at the research center. Ninety-six percent of the teachers completed questionnaires.

References

Center on Organization and Restructuring of Schools. (1996). *Teacher questionnaire*. Madison, WI: University of Wisconsin–Madison.

Local Systemic Change. (1996). *Local systemic change teacher questionnaire (mathematics)*. Madison, WI: University of Wisconsin–Madison.

National Center for Improving Student Learning & Achievement in Mathematics & Science. (1997). *Elementary school teacher questionnaire*. Madison, WI: University of Wisconsin–Madison.

Porter, A. C., Kirst, M. W., Osthoff, E. J., Smithson, J. L., & Schneider, S. A. (1993). *Reform up close: A classroom analysis*. Madison, WI: University of Wisconsin–Madison.

Urban Mathematics Collaborative Documentation Project. (1990). *Teacher questionnaires*. Madison, WI: University of Wisconsin–Madison.

Webb, N. L., & Dowling, M. (1993). *Evaluation study of the interactive mathematics program (IMP): A preliminary report on the results of questionnaires administered to teachers, students, and parents*. Madison, WI: University of Wisconsin–Madison.



Teacher Questionnaire III: School Context

Thank you for completing this questionnaire. Your responses will enable the staff of the longitudinal study to learn more about the conditions that support and hinder the work of teachers in elementary and middle school mathematics.

Your responses will be kept confidential. Your responses will not be used to evaluate you in any way. Your name will not be mentioned in reports of this research. The information on this sheet will help us ensure that a questionnaire was received from each teacher in the study.

We hope that you will answer every question, but you may skip any questions you do not wish to answer. When you have completed the questionnaire, please look over your responses to see that you have not skipped anything unintentionally.

Last name

First name

MI

District

School

City

State

Zip Code

School as a Workplace

1. At this school, how much actual influence do you think teachers have over school policy in each of the following areas? (Circle one response for each statement.)

	No influence			A great deal of influence	
a. Making important educational decisions	1	2	3	4	5
b. Setting discipline policy	1	2	3	4	5
c. Establishing curriculum	1	2	3	4	5
d. Determining the content of professional development programs	1	2	3	4	5
e. Evaluating teachers	1	2	3	4	5
f. Hiring new full-time teachers	1	2	3	4	5
g. Deciding how the school budget will be spent	1	2	3	4	5

2. At this school, how much control do you feel you have in your classroom over each of the following areas of your planning and teaching? (Circle one response for each statement.)

	No control			Complete control	
a. Selecting textbooks and other instructional materials	1	2	3	4	5
b. Selecting content, topics, and skills to be taught	1	2	3	4	5
c. Selecting teaching methods	1	2	3	4	5
d. Determining the amount of homework to be assigned	1	2	3	4	5
e. Evaluating and grading students	1	2	3	4	5
f. Disciplining students	1	2	3	4	5

3. Please indicate how strongly you agree or disagree with each of the following statements about your school. (Circle one response for each statement.)

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a. The school administration lets staff members know what is expected of them.	1	2	3	4	5
b. The school administration is supportive and encouraging to the staff.	1	2	3	4	5
c. The school administration does a good job of obtaining resources for this school.	1	2	3	4	5
d. The school administration has a clear vision for the school and has communicated this to the staff.	1	2	3	4	5
e. There is a great deal of cooperative effort among the staff members at my school.	1	2	3	4	5
f. Teachers in this school are continually learning and seeking new ideas.	1	2	3	4	5
g. Staff members maintain high standards of performance for themselves.	1	2	3	4	5
h. Teachers in this school exhibit a focused commitment to student learning in mathematics.	1	2	3	4	5
i. A vision for student learning in mathematics is shared by most staff in this school.	1	2	3	4	5

4. To what extent has each of the following people helped you improve your teaching or solve an instructional or class management problem? (Circle one for each statement.)

	No help				Extremely helpful	Not applicable
a. Principal of this school	1	2	3	4	5	6
b. Assistant/vice-principal						6
	1	2	3	4	5	
c. School curriculum specialist	1	2	3	4	5	6
d. District curriculum specialist	1	2	3	4	5	6
e. Other teachers at this school	1	2	3	4	5	6
f. Other teachers in the district	1	2	3	4	5	6
g. University professors or researchers	1	2	3	4	5	6
h. Other (Please specify)	1	2	3	4	5	6

Support Environment

5. Please indicate how strongly you agree or disagree with each of the following statements about your school. (Circle one response for each statement.)

	Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
a. I feel supported by other teachers to try out new ideas in teaching mathematics.	1	2	3	4	5
b. The school administration is supportive and encouraging toward the teachers.	1	2	3	4	5
c. The school administration talks with me frequently about my instructional practices.	1	2	3	4	5
d. I am encouraged by school administrators to try out new ideas in teaching mathematics.	1	2	3	4	5
e. The administration encourages me to observe exemplary mathematics teachers.	1	2	3	4	5
f. The administration enhances the mathematics program by providing me with the materials and equipment that I need.	1	2	3	4	5

Professional Development Climate

6. Consider the professional development climate in your school. How common is each of the following? (Circle one response for each statement.)

	Rarely Or Never	Somewhat Common	Very Common	Always
a. When my school decides upon a change (e.g., in policy or incurriculum), the change is supported with professional development opportunities.	1	2	3	4
b. Most professional development at this school enables us to build on our teaching experience.	1	2	3	4
c. This school draws upon teachers knowledge and practical experience as resources for professional development.	1	2	3	4
d. Teachers in this school help one another put new ideas from professional development activities to use.	1	2	3	4
e. Teachers are left completely on their own to seek out professional development opportunities.	1	2	3	4

Mathematics Teaching and Learning

7. Please indicate how strongly you agree or disagree with each of the following statements about mathematics teaching and learning. (Circle one response for each statement.)

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a. Students learn best when they study mathematics in the context of everyday situations.	1	2	3	4	5
b. Mathematics is a collection of concepts and skills used to obtain answers to problems.	1	2	3	4	5

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
c. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.	1	2	3	4	5
d. Students learn mathematics best in classes where they are able to work in small groups.	1	2	3	4	5
e. If students use calculators, they won't learn the mathematics they need to know.	1	2	3	4	5
f. Students should write about how they solve mathematical problems.	1	2	3	4	5
g. It is more important to cover fewer topics in greater depth than it is to cover the text.	1	2	3	4	5
h. Teaching a mathematical concept should begin with a concrete example or model.	1	2	3	4	5
i. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.	1	2	3	4	5
j. Instruction should include step-by-step directions.	1	2	3	4	5
k. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.	1	2	3	4	5
l. Teachers should plan instruction based upon their knowledge of their students' understanding.	1	2	3	4	5
m. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.	1	2	3	4	5
n. Mathematics is facts, skills, rules and concepts learned in some sequence and applied in work and future study.	1	2	3	4	5

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
o. Students must learn basic skills before they can be expected to analyze, compare, and generalize.	1	2	3	4	5
p. Instruction should include many open-ended tasks.	1	2	3	4	5
q. Students should learn mathematics through regularly discussing their ideas with other students.	1	2	3	4	5
r. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.	1	2	3	4	5
s. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.	1	2	3	4	5
t. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.	1	2	3	4	5
u. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.	1	2	3	4	5
v. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.	1	2	3	4	5

Assessing Student Learning

8. How often do you use the following to determine what your students know about mathematics? How important is each of these in determining (1) what to teach next and (2) student grades?

	USE				IMPORTANCE							
					What to Teach Next				Student Grades			
	Never	Some- times	Often	Always	Not important at all	Not very important	Some- what important	Very important	Not import at all	Not very import	Some- what import	Very important
a. Performance on standardized tests	1	2	3	4	5	6	7	8	9	10	11	12
b. Performance on classroom projects	1	2	3	4	5	6	7	8	9	10	11	12
c. Performance on quizzes and tests	1	2	3	4	5	6	7	8	9	10	11	12
d. The questions students ask	1	2	3	4	5	6	7	8	9	10	11	12
e. Oral explanations students give	1	2	3	4	5	6	7	8	9	10	11	12
f. Written explanations students give on classwork and assignments	1	2	3	4	5	6	7	8	9	10	11	12
g. Portfolios of student work	1	2	3	4	5	6	7	8	9	10	11	12
h. Work you have observed	1	2	3	4	5	6	7	8	9	10	11	12
i. Student work across assessments to think about growth in content and reasoning	1	2	3	4	5	6	7	8	9	10	11	12