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

Teacher Background Data for 1998-1999

(Technical Report #25)

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INTRODUCTION

The purposes of the longitudinal/cross-sectional study of the impact of *Mathematics in Context* (MiC; National Center for Research in Mathematical Sciences Education & Freudenthal Institute, 1997–1998) on student performance are (a) to determine the mathematical knowledge, understanding, attitudes, and levels of student performance as a consequence of studying MiC for over three years; and (b) to compare student knowledge, understanding, attitudes, and levels of performance of students using MiC with those using conventional mathematics curricula. The research model for this study is an adaptation of a structural model for monitoring changes in school mathematics (Romberg, 1987). For this study, information is being gathered on 14 variables over a 3-year period for three groups of students (those in Grades 6, 7, and 8 in 1998). The variables have been organized in five categories (prior, independent, intervening, outcome, and consequent). (See Figure 1 for variables and hypothesized relationships.)

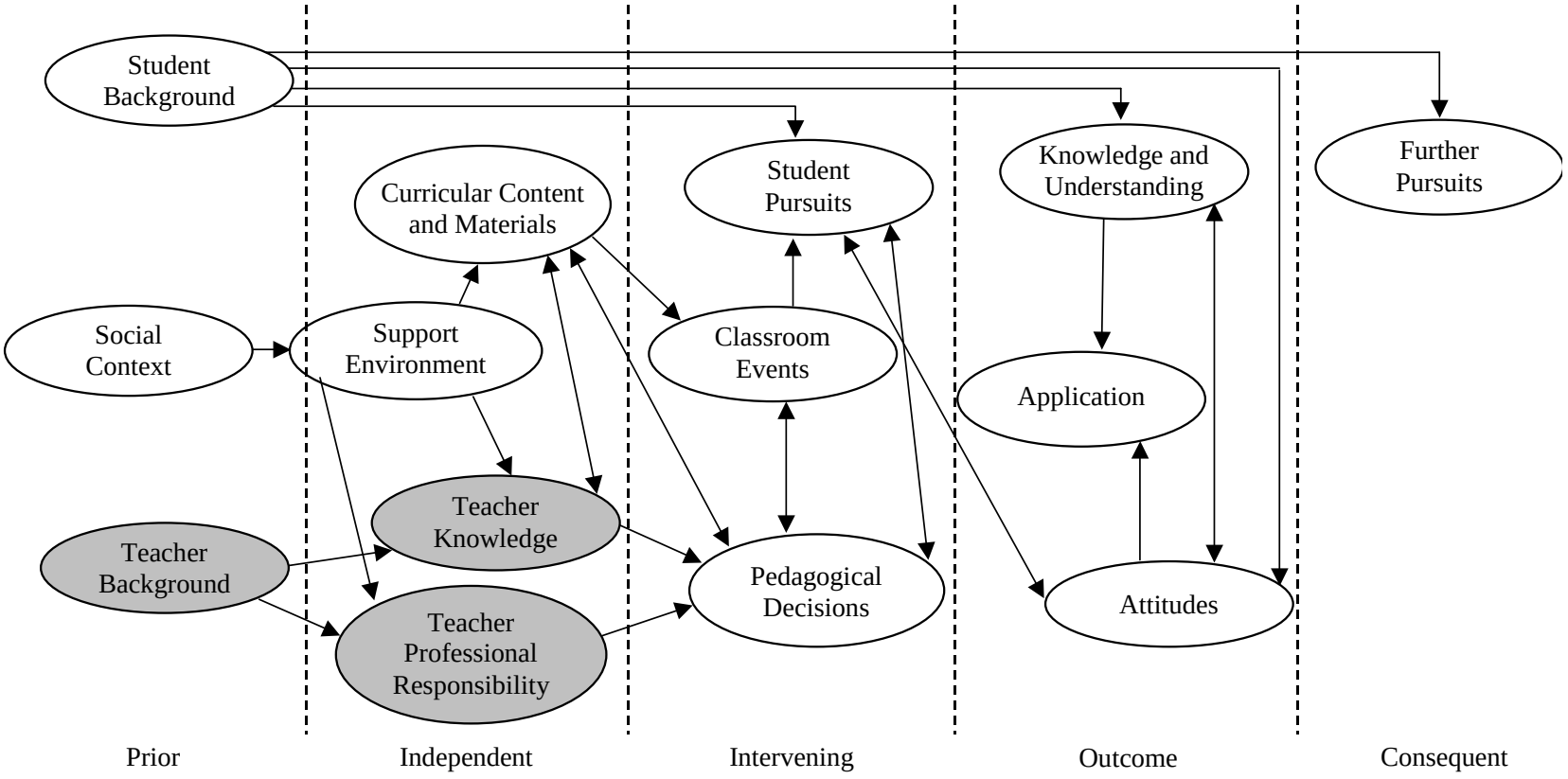

Figure 1. Revised model for the monitoring of school mathematics.

Overview: Teacher Background Data for 1998-1999

The purpose of this technical report is to summarize the information of the *Teacher Background* variable collected during spring and fall 1998[1] on teachers new to the longitudinal/cross-sectional study of the impact of *Mathematics in Context* on student performance. The purpose of gathering this information was to describe similarities and differences among the Grade 6, Grade 7, and Grade 8 study teachers. Characteristics for teachers at each grade level — sex, ethnicity, educational background, teaching experience, experience teaching mathematics, and experience teaching at the current school — were gathered via Teacher Questionnaire: Background and Experience (Shafer, Davis, & Wagner, 1997) and data about experience teaching *Mathematics in Context* were gathered via Teacher Questionnaire: Experience Teaching *Mathematics in Context* (Shafer, 1997). Information about each teacher's conceptions about mathematics teaching and learning and their assessment of student learning is gathered via Teacher Questionnaire: School Context (Shafer, Davis, & Wagner, 1997). (See Figure 2).

Nineteen sixth-grade teachers, 17 seventh-grade teachers, and 14 eighth-grade teachers from 10 schools in four districts participated in the study. Districts are identified by number; school and teacher names are pseudonyms. Also noted are the type of materials used (MiC materials or a conventional text).

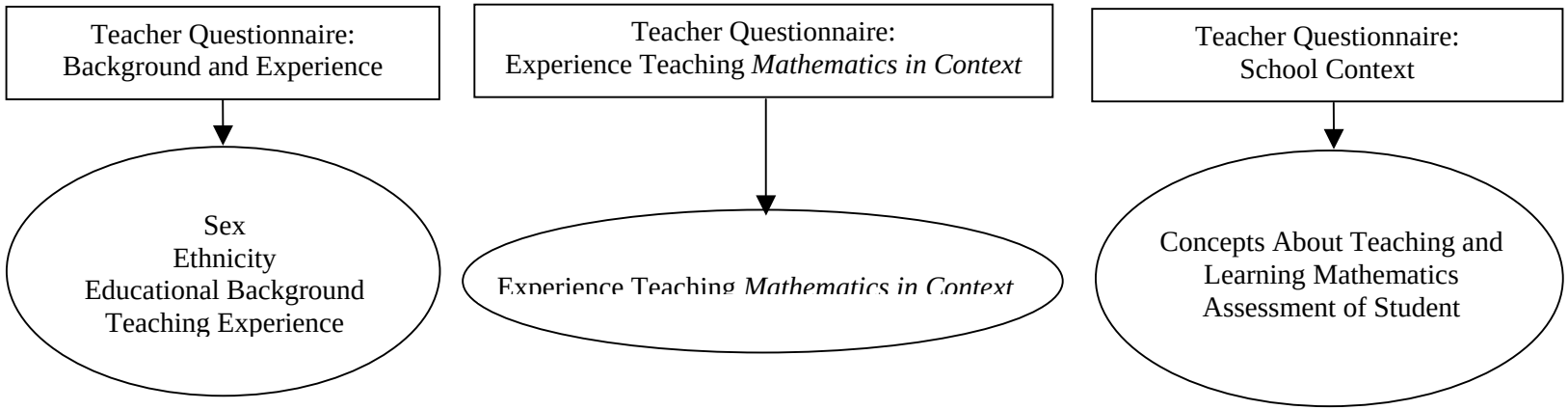

Figure 2. Teacher background characteristics in longitudinal/cross-sectional study of the impact of *Mathematics in Context* on student performance and their sources.

[1] Data in this report was collected from questionnaires teachers completed during the first year they participated in the study.

Grade 6

District 1

Table 1

Summary Data on Background Characteristics, Sixth-Grade Teachers in 1998-1999, District 1

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Addams-Gollen	F	White	16	2	1	6	pre-school, 2, 3, 4	Mathematics specialist for the school
Fernwood-Weatherspoon	F	White	1	3	1	6	6, 7, 8	Classroom teacher
Von Humboldt-Brown	M	White	13	4	11	6	4, 5, 6, 7, 8	Lead Teacher
Von Humboldt-Parsons	F	Other	1	1/4	0	6	4, 5, 6	Classroom teacher
Wacker-Lovell*								
				— Conventional —				
Fernwood-Harrison	F	White	2	0	0	6th-math only	6, 7	Classroom teacher

* Lovell did not complete this teacher questionnaire.

Table 2

Experience Teaching Mathematics in Context, Sixth-Grade Teachers in 1998-1999, District 1

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
	— MiC —		
Addams-Gollen	Less than one semester	0	None
Fernwood-Weatherspoon	One year	5	Made to Measure, Fraction Times, Expressions and Formulas, Tracking Graphs
Von Humboldt-Brown	One year	*	*
Von Humboldt-Parsons	Less than one semester	0	None
Wacker-Lovell	0	0	None
	— Conventional —		
Fernwood-Harrison	Less than one semester	0	None

* Data missing from Brown's questionnaire.

Table 3

Professional Training, Sixth-Grade Teachers in 1998-1999, District 1

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
				— MiC —						
Addams-Gollen	Education	History/French	6 or 7	Education	Administration	3				
Fernwood-Weatherspoon	History		3	Elem. Ed		1				
Von Humboldt-Brown	Elem. Education		5 or 6							
Von Humboldt-Parsons	Multidisciplinary Social science			Elementary Education		1				
Wacker-Lovell*										
				— Conventional —						
Fernwood-Harrison	Elem. Ed.									

* Lovell did not complete this teacher questionnaire.

Table 4

Characterization of Mathematics, Sixth-Grade Teachers in 1998-1999, District 1

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— MiC —		
Addams-Gollen	Strongly agree	Strongly disagree	Strongly agree	Strongly agree
Fernwood-Weatherspoon	Agree	Disagree	Agree	Agree
Von Humboldt-Brown*				
Von Humboldt-Parsons	Strongly agree	Agree	Strongly agree	Strongly agree
Wacker-Lovell*				
		— Conventional —		
Fernwood-Harrison	Agree	Strongly agree	Agree	Strongly agree

* Brown and Lovell did not complete this teacher questionnaire

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 5

Mathematics Teaching and Learning, Sixth-Grade Teachers in 1998-1999, District 1, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Addams-Gollen	Strongly agree	Disagree	Strongly disagree	Agree	Disagree	Strongly agree
Fernwood-Weatherspoon	Agree	Agree	Agree	Disagree	Disagree	Strongly agree
Von Humboldt-Brown*						
Von Humboldt-Parsons	Strongly agree	Strongly agree	Disagree	Agree	Strongly disagree	Strongly agree
Wacker-Lovell*						
			— Conventional —			
Fernwood-Harrison	Strongly agree	Agree	Disagree	No opinion	Disagree	Agree

* Brown and Lovell did not complete this teacher questionnaire.

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 6

Mathematics Teaching and Learning, Sixth-Grade Teachers in 1998-1999, District 1, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Addams-Gollen	Strongly agree	Strongly agree	Strongly disagree	Strongly disagree	Agree	Strongly agree
Fernwood-Weatherspoon	Agree	Disagree	Agree	Disagree	Disagree	Agree
Von Humboldt-Brown*						
Von Humboldt-Parsons	Strongly agree	Agree	Strongly agree	Strongly disagree	Agree	Strongly agree
Wacker-Lovell*						
			— Conventional —			
Fernwood-Harrison	Agree	Strongly agree	Agree	Strongly agree	Strongly agree	Agree

School-Teacher	Pedagogy					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Addams-Gollen	Agree	Strongly agree	Strongly agree	Strongly agree	No opinion	Strongly agree
Fernwood-Weatherspoon	Agree	Agree	No opinion	Agree	Agree	Strongly agree
Von Humboldt-Brown*						
Von Humboldt-Parsons	No opinion	Strongly agree	Agree	Strongly agree	Agree	Agree
Wacker-Lovell*						
			— Conventional —			
Fernwood-Harrison	Agree	No opinion	Agree	Agree	Strongly agree	Agree

* Brown and Lovell did not complete this teacher questionnaire.

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 7

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Sixth-Grade Teachers in 1998-1999, District 1

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Addams-Gollen	Sometimes	Not important at all	Not very important	Always	Very important	Very important
Fernwood-Weatherspoon	Never	Not important at all	Not important at all	Often	Not important at all	Somewhat important
Von Humboldt-Brown*						
Von Humboldt-Parsons	Never			Sometimes	Somewhat important	Somewhat important
Wacker-Lovell*						
			— Conventional —			
Fernwood-Harrison	Sometimes	Somewhat important	Not important at all	Often	Somewhat important	Very important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Addams-Gollen	Always	Very important	Very important	Always	Very important	Very important
Fernwood-Weatherspoon	Often	Very important	Very important	Sometimes	Not very important	Somewhat important
Von Humboldt-Brown*						
Von Humboldt-Parsons	Often	Somewhat important	Very important	Never		
Wacker-Lovell*						
			— Conventional —			
Fernwood-Harrison	Always	Somewhat important	Very important	Often	Somewhat important	Very important

* Brown and Lovell did not complete this teacher questionnaire.

Table 8

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Sixth-Grade Teachers in 1998-1999, District 1

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —									
Addams-Gollen	Always	Very important	Very important	Always	Very important	Very important	Always	Very important	Very important
Fernwood-Weatherspoon	Always	Very important	Not important at all	Always	Somewhat important	Not very important	Often	Somewhat important	Somewhat important
Von Humboldt-Brown*									
Von Humboldt-Parsons	Always	Very important	Somewhat important	Always	Very important	Somewhat important	Often	Somewhat important	Somewhat important
Wacker-Lovell*									
— Conventional —									
Fernwood-Harrison	Always	Not very important	Not important at all	Sometimes	Not important at all	Not important at all	Sometimes	Not important at all	Not very important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —						
Addams-Gollen	Always	Very important	Very important	Always	Very important	Very important
Fernwood-Weatherspoon	Often	Somewhat important	Somewhat important	Sometimes	Not important at all	Not very important
Von Humboldt-Brown*						
Von Humboldt-Parsons	Always	Very important	Very important			
Wacker-Lovell*						
— Conventional —						
Fernwood-Harrison	Sometimes	Not very important	Not very important	Often	Very important	

* Brown and Lovell did not complete this teacher questionnaire.

District 2

Table 9

Summary Data on Background Characteristics, Sixth-Grade Teachers in 1998-1999, District 2

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Guggenheim-Broughton	F	African American	13		13	6, 7, 8	6, 7, 8, 9	Lead Teacher
Guggenheim-Redling	F	White	14	0	2	6	6, 7, 8	Classroom teacher
Weir-Ferguson	F	White	2	0	1	6	2	Classroom teacher
Weir-Kellner	F	African American	0	0	0	0	0	Classroom teacher
				— Conventional —				
Newberry-Renlund	F	African American	3	1	2	6, 8	6, 8	Classroom teacher
Von Steuben-Friedman	F	White	6	18	0	6, 7	5, 6, 7, 8, 9, 10, 11	Classroom teacher

Table 10

Experience Teaching Mathematics in Context, Sixth-Grade Teachers in 1998-1999, District 2

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
		— MiC —	
Guggenheim-Broughton	One year	5	Side Seeing, Fraction Times, Expressions and Formulas, Packages and Polygons, Looking at an Angle
Guggenheim-Redling	More than two years	2 to 4	**
Weir-Ferguson	0	0	Some of the Parts, Measure for Measure, Patterns and Symbols, Fraction Times, Expressions and Formulas, Tracking Graphs, Comparing Quantities, Operations, Looking at an Angle, Powers of Ten, Graphing Equations, Patterns and Figures*
Weir-Kellner	One semester	2	Measure for Measure, Per Sense
		— Conventional —	
Newberry-Renlund**			
Von Steuben-Friedman	0	0	None

* Ferguson taught MiC in years before to study.

** Data missing from Redling's questionnaire.

Table 11

Professional Training, Sixth-Grade Teachers in 1998-1999, District 2

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
— MiC —										
Guggenheim-Broughton	Business Administration	Economics	3	Computer Education						
Guggenheim-Redling	Elem. Education		5							Middle school mathematics certification grades 5-9
Weir-Ferguson	Early Childhood	Elementary Ed.		Special Education						
Weir-Kellner										
— Conventional —										
Newberry-Renlund*	Marketing		18	Mathematics Education	Accounting	5				
Von Steuben-Friedman	Math Education		15							

* Data missing from Renlund's questionnaire.

Table 12

Characterization of Mathematics, Sixth-Grade Teachers in 1998-1999, District 2

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— MiC —		
Guggenheim-Broughton	Strongly agree	No opinion	Agree	Agree
Guggenheim-Redling	No opinion	Disagree	Agree	Agree
Weir-Ferguson	Agree	Agree	Agree	Agree
Weir-Kellner	Agree	Strongly agree	Agree	Agree
		— Conventional —		
Newberry-Renlund	Agree	No opinion	Strongly agree	Agree
Von Steuben-Friedman	No opinion	No opinion	Strongly agree	No opinion

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 13

Mathematics Teaching and Learning, Sixth-Grade Teachers in 1998-1999, District 2, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Guggenheim-Broughton	Agree	Agree	Disagree	No opinion	Disagree	Agree
Guggenheim-Redling	Agree	No opinion	No opinion	Agree	Disagree	Strongly agree
Weir-Ferguson	Agree	Agree	Agree	No opinion		Strongly agree
Weir-Kellner	Agree	Agree	Disagree	Agree	Disagree	Strongly agree
			— Conventional —			
Newberry-Renlund	Strongly agree	Agree	Agree	Agree	Disagree	Agree
Von Steuben-Friedman	Agree	Strongly agree	Strongly agree	Disagree	No opinion	Agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 14

Mathematics Teaching and Learning, Sixth-Grade Teachers in 1998-1999, District 2, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Guggenheim-Broughton	Agree	Agree	Disagree	Agree	Agree	Disagree
Guggenheim-Redling	No opinion	Agree	No opinion	Agree	No opinion	Agree
Weir-Ferguson	Agree	Agree	Agree	Agree	Agree	Disagree
Weir-Kellner	Disagree	Agree	Disagree	Agree	Agree	Disagree
			— Conventional —			
Newberry-Renlund	Agree	Agree	Agree	Agree	Strongly agree	Agree
Von Steuben-Friedman	Agree	Disagree	Strongly agree	Agree	Agree	Agree

School-Teacher	Pedagogy					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Guggenheim-Broughton	Agree	Agree	Agree	Agree	Agree	Agree
Guggenheim-Redling	Agree	Agree	No opinion	Agree	Agree	Agree
Weir-Ferguson	No opinion	No opinion	Agree	Agree	Disagree	Agree
Weir-Kellner	Agree	Strongly agree	Agree	Agree	Agree	Agree
			— Conventional —			
Newberry-Renlund	No opinion	No opinion	Agree	Agree	No opinion	Agree
Von Steuben-Friedman	Agree	No opinion	No opinion	Disagree	Agree	No opinion

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 15

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Sixth-Grade Teachers in 1998-1999, District 2

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Guggenheim-Broughton	Often	Not very important	Not very important	Sometimes	Not important at all	Somewhat important
Guggenheim-Redling	Sometimes	Not very important	Not very important	Often	Somewhat important	Somewhat important
Weir-Ferguson	Sometimes	Somewhat important	Not very important	Often	Not very important	Somewhat important
Weir-Kellner	Sometimes	Very important	Somewhat important	Often	Somewhat important	Somewhat important
			— Conventional —			
Newberry-Renlund	Sometimes	Not very important	Somewhat important	Often	Somewhat important	Very important
Von Steuben-Friedman	Sometimes	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Guggenheim-Broughton	Often	Somewhat important	Very important	Sometimes	Not very important	Somewhat important
Guggenheim-Redling	Sometimes	Not very important	Not very important	Often	Very important	Very important
Weir-Ferguson	Always	Very important	Very important	Often	Very important	Very important
Weir-Kellner	Always	Very important	Very important	Often	Somewhat important	Somewhat important
			— Conventional —			
Newberry-Renlund	Sometimes	Somewhat important	Somewhat important	Always	Somewhat important	Very important
Von Steuben-Friedman	Always	Very important	Very important	Often	Somewhat important	Somewhat important

Table 16

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Sixth-Grade Teachers in 1998-1999, District 2

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —									
Guggenheim-Broughton	Sometimes	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important	Sometimes	Not very important	Very important
Guggenheim-Redling	Often	Somewhat important	Not very important	Often	Somewhat important	Somewhat important	Often	Very important	Very important
Weir-Ferguson	Always	Very important	Somewhat important	Always	Very important	Somewhat important	Always	Very important	Very important
Weir-Kellner	Always	Very important	Very important	Always	Very important	Very important	Often	Somewhat important	Somewhat important
— Conventional —									
Newberry-Renlund	Always	Somewhat important	Very important	Always	Somewhat important	Very important	Always	Somewhat important	Very important
Von Steuben-Friedman	Always	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important	Always	Very important	Very important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —						
Guggenheim-Broughton	Often	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important
Guggenheim-Redling	Always	Very important	Somewhat important	Often	Very important	Somewhat important
Weir-Ferguson	Often	Very important	Very important	Often	Very important	Very important
Weir-Kellner	Often	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important
— Conventional —						
Newberry-Renlund	Always	Somewhat important	Very important	Often	Somewhat important	Very important
Von Steuben-Friedman	Always	Somewhat important	Very important	Always	Very important	Very important

District 3

Table 17

Summary Data on Background Characteristics, Sixth-Grade Teachers in 1998-1999, District 3

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Calhoun North-Schlueter	F	White	2	N/A	2	6	1,4 (student teaching)	Classroom teacher
Calhoun North-Solomon	F	White	10	1	9	6	6	Lead Teacher
Calhoun North-Tierney	M	White	19	5	8	6	3,4,5,6,7,8 and College-level	Classroom teacher
Calhoun North-Vetter	F	White	15	N/A	11	6,7	3,4,5,6,7	Resource Teacher

Table 18

Experience Teaching Mathematics in Context, Sixth-Grade Teachers in 1998-1999, District 3

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
	— MiC —		
Calhoun North-Schlueter	One year	6	Measaure for Measure, Dry and Wet Numbers, Reallotment, Fraction Times, Expressions and Formulas, Dealing with Data
Calhoun North-Solomon	Two years	5	Measure for Measure, Dry and Wet Numbers, Reallotment, Fraction Times, Expressions and Formulas
Calhoun North-Tierney	Two years	5	Measure for Measure, Dry and Wet Numbers, Reallotment, Fraction Times, Expressions and Formulas
Calhoun North-Vetter	More than two years	5	Measure for Measure, Dry and Wet Numbers, Reallotment, Fraction Times, Expressions and Formulas

Table 19

Professional Training, Sixth-Grade Teachers in 1998-1999, District 3

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
				— *MiC* —						
Calhoun North-Schlueter	Liberal studies		4							
Calhoun North-Solomon	Humanities		3							
Calhoun North-Tierney	Psychology		2	Psychology						Calif. Community college
Calhoun North-Vetter	Child development		1							Learning handicapped

Table 20

Characterization of Mathematics, Sixth-Grade Teachers in 1998-1999, District 3

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— *MiC* —		
Calhoun North-Schlueter	Strongly agree	No opinion	Agree	Agree
Calhoun North-Solomon	Disagree	Disagree	No opinion	Strongly agree
Calhoun North-Tierney	Agree	Strongly agree	Agree	Agree
Calhoun North-Vetter	Strongly agree	Disagree	Strongly agree	Agree

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 21

Mathematics Teaching and Learning, Sixth-Grade Teachers in 1998-1999, District 3, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Calhoun North-Schlueter	Agree	Agree	Agree	No opinion	No opinion	No opinion
Calhoun North-Solomon	Agree	Agree	Disagree	Strongly agree	Agree	No opinion
Calhoun North-Tierney	Strongly agree	No opinion	Disagree	Agree	Agree	No opinion
Calhoun North-Vetter	Agree	Agree	Disagree	Agree	Disagree	Strongly agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 22

Mathematics Teaching and Learning, Sixth-Grade Teachers in 1998-1999, District 3, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Calhoun North-Schlueter	Strongly agree	No opinion	Agree	Agree	No opinion	Strongly agree
Calhoun North-Solomon	Strongly agree	Agree	Disagree	Agree	Disagree	Agree
Calhoun North-Tierney	Strongly agree	Strongly agree	Agree	Agree	Agree	Strongly agree
Calhoun North-Vetter	Strongly agree	Agree	Disagree	Disagree	Disagree	Strongly agree
School-Teacher	**Pedagogy**					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— Conventional —			
Calhoun North-Schlueter	No opinion	Strongly agree	No opinion	Agree	No opinion	Strongly agree
Calhoun North-Solomon	Strongly agree	Agree	Strongly agree	Strongly agree	Agree	No opinion
Calhoun North-Tierney	Agree	Agree	Agree	Agree	Strongly agree	Agree
Calhoun North-Vetter	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	No opinion

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 23

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Sixth-Grade Teachers in 1998-1999, District 3

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Calhoun North-Schlueter	Sometimes	Not very important	Not important at all	Often	Very important	Very important
Calhoun North-Solomon	Sometimes	Not important at all	Not important at all	Often	Not very important	Very important
Calhoun North-Tierney	Sometimes	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important
Calhoun North-Vetter	Never	Not important at all	Not important at all	Always	Very important	Very important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Calhoun North-Schlueter	Often	Very important	Very important	Sometimes	Not very important	Not very important
Calhoun North-Solomon	Always	Very important	Very important	Never	Not important at all	Not important at all
Calhoun North-Tierney	Often	Somewhat important	Somewhat important	Sometimes	Not important at all	Not important at all
Calhoun North-Vetter	Often	Somewhat important	Somewhat important	Always	Very important	Very important

Table 24

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Sixth-Grade Teachers in 1998-1999, District 3

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —									
Calhoun North-Schlueter	Sometimes	Very important	Not very important	Sometimes	Very important	Not very important	Often	Somewhat important	Somewhat important
Calhoun North-Solomon	Often	Somewhat important	Somewhat important	Often	Not important at all	Somewhat important	Often	Somewhat important	Somewhat important
Calhoun North-Tierney	Often	Somewhat important	Not very important	Always	Somewhat important	Somewhat important	Often	Not very important	Not very important
Calhoun North-Vetter	Always	Very important	Not important at all	Often	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —						
Calhoun North-Schlueter	Often	Somewhat important	Somewhat important	Sometimes		Somewhat important
Calhoun North-Solomon	Always	Somewhat important	Somewhat important			
Calhoun North-Tierney	Often	Somewhat important	Not very important	Sometimes	Not very important	Not important at all
Calhoun North-Vetter	Often	Somewhat important	Somewhat important	Never	Not important at all	Not important at all

District 4

Table 25

Summary Data on Background Characteristics, Sixth-Grade Teachers in 1998-1999, District 4

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Kelvyn Park-Becker	F	White	0	2		6	2, 3	Classroom teacher
Kelvyn Park-Downer	F	African American	11	1	9	6	6,7,8	Classroom teacher
Kelvyn Park-Vega	F	White	11	3	6	6	6,7,8,9,10,11	Classroom teacher

Table 26

Experience Teaching Mathematics in Context, Sixth-Grade Teachers in 1998-1999, District 4

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
		— MiC —	
Kelvyn Park-Becker	0	0	None
Kelvyn Park-Downer	Two years	5	Some of the Parts, Patterns and Symbols, Reallotment, Fraction Times, Comparing Quantities
Kelvyn Park-Vega	Two years	5	Some of the Parts, Patterns and Symbols, Reallotment, Fraction Times, Comparing Quantities

Table 27

Professional Training, Sixth-Grade Teachers in 1998-1999, District 4

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
				— *MiC* —						
Kelvyn Park-Becker	Math Education	Elementary Ed	45	Special Education						
Kelvyn Park-Downer	Applied Mathematics		Over 12	Multicultural Education, Mathematics Education		45+ credits	In the process Math Ed.		Require-ments	
Kelvyn Park-Vega	Mathematics	Secondary	Many	Mathematics and		5				

Table 28

Characterization of Mathematics, Sixth-Grade Teachers in 1998-1999, District 4

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— *MiC* —		
Kelvyn Park-Becker	Agree	No opinion	Strongly agree	Strongly agree
Kelvyn Park-Downer	Agree	Strongly agree	Strongly agree	Strongly agree
Kelvyn Park-Vega	Agree	Agree	Agree	Strongly agree

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 29

Mathematics Teaching and Learning, Sixth-Grade Teachers in 1998-1999, District 4, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Kelvyn Park-Becker	Strongly agree	No opinion	Disagree	Agree	No opinion	Strongly agree
Kelvyn Park-Downer	Agree	Agree	Strongly agree	Strongly agree	Disagree	Strongly agree
Kelvyn Park-Vega	Agree	Agree	Strongly agree	Agree	Disagree	Agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 30

Mathematics Teaching and Learning, Sixth-Grade Teachers in 1998-1999, District 4, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Kelvyn Park-Becker	Strongly agree	No opinion	Disagree	Strongly agree	Disagree	Strongly agree
Kelvyn Park-Downer	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree	Agree
Kelvyn Park-Vega	Agree	Agree	Agree	Agree	Agree	Agree
School-Teacher	**Pedagogy**					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Kelvyn Park-Becker	Agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
Kelvyn Park-Downer	Agree	Disagree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
Kelvyn Park-Vega	Agree	Agree	Agree	Strongly agree	Agree	Agree

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 31

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Sixth-Grade Teachers in 1998-1999, District 4

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Kelvyn Park-Becker	Sometimes	Not very important	Not important at all	Always	Very important	Very important
Kelvyn Park-Downer	Never	Not important at all	Not important at all	Often	Very important	Very important
Kelvyn Park-Vega	Often	Somewhat important	Somewhat important	Never	Not important at all	Not important at all
School-Teacher	**Types of Formal Assessment**					
	Classroom Quizzes and Tests			**Portfolios of Student Work**		
	Frequency	**What to Teach Next**	**Grades**	**Frequency**	**What to Teach Next**	**Grades**
			— *MiC* —			
Kelvyn Park-Becker	Always	Somewhat important	Very important	Often	Not very important	Somewhat important
Kelvyn Park-Downer	Often		Very important	Often	Very important	Very important
Kelvyn Park-Vega	Often	Somewhat important	Somewhat important	Sometimes	Not very important	Not very important

Table 32

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Sixth-Grade Teachers in 1998-1999, District 4

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —									
Kelvyn Park-Becker	Always	Somewhat important	Not very important	Always	Somewhat important	Not very important	Always	Somewhat important	Somewhat important
Kelvyn Park-Downer	Sometimes	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Kelvyn Park-Vega	Always	Somewhat important	Somewhat important	Always	Somewhat important	Somewhat important	Always	Somewhat important	Somewhat important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —						
Kelvyn Park-Becker	Always	Somewhat important	Somewhat important	Always	Very important	Very important
Kelvyn Park-Downer	Sometimes	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Kelvyn Park-Vega	Often	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important

Grade 7

District 1

Table 33

Summary Data on Background Characteristics, Seventh-Grade Teachers in 1998-1999, District 1

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Fernwood-Heath	F	White	5	0	4	7	7,10,11,12	Classroom teacher
Von Humboldt-Bartlett	M	White	2	0	0	7	4, 5, 6	Classroom teacher
Von Humboldt-Muldoon	F	Multicultural	38	some summers	3	7	Pre-school to adult	Classroom teacher
Wacker-Burton	F	White	1	0	0	7	7	Classroom teacher
				— Conventional —				
Addams-St.James	M	White	4	3	3	7	6,9,10,11	Classroom teacher, Department chair
Fernwood-Hodge	M	White	2	0.5	1	7	7	Classroom teacher
Wacker-Rubin	F	White	0.5	0	0	7	3 spec.ed, 6 and 7	Classroom teacher

Table 34

Experience Teaching Mathematics in Context, Seventh-Grade Teachers in 1998-1999, District 1

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
	— MiC —		
Fernwood-Heath	One year	6	Packages and Polygons, Ways to Go, Triangles and Beyond, Cereal Numbers, Ups and Downs, Building Formulas
Von Humboldt-Bartlett	0	0	None
Von Humboldt-Muldoon	One semester	0	None
Wacker-Burton	One semester	0	None
	— Conventional —		
Addams-St. James	0	None	None
Fernwood-Hodge	0	0	None
Wacker-Rubin	Less than one semester	0	None

Table 35

Professional Training, Seventh-Grade Teachers in 1998-1999, District 1

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
— MiC —										
Fernwood-Heath	Psychology Education	Secondary Mathematics	9							
Von Humboldt-Bartlett	Psychology	English Sociology	3	Education		1				20 years work experience before teaching
Von Humboldt-Muldoon	Elementary Education	Theology Phylosophy		Administration	Sociology	30				Middle school Math K-12 ESL
Wacker-Burton	Elementary Education		4							
— Conventional —										
Addams-St.James	Mathematics Education		10							
Fernwood-Hodge	Elementary Education	Middle School Math	8-10							
Wacker-Rubin	Elementary Special Education		3	C & I (just starting)						I have started on my master's degree in C&I

Table 36

Characterization of Mathematics, Seventh-Grade Teachers in 1998-1999, District 1

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— MiC —		
Fernwood-Heath	Strongly agree	No opinion	Agree	Strongly agree
Von Humboldt-Bartlett	Agree	Agree	Agree	Agree
Von Humboldt-Muldoon	Agree	Agree	Agree	Agree
Wacker-Burton	Agree	Agree	Agree	Agree
		— Conventional —		
Addams-St.James	Strongly agree	Agree	Strongly agree	Agree
Fernwood-Hodge	Strongly agree	No opinion	Agree	Agree
Wacker-Rubin	Strongly agree	Agree	Strongly agree	Agree

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 37

Mathematics Teaching and Learning, Seventh-Grade Teachers in 1998-1999, District 1, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Fernwood-Heath	Agree	Agree	Disagree	Agree	Disagree	Strongly agree
Von Humboldt-Bartlett	Disagree	Strongly agree	Agree	No opinion	Strongly disagree	No opinion
Von Humboldt-Muldoon	Agree	Disagree	Disagree	No opinion	Disagree	Agree
Wacker-Burton	Agree	Agree	Agree	Agree	No opinion	Agree
			— Conventional —			
Addams-St.James	Strongly agree	Agree	Agree	Agree	Disagree	Agree
Fernwood-Hodge	Agree	Strongly agree	Strongly agree	No opinion	Disagree	Agree
Wacker-Rubin	Strongly agree	Disagree	Disagree	Agree	No opinion	Strongly agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 38

Mathematics Teaching and Learning, Seventh-Grade Teachers in 1998-1999, District 1, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Fernwood-Heath	Agree	Strongly agree	Disagree	Disagree	No opinion	Strongly agree
Von Humboldt-Bartlett	No opinion	Agree	Agree	No opinion	Agree	Agree
Von Humboldt-Muldoon	Agree	Agree	Agree	Agree	Agree	Disagree
Wacker-Burton	No opinion	Agree	No opinion	Agree	Agree	Agree
			— Conventional —			
Addams-St.James	Disagree	Agree	Agree	Agree	Agree	Agree
Fernwood-Hodge	Agree	Agree	No opinion	Agree	No opinion	Agree
Wacker-Rubin	Disagree	Agree	Agree	Strongly agree	Disagree	Agree

School-Teacher	Pedagogy					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Fernwood-Heath	Strongly agree	Strongly agree	No opinion	Strongly agree	Strongly agree	Strongly agree
Von Humboldt-Bartlett	Agree	Disagree	No opinion	No opinion	Agree	Agree
Von Humboldt-Muldoon	No opinion	Agree	Agree	Strongly agree	Agree	Agree
Wacker-Burton	No opinion	Agree	Agree	No opinion	Agree	Agree
			— Conventional —			
Addams-St.James	Agree	Agree	Agree	Agree	Agree	Strongly Agree
Fernwood-Hodge	Agree	Agree	Strongly agree	Agree	Agree	Agree
Wacker-Rubin	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 39

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Seventh-Grade Teachers in 1998-1999, District 1

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Fernwood-Heath	Never	Not important at all	Not important at all	Sometimes	Not important at all	Very important
Von Humboldt-Bartlett	Often	Somewhat important	Somewhat important	Sometimes	Very important	Somewhat important
Von Humboldt-Muldoon	Sometimes	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important
Wacker-Burton	Sometimes	Not very important	Not very important	Often	Somewhat important	Somewhat important
			— Conventional —			
Addams-St.James	Never	Not important at all	Somewhat important	Sometimes	Somewhat important	Somewhat important
Fernwood-Hodge	Sometimes	Somewhat important	Not very important	Sometimes	Not very important	Somewhat important
Wacker-Rubin	Sometimes	Not very important	Not important at all	Often	Somewhat important	Very important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Fernwood-Heath	Always	Somewhat important	Very important	Sometimes	Somewhat important	Somewhat important
Von Humboldt-Bartlett	Always	Very important	Very important	Sometimes	Somewhat important	Not very important
Von Humboldt-Muldoon	Sometimes	Very important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Wacker-Burton	Often	Somewhat important	Somewhat important	Sometimes	Not very important	Not very important
			— Conventional —			
Addams-St.James	Always	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Fernwood-Hodge	Always	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Wacker-Rubin	Often	Very important	Somewhat important	Always	Very important	Very important

Table 40

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Seventh-Grade Teachers in 1998-1999, District 1

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	Next	Student Grades	Frequency	Next	Student Grades	Frequency	Next	Student Grades
— MiC —									
Fernwood-Heath	Always	Very important	Somewhat important	Often	Very important	Somewhat important	Often	Somewhat important	Somewhat important
Von Humboldt-Bartlett	Sometimes	Somewhat important	Not very important	Sometimes	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Von Humboldt-Muldoon	Always	Very important	Somewhat important	Always	Very important	Somewhat important	Always	Very important	Somewhat important
Wacker-Burton	Always	Very important	Very important	Always	Very important	Very important	Always	Very important	Very important
— Conventional —									
Addams-St.James	Always	Very important	Very important	Always	Very important	Very important	Often	Very important	Very important
Fernwood-Hodge	Always	Very important	Very important	Always	Very important	Very important	Often	Very important	Very important
Wacker-Rubin	Always	Very important	Very important	Always	Very important	Very important	Always	Very important	Very important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	Next	Student Grades	Frequency	Next	Student Grades
— MiC —						
Fernwood-Heath	Often	Somewhat important	Somewhat important	Often	Somewhat important	Very important
Von Humboldt-Bartlett	Sometimes	Very important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Von Humboldt-Muldoon	Often	Very important	Somewhat important	Always	Very important	Very important
Wacker-Burton	Always	Very important	Very important	Often	Somewhat important	Somewhat important
— Conventional —						
Addams-St.James	Often	Very important	Very important	Often	Somewhat important	Very important
Fernwood-Hodge	Often	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Wacker-Rubin	Always	Very important	Very important	Always	Very important	Very important

District 2

Table 41

Summary Data on Background Characteristics, Seventh-Grade Teachers in 1998-1999, District 2

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Guggenheim-Carlson	F	White	4	0	1	7	6, 7, 8, 9, 10, 11	Classroom teacher
Guggenheim-Dillard	M	White	5	0	4	7	6,7,8,9,10,11,12	Classroom teacher
Weir-Caputo	M	Hispanic	26	0	10	7	7, 8	Classroom teacher
Weir-Gallardo	M	African American	28	0	13	7 & 8	K, 1, 2, 3, 4, 5, 6, 7, 8	Department chair
				— Conventional —				
Newberry-Cunningham	F	African American	12	0	11	7,8	K,6,7,8,9,10,11,12	Lead Teacher

Table 42

Experience Teaching Mathematics in Context, Seventh-Grade Teachers in 1998-1999, District 2

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
	— MiC —		
Guggenheim-Carlson	One year	5	Dry and Wet Numbers, Triangles and Beyond, Cereal Numbers, Building Formulas, Decision Making
Guggenheim-Dillard	More than two years	6	Reallotment, Made to Measure, Fraction Times, Expressions and Formulas, Comparing Quantities,
Weir-Caputo Weir-Gallardo*	0	0	None
	— Conventional —		
Newberry-Cunningham	0	0	None

* Gallardo did not complete this teacher questionnaire.

Table 43

Professional Training, Seventh-Grade Teachers in 1998-1999, District 2

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
					— MiC —					
Guggenheim-Carlson	Psychology	Business								Certification in math
Guggenheim-Dillard	Mathematics Education		6							
Weir-Caputo				Math Education	Comp Education					
Weir-Gallardo	Elementary Education	Early Childhood		Reading						Certify in state of FL mathematics
					— Conventional —					
Newberry-Cunningham	Accounting		4							

Table 44

Characterization of Mathematics, Seventh-Grade Teachers in 1998-1999, District 2

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— MiC —		
Guggenheim-Carlson	Disagree	Disagree	Agree	Agree
Guggenheim-Dillard	Strongly agree	Agree	Agree	Agree
Weir-Caputo	Agree	Strongly agree	Strongly agree	Strongly agree
Weir-Gallardo	Strongly agree	Agree	Agree	Agree
		— Conventional —		
Newberry-Cunningham	Disagree	Agree	Strongly agree	Strongly agree

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 45

Mathematics Teaching and Learning, Seventh-Grade Teachers in 1998-1999, District 2, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Guggenheim-Carlson	Agree	Agree	Strongly agree	Strongly agree	Strongly disagree	Strongly agree
Guggenheim-Dillard	No opinion	Agree	Agree	Agree	Strongly disagree	Agree
Weir-Caputo	Agree	Agree	Agree	Agree	Disagree	Strongly agree
Weir-Gallardo	Strongly agree	Agree	Agree	Agree	Disagree	Agree
			— Conventional —			
Newberry-Cunningham	Strongly agree	Disagree	Disagree	Strongly agree	Strongly disagree	Strongly agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 46

Mathematics Teaching and Learning, Seventh-Grade Teachers in 1998-1999, District 2, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Guggenheim-Carlson	Strongly agree	Agree	Disagree	Agree	Disagree	No opinion
Guggenheim-Dillard	Agree	Strongly Agree	No opinion	Agree	Agree	Strongly agree
Weir-Caputo	Strongly agree	Strongly agree	No opinion	Strongly agree	Strongly agree	Strongly agree
Weir-Gallardo	Disagree	Agree	Disagree	Agree	Agree	Agree
			— Conventional —			
Newberry-Cunningham	Strongly Agree	Strongly Agree	Disagree	Strongly Agree	Disagree	Agree

School-Teacher	Pedagogy					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Guggenheim-Carlson	Agree	Agree	No opinion	Agree	No opinion	Strongly agree
Guggenheim-Dillard	No opinion	Agree	Strongly agree	Agree	Strongly agree	Strongly agree
Weir-Caputo	Strongly agree	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree
Weir-Gallardo	Agree	Agree	Agree	Agree	Agree	Agree
			— Conventional —			
Newberry-Cunningham	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculu.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 47

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Seventh-Grade Teachers in 1998-1999, District 2

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Guggenheim-Carlson	Never	Not important at all	Not important at all	Always	Somewhat important	Very important
Guggenheim-Dillard	Sometimes	Not very important	Not very important	Often	Somewhat important	Somewhat important
Weir-Caputo	Sometimes	Somewhat important	Somewhat important	Sometimes	Not very important	Somewhat important
Weir-Gallardo	Never	Very important	Not important at all	Often	Somewhat important	Somewhat important
			— Conventional —			
Newberry-Cunningham	Sometimes	Not very important	Not very important	Always	Somewhat important	Very important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Guggenheim-Carlson	Often			Never	Not important at all	Not important at all
Guggenheim-Dillard	Often	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Weir-Caputo	Always	Very important	Very important	Always	Somewhat important	Very important
Weir-Gallardo	Always	Very important	Very important	Sometimes	Not very important	Not very important
			— Conventional —			
Newberry-Cunningham	Sometimes	Not very important	Not very important	Never	Not important at all	Not important at all

Table 48

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Seventh-Grade Teachers in 1998-1999, District 2

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	Next	Student Grades	Frequency	Next	Student Grades	Frequency	Next	Student Grades
— MiC —									
Guggenheim-Carlson	Always	Very important	Not very important	Often	Somewhat important	Somewhat important	Often	Somewhat important	Very important
Guggenheim-Dillard	Often	Very important	Not very important	Often	Very important	Somewhat important	Always	Very important	Very important
Weir-Caputo	Always	Very important	Very important	Always	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Weir-Gallardo	Often	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important	Often	Somewhat important	Somewhat important
— Conventional —									
Newberry-Cunningham	Often	Very important	Very important	Always	Very important	Very important	Always	Very important	Very important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	Next	Student Grades	Frequency	Next	Student Grades
— MiC —						
Guggenheim-Carlson	Often	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Guggenheim-Dillard	Always	Very important	Very important	Often	Somewhat important	Somewhat important
Weir-Caputo	Always	Somewhat important	Somewhat important	Sometimes	Somewhat important	Not very important
Weir-Gallardo	Often	Somewhat important	Somewhat important	Always	Very important	Somewhat important
— Conventional —						
Newberry-Cunningham	Often	Somewhat important	Somewhat important	Always	Very important	Very important

District 3

Table 49

Summary Data on Background Characteristics, Seventh-Grade Teachers in 1998-1999, District 3

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Calhoun North-Perry	F	White	10	0	10	7	7,8,9 and Adult	Classroom teacher
Calhoun North-Schroeder	F	White	26	0	20	7,8	2,3,5,6	Special Education Teacher

Table 50

Experience Teaching Mathematics in Context, Seventh-Grade Teachers in 1998-1999, District 3

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
		— MiC —	
Calhoun North-Perry	More than two years	7	Comparing Quantities, Operations, Packages and Polygons, Triangles and Beyond, Cereal Numbers, Powers of Ten, Building Formulas
Calhoun North-Schroeder	More than two years	5	More or Less, Expressions and Formulas, Operations, Packages and Polygons, Powers of Ten

Table 51

Professional Training, Seventh-Grade Teachers in 1998-1999, District 3

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
					— MiC —					
Calhoun North-Perry	Business		10							Math supplement
Calhoun North-Schroeder	Soc Sci	Anthropology	3 to 4							Learning handicapped, Resource specialist

Table 52

Characterization of Mathematics, Seventh-Grade Teachers in 1998-1999, District 3

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— MiC —		
Calhoun North-Perry	Agree	Agree	Strongly agree	Strongly agree
Calhoun North-Schroeder	Agree	Agree	Agree	Agree

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 53

Mathematics Teaching and Learning, Seventh-Grade Teachers in 1998-1999, District 3, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Calhoun North-Perry	Strongly agree	Agree	Disagree	Agree	Disagree	Strongly Agree
Calhoun North-Schroeder	Agree	Disagree	Disagree	Agree	Disagree	Strongly agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 54

Mathematics Teaching and Learning, Seventh-Grade Teachers in 1998-1999, District 4, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Calhoun North-Perry	Strongly agree	Disagree	Strongly disagree	Disagree	Strongly disagree	No opinion
Calhoun North-Schroeder	Strongly agree	Agree	Disagree	Disagree	No opinion	Disagree
School-Teacher	**Pedagogy**					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Calhoun North-Perry	Disagree	Strongly agree	Strongly agree	Strongly agree	Disagree	Strongly agree
Calhoun North-Schroeder	Disagree	Agree	Agree	Agree	Agree	Agree

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculu.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 55

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Seventh-Grade Teachers in 1998-1999, District 3

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Calhoun North-Perry	Sometimes	Not very important	Not important at all	Often	Somewhat important	Somewhat important
Calhoun North-Schroeder	Never	Not important at all	Not important at all	Always	Very important	Very important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Calhoun North-Perry	Often	Somewhat important	Somewhat important	Always	Not important at all	Not important at all
Calhoun North-Schroeder	Always	Very important	Very important	Often	Somewhat important	Somewhat important

Table 56

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Seventh-Grade Teachers in 1998-1999, District 3

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	Next	Student Grades	Frequency	Next	Student Grades	Frequency	Next	Student Grades
— *MiC* —									
Calhoun North-Perry	Always	Very important	Not important at all	Always	Very important	Not very important	Always	Somewhat important	Somewhat important
Calhoun North-Schroeder	Always	Very important	Very important	Always	Very important	Very important	Always	Very important	Very important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	Next	Student Grades	Frequency	Next	Student Grades
— *MiC* —						
Calhoun North-Perry	Always	Very important	Very important	Often	Somewhat important	Not important at all
Calhoun North-Schroeder	Always	Very important	Very important	Always	Very important	Very important

District 4

Table 57

Summary Data on Background Characteristics, Seventh-Grade Teachers in 1998-1999, District 4

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Kelvyn Park-Finn	F	Hispanic	10	0	7	7	6,7,8	Classroom teacher
Kelvyn Park-Kane	F	Hispanic	4	0	3	7	6, 8	Classroom teacher
Kelvyn Park MS-Woodward	M	Other	2	0	2	7	7,8	Classroom teacher

Table 58

Experience Teaching Mathematics in Context, Seventh-Grade Teachers in 1998-1999, District 4

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
	— MiC —		
Kelvyn Park-Finn	One year	4	More or Less, Rations and Rates, Operations, Packages and Polygons
Kelvyn Park-Kane	0	0	None
Kelvyn Park-Woodward	One year	4	More or Less, Rations and Rates, Operations, Packages and Polygons

Table 59

Professional Training, Seventh-Grade Teachers in 1998-1999, District 4

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
				— *MiC* —						
Kelvyn Park MS-Finn	Computer Sci.	Mathematics	15 courses	Math Ed.	Mathematics	18 courses				
Kelvyn Park-Kane	Communication	Spanish	5							
Kelvyn Park MS-Woodward	Bus. Admin.		Approx. 12							

Table 60

Characterization of Mathematics, Seventh-Grade Teachers in 1998-1999, District 4

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— *MiC* —		
Kelvyn Park MS-Finn	Agree	Disagree	Agree	Strongly Agree
Kelvyn Park-Kane	Agree	Agree	Agree	Agree
Kelvyn Park MS-Woodward	Strongly agree	Agree	Agree	Disagree

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 61

Mathematics Teaching and Learning, Seventh-Grade Teachers in 1998-1999, District 4, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Kelvyn Park MS-Finn	Agree	Disagree	Disagree	Agree	Disagree	Strongly agree
Kelvyn Park-Kane	Agree	Agree	Agree	Strongly agree	Strongly agree	Agree
Kelvyn Park MS-Woodward	Strongly agree	Disagree	Strongly agree	Agree	Disagree	Agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 62

Mathematics Teaching and Learning, Seventh-Grade Teachers in 1998-1999, District 4, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Kelvyn Park MS-Finn	Strongly agree	Agree	Disagree	Disagree	Disagree	Disagree
Kelvyn Park-Kane	Strongly agree	No opinion	Disagree	Agree	Agree	Agree
Kelvyn Park MS-Woodward	Agree	Agree	Disagree	Agree	Agree	Agree
School-Teacher	**Pedagogy**					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Kelvyn Park MS-Finn	Strongly agree	Agree	Strongly agree	Strongly agree	Agree	Strongly agree
Kelvyn Park-Kane	Disagree	Agree	No opinion	Agree	Agree	Agree
Kelvyn Park MS-Woodward	Disagree	Agree	Agree	Agree	Agree	Agree

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 63

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Seventh-Grade Teachers in 1998-1999, District 4

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Kelvyn Park MS-Finn*						
Kelvyn Park-Kane	Never	Not important at all	Not very important	Often	Somewhat important	Very important
Kelvyn Park MS-Woodward	Sometimes	Somewhat important	Somewhat important	Often	Somewhat important	Very important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Kelvyn Park MS-Finn*						
Kelvyn Park-Kane	Often	Very important	Very important	Sometimes	Not very important	Somewhat important
Kelvyn Park MS-Woodward	Often	Very important	Very important	Often	Somewhat important	Somewhat important

* Finn did not complete this teacher questionnaire.

Table 64

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Seventh-Grade Teachers in 1998-1999, District 4

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	Next	Student Grades	Frequency	Next	Student Grades	Frequency	Next	Student Grades
				— *MiC* —					
Kelvyn Park MS-Finn*									
Kelvyn Park-Kane	Always	Somewhat important	Not very important	Always	Somewhat important	Somewhat important	Always	Somewhat important	Somewhat important
Kelvyn Park MS-Woodward	Always	Somewhat important	Very important	Always	Somewhat important	Very important	Often	Somewhat important	Very important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	Next	Student Grades	Frequency	Next	Student Grades
			— *MiC* —			
Kelvyn Park MS-Finn*						
Kelvyn Park-Kane	Often	Somewhat important	Very important	Often	Somewhat important	Somewhat important
Kelvyn Park MS-Woodward	Often	Somewhat important	Not very important	Often	Very important	Somewhat important

* Finn did not complete this part of teacher questionnaire.

Grade 8

District 1

Table 65

Summary Data on Background Characteristics, Eighth-Grade Teachers in 1998-1999, District 1

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Fernwood-Reichers	F	White	15	0	15	8th	8 math, 6, 7, 8 music	Classroom teacher
Von Humboldt-Waters	F	White	8	0	4	8	7, 8, 9, 10, 11, 12	Classroom teacher
				— Conventional —				
Addams-Wolfe	F	White	0	0			0	
Wacker-DiMatteo	F	White	11	2	0.5	8	K, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Classroom teacher
Wacker-Kendall*	F							
Wacker-Marin	F	Hispanic	11	2	0.5	8	K, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Classroom teacher

* Kendall did not complete this teacher questionnaire.

Table 66

Experience Teaching Mathematics in Context, Eighth-Grade Teachers in 1998-1999, District 1

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
		— MiC —	
Fernwood-Reichers	Less than one semester	4	More or Less, Expressions and Formulas, Operations, Triangles and Patchwork
Von Humboldt-Waters	One semester	9	Operations, Packages and Polygons, Ways to Go, Triangles and Beyond, Cereal Numbers, Powers of Ten, Ups and Downs, Building Formulas, Statistics and the Environment
		— Conventional —	
Addams-Wolfe*			
Wacker-DiMatteo	Less than one semester	0	None
Wacker-Kendall	0	0	None
Wacker-Marin*			

*Wolfe and Marin did not complete this teacher questionnaire.

Table 67

Professional Training, Eighth-Grade Teachers in 1998-1999, District 1

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
					— MiC —					
Fernwood-Reichers	Music			Music						Certification to teach music K-12, then Junior and high math (7-9)
Von Humboldt-Waters	Math Education									
					— Conventional —					
Addams-Wolfe										
Wacker-DiMatteo	Education	Middle 5-9								Bookkeeper/Sec.degree
Wacker-Kendall*										
Wacker-Marin*										

* Kendall and Marin did not complete this teacher questionnaire.

Table 68

Characterization of Mathematics, Eighth-Grade Teachers in 1998-1999, District 1

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— MiC —		
Fernwood-Reichers	Strongly agree	Disagree	Strongly agree	Agree
Von Humboldt-Waters	Agree	Disagree	Agree	Strongly agree
		— Conventional —		
Addams-Wolfe	Strongly agree	Agree	Agree	Agree
Wacker-DiMatteo	Agree	Strongly agree	Strongly agree	Agree
Wacker-Kendall*				
Wacker-Marin*				

* Kendall and Marin did not complete this teacher questionnaire.

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 69

Mathematics Teaching and Learning, Eighth-Grade Teachers in 1998-1999, District 1, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Fernwood-Reichers	Agree	Agree	Disagree	No opinion	No opinion	Strongly agree
Von Humboldt-Waters	Agree	No opinion	Disagree	Agree	Disagree	Agree
			— Conventional —			
Addams-Wolfe	Strongly agree	Strongly agree	Agree	Agree	Disagree	Agree
Wacker-DiMatteo	Disagree	Strongly agree	Strongly agree	Agree	Strongly agree	Strongly agree
Wacker-Kendall*						
Wacker-Marin*						

* Kendall and Marin did not complete this teacher questionnaire.

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 70

Mathematics Teaching and Learning, Eighth-Grade Teachers in 1998-1999, District 1, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Fernwood-Reichers	Disagree	Agree	No opinion	Strongly agree	Disagree	No opinion
Von Humboldt-Waters	Agree	Agree	Disagree	Strongly agree	No opinion	Agree
			— Conventional —			
Addams-Wolfe	Agree	Agree	Agree	Agree	Agree	Agree
Wacker-DiMatteo	Strongly agree	Disagree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
Wacker-Kendall*						
Wacker-Marin						

School-Teacher	Pedagogy					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Fernwood-Reichers	Agree	Agree	Agree	Agree	Agree	Agree
Von Humboldt-Waters	Strongly agree	Agree	Agree	Strongly agree	Strongly agree	Strongly agree
			— Conventional —			
Addams-Wolfe	Disagree	Disagree	Agree	Agree	Agree	Agree
Wacker-DiMatteo	Agree	Disagree	Strongly agree	Disagree	Agree	Strongly agree
Wacker-Kendall*						
Wacker-Marin*						

* Kendall and Marin did not complete this teacher questionnaire.

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 71

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Eighth-Grade Teachers in 1998-1999, District 1

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Fernwood-Reichers	Never	Not very important	Not important at all	Sometimes	Somewhat important	Somewhat important
Von Humboldt-Waters	Sometimes	Somewhat important	Not important at all	Always	Somewhat important	Somewhat important
			— Conventional —			
Addams-Wolfe	Often	Very important	Somewhat important	Sometimes	Very important	Somewhat important
Wacker-DiMatteo	Sometimes	Somewhat important	Somewhat important	Always	Very important	Very important
Wacker-Kendall*						
Wacker-Marin*						

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Fernwood-Reichers	Sometimes	Somewhat important	Somewhat important	Never	Not important at all	Not important at all
Von Humboldt-Waters	Always	Very important	Very important	Sometimes	Not very important	Not very important
			— Conventional —			
Addams-Wolfe	Often	Very important	Somewhat important	Never	Somewhat important	Very important
Wacker-DiMatteo	Sometimes	Somewhat important	Somewhat important	Always	Very important	Very important
Wacker-Kendall						
Wacker-Marin						

* Kendall and Marin did not complete this teacher questionnaire.

Table 72

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Eighth-Grade Teachers in 1998-1999, District 1

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —									
Fernwood-Reichers	Always	Very important	Somewhat important	Always	Somewhat important	Somewhat important	Always	Very important	Very important
Von Humboldt-Waters	Often	Very important	Not important at all	Often	Somewhat important	Somewhat important	Often	Very important	Somewhat important
— Conventional —									
Addams-Wolfe	Always	Very important	Not very important	Always	Very important	Not very important	Often	Very important	Somewhat important
Wacker-DiMatteo	Always	Very important	Very important	Always	Very important	Very important	Always	Very important	Very important
Wacker-Kendall*									
Wacker-Marin*									

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —						
Fernwood-Reichers	Always	Very important	Very important	Often	Very important	Somewhat important
Von Humboldt-Waters	Often	Somewhat important	Not very important	Never	Somewhat important	Not important at all
— Conventional —						
Addams-Wolfe	Often	Somewhat important	Somewhat important	Sometimes	Somewhat important	Somewhat important
Wacker-DiMatteo	Always	Very important	Very important	Always	Very important	Very important
Wacker-Kendall*						
Wacker-Marin*						

* Kendall and Marin did not complete this teacher questionnaire.

District 2

Table 73

Summary Data on Background Characteristics, Eighth-Grade Teachers in 1998-1999, District 2

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Guggenheim-Keeton	F	African American	19	0	14	8	6,7,8,9	Department chair
Guggenheim-Teague	F	White	25	0	11	8	3,6,7,8	Classroom teacher
				— Conventional —				
Newberry-Cunningham	F	African American	12	0	11	7,8	K,6,7,8,9,10,11,12	Lead teacher
Newberry-Stark	F	White	7	10	2	8	6,7,8,College (freshman) and Non-credit adults	Classroom teacher

Table 74

Experience Teaching Mathematis in Context, Eighth-Grade Teachers in 1998-1999, District 2

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
		— MiC —	
Guggenheim-Keeton	More than two years	6	More or Less, Packages and Polygons, Triangles and Beyond, Cereal Numbers, Ups and Downs, Building Formulas
Guggenheim-Teague	One year	4	Fraction Times, More or Less, Packages and Polygons, Building Formulas
		— Conventional —	
Newberry-Cunningham	0	0	None
Newberry-Stark	0	0	None

Table 75

Professional Training, Eighth-Grade Teachers in 1998-1999, District 2

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
— MiC —										
Guggenheim-Keeton	Finance			In process		9 credits				
Guggenheim-Teague	Education		3							
— Conventional —										
Newberry-Cunningham	Accounting major		4							
Newberry-Stark	Business	Statistics	2 + accounting / economics courses	Teaching English as a second lang.						

Table 76

Characterization of Mathematics, Eighth-Grade Teachers in 1998-1999, District 2

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— MiC —		
Guggenheim-Keeton	Strongly agree	No opinion	Strongly agree	Strongly agree
Guggenheim-Teague	Strongly agree	Disagree	No opinion	Agree
		— Conventional —		
Newberry-Cunningham	Strongly Disagree	Agree	Strongly agree	Strongly agree
Newberry-Stark	Strongly agree	No opinion	Strongly agree	Strongly agree

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 77

Mathematics Teaching and Learning, Eighth-Grade Teachers in 1998-1999, District 2, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Guggenheim-Keeton	Strongly agree	Agree	No opinion	Agree	No opinion	Strongly agree
Guggenheim-Teague	No opinion	Strongly agree	No opinion	No opinion	No opinion	Agree
			— Conventional —			
Newberry-Cunningham	Strongly agree	Disagree	Disagree	Strongly agree	Strongly disagree	Strongly agree
Newberry-Stark	Strongly agree	Strongly disagree	Agree	Agree	Strongly disagree	Strongly agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 78

Mathematics Teaching and Learning, Eighth-Grade Teachers in 1998-1999, District 2, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Guggenheim-Keeton	Strongly agree	Agree	No opinion	Strongly agree	No opinion	Agree
Guggenheim-Teague	Agree	Agree	Disagree	No opinion	No opinion	No opinion
			— Conventional —			
Newberry-Cunningham	Strongly agree	Strongly agree	Disagree	Strongly Agree	Disagree	Strongly agree
Newberry-Stark	Strongly agree	Agree	Strongly disagree	Agree	Strongly disagree	Strongly agree
School-Teacher	**Pedagogy**					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Guggenheim-Keeton	Agree	No opinion	Agree	Strongly agree	Agree	Strongly agree
Guggenheim-Teague	Agree	Agree	Agree	Agree	No opinion	Agree
			— Conventional —			
Newberry-Cunningham	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
Newberry-Stark	Agree	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 79

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Eighth-Grade Teachers in 1998-1999, District 2

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Guggenheim-Keeton	Never	Not very important	Not very important	Sometimes	Somewhat important	Very important
Guggenheim-Teague	Sometimes	Somewhat important	Somewhat important	Sometimes	Not very important	Not important at all
			— Conventional —			
Newberry-Cunningham	Sometimes	Not very important	Not very important	Always	Somewhat important	Very important
Newberry-Stark	Sometimes	Not very important	Not important at all	Often	Very important	Very important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— MiC —			
Guggenheim-Keeton	Often	Very important	Very important	Often	Somewhat important	Somewhat important
Guggenheim-Teague	Sometimes	Somewhat important	Very important	Sometimes	Not very important	Not very important
			— Conventional —			
Newberry-Cunningham	Sometimes	Not very important	Not very important	Never	Not important at all	Not important at all
Newberry-Stark	Often	Very important	Somewhat important	Never		

Table 80

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Eighth-Grade Teachers in 1998-1999, District 2

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —									
Guggenheim-Keeton	Always	Very important	Somewhat important	Always	Very important	Very important	Always	Very important	Very important
Guggenheim-Teague	Often	Very important	Very important	Often	Somewhat important	Very important	Sometimes	Not very important	Not very important
— Conventional —									
Newberry-Cunningham	Often	Very important	Very important	Always	Very important	Very important	Always	Very important	Very important
Newberry-Stark	Always	Very important	Not very important	Always	Very important	Not very important	Never		

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —						
Guggenheim-Keeton	Always	Very important	Very important	Always	Very important	Very important
Guggenheim-Teague	Often	Very important	Very important			
— Conventional —						
Newberry-Cunningham	Often	Somewhat important	Somewhat important	Always	Very important	Very important
Newberry-Stark	Always	Very important	Very important	Always	Very important	Very important

District 3

Table 81

Summary Data on Background Characteristics, Eighth-Grade Teachers New to Study in 1998-1999, District 3

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— MiC —				
Calhoun North-Wells	F	Other	23	2	21	8th	4-9	Classroom teacher

Table 82

Experience Teaching Mathematics in Context, Eighth-Grade Teachers in 1998-1999, District 3

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
		— MiC —	
Calhoun North-Wells	More than two years	8 to 10	Rations and Rates, Comparing Quantities, Operations, Dealing with Data, Looking at an Angle, Building Formulas, Decision Making, Triangles and Patchwork, Going the Distance, Reflections on Number, Graphing Equations, Get the Most Out of It, Insights into Data*

* Includes units taught in previous years.

Table 83

Professional Training, Eighth-Grade Teachers in 1998-1999, District 3

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
					— MiC —					
Calhoun North-Wells	Education	Math	15+							

Table 84

Characterization of Mathematics, Eighth-Grade Teachers in 1998-1999, District 3

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— MiC —		
Calhoun North-Wells	Strongly agree	Strongly disagree	Strongly agree	Strongly agree

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 85

Mathematics Teaching and Learning, Eighth-Grade Teachers in 1998-1999, District 3, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Calhoun North-Wells	Strongly agree	Strongly disagree	Strongly disagree	Strongly agree	Disagree	Strongly agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 86

Mathematics Teaching and Learning, Eighth-Grade Teachers in 1998-1999, District 3, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Calhoun North-Wells	Strongly agree	Strongly agree	Disagree	Strongly agree	Strongly disagree	Strongly agree
School-Teacher	**Pedagogy**					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Calhoun North-Wells	Strongly agree	Agree	Agree	Strongly agree	Strongly agree	Agree

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 87

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Eighth-Grade Teachers in 1998-1999, District 3

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Calhoun North-Wells	Sometimes	Not very important	Somewhat important	Often	Very important	Very important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Calhoun North-Wells	Always	Somewhat important	Somewhat important	Often	Somewhat important	Very important

Table 88

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Eighth-Grade Teachers in 1998-1999, District 3

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
				— *MiC* —					
Calhoun North-Wells	Often	Very important	Very important	Always	Very important	Very important	Always	Very important	Very important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
			— *MiC* —			
Calhoun North-Wells	Often	Very important	Very important	Always	Somewhat important	Very important

District 4

Table 89

Summary Data on Background Characteristics, Eighth-Grade Teachers in 1998-1999, District 4

School-Teacher	Sex	Ethnicity	Full-Time Teaching (years)	Part-Time Teaching (years)	Teaching at School (years)	Current Grade Level	Grade Levels Taught	Current Position
				— *MiC* —				
Kelvyn Park-Catalano	F	White	11	0	11	8, 9	6, 7, 8, 9	Classroom teacher
Kelvyn Park-Novak	M	White	10	0	9	8	6, 7, 8	Lead teacher
Kelvyn Park-Woods	M	White	15	0	4	8	7, 8	Classroom teacher

Table 90

Experience Teaching Mathematics in Context, Eighth-Grade Teachers in 1998-1999, District 4

School-Teacher	Years of Experience	Units Taught in Previous year (#)	Unit(s) Taught
		— *MiC* —	
Kelvyn Park-Catalano	Less than one semester	0	None
Kelvyn Park-Novak	Less than one semester	2 to 4	Ups and Downs
Kelvyn Park-Woods	One semester	0	None

Table 91

Professional Training, Eighth-Grade Teachers in 1998-1999, District 4

School-Teacher	B.A.			M.A.			PhD			Other Credentials
	Major	Minor	Courses	Major	Minor	Courses	Major	Minor	Courses	
				— *MiC* —						
Kelvyn Park-Catalano	Math	Education	10	Math Ed.		4				
Kelvyn Park-Novak	Marketing	Economics		MBA-finance	Economics					+37 credits above masters
			8			15				
Kelvyn Park-Woods	Speech	Education	36	Education						

Table 92

Characterization of Mathematics, Eighth-Grade Teachers in 1998-1999, District 4

School-Teacher	Static 1	Static 2	Dynamic 3	Dynamic 4
		— *MiC* —		
Kelvyn Park-Catalano	Agree	Disagree	Strongly agree	Strongly agree
Kelvyn Park-Novak	Agree	Agree	Strongly agree	Strongly agree
Kelvyn Park-Woods	Strongly agree	Strongly agree	Strongly agree	Strongly agree

Characterization of Mathematics

Static

1. Mathematics is a collection of concepts and skills used to obtain answers to problems.
2. Mathematics is facts, skills, rules, and concepts learned in some sequence and applied in work and future study.

Dynamic

3. Mathematics is thinking in a logical, inquisitive manner and is used to develop understanding.
4. Mathematics is an interconnected logical system that is dynamic and changes as new problem-solving situations arise.

Table 93

Mathematics Teaching and Learning, Eighth-Grade Teachers in 1998-1999, District 4, Part I

School-Teacher	Student Learning					
	1. Context	**2. Skill before More Math**	**3. Skills before Higher Order Thinking**	**4. Small Groups**	**5. Technology**	**6. Writing**
			— MiC —			
Kelvyn Park-Catalano	Agree	Agree	Agree	Agree	Agree	Strongly agree
Kelvyn Park-Novak	Agree	Strongly agree	Agree	No opinion	Disagree	Strongly agree
Kelvyn Park-Woods	Strongly agree	Agree	Strongly agree	Disagree	Strongly agree	Agree

Student Learning

1. Students learn best when they study mathematics in the context of everyday situations.
2. Students need to master basic computation facts and skills before they can engage effectively in studying more mathematics.
3. Students must learn basic skills before they can be expected to analyze, compare, and generalize.
4. Students learn mathematics best in classes where they are able to work in small groups.
5. If students use calculators, they won't learn the mathematics they need to know.
6. Students should write about how they solve mathematical problems.

Table 94

Mathematics Teaching and Learning, Eighth-Grade Teachers in 1998-1999, District 4, Part II

School-Teacher	Pedagogy					
	1. Less Coverage & More Depth	**2. More Content Strands**	**3. Directive**	**4. Model/Example**	**5. Mastery of Concepts**	**6. Student Thinking**
			— MiC —			
Kelvyn Park-Catalano	Strongly agree	Agree	Agree	Agree	Disagree	Strongly agree
Kelvyn Park-Novak	Strongly agree	Strongly agree	Agree	Strongly agree	Agree	No opinion
Kelvyn Park-Woods	Agree	Agree	Agree	Agree	Strongly agree	Strongly agree

School-Teacher	Pedagogy					
	7. Student Thinking	**8. Invented Strategies**	**9. Open-Ended Tasks**	**10. Discussion**	**11. Problem Solving**	**12. Connections**
			— MiC —			
Kelvyn Park-Catalano	Agree	Agree	Agree	Agree	Agree	Agree
Kelvyn Park-Novak	Strongly agree	Agree	Agree	Strongly agree	Strongly agree	Strongly agree
Kelvyn Park-Woods	No opinion	Agree	Agree	Agree	Strongly agree	Strongly agree

Pedagogy

1. It is more important to cover fewer topics in greater depth than it is to cover the text.
2. More algebra, geometry, probability and statistics should be introduced in the elementary and middle school curriculum.
3. Instruction should include step-by-step directions.
4. Teaching a mathematical concept should begin with a concrete example or model.
5. In teaching mathematics, my primary goal is to help students master basic concepts and procedures.
6. Teachers should plan instruction based upon their knowledge of their students' understanding.
7. More emphasis should be given to simple mental computation, estimation, and less emphasis to practicing lengthy pencil-and-paper calculation.
8. Teachers should encourage children to find their own strategies to solve problems even if the strategies are inefficient.
9. Instruction should include many open-ended tasks.
10. Students should learn mathematics through regularly discussing their ideas with other students.
11. Mathematical problem solving should be a central feature of the elementary and middle school curriculum.
12. In my teaching I try to make connections among mathematical topics and between mathematics and other disciplines.

Table 95

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Formal Assessment and Frequency of Use, Eighth-Grade Teachers in 1998-1999, District 4

School-Teacher	Types of Formal Assessment					
	Standardized Tests			Classroom Projects		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Kelvyn Park-Catalano	Sometimes	Not very important	Not important at all	Always	Very important	Very important
Kelvyn Park-Novak	Sometimes	Somewhat important	Not very important	Sometimes	Somewhat important	Somewhat important
Kelvyn Park-Woods	Often	Very important	Somewhat important	Always	Very important	Very important

School-Teacher	Types of Formal Assessment					
	Classroom Quizzes and Tests			Portfolios of Student Work		
	Frequency	What to Teach Next	Grades	Frequency	What to Teach Next	Grades
			— *MiC* —			
Kelvyn Park-Catalano	Always	Very important	Very important	Often	Not very important	Somewhat important
Kelvyn Park-Novak	Always	Very important	Very important	Often	Very important	Very important
Kelvyn Park-Woods	Always	Very important	Very important	Often	Not very important	Very important

Table 96

Importance of Student Performance in Determining Instructional Decisions and Grades, Type of Informal Assessment and Frequency of Use, Eighth-Grade Teachers in 1998-1999, District 4

School-Teacher	Types of Informal Assessment								
	Student Questions			Student Explanations			Student Written Explanations on Classwork and Assignments		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —									
Kelvyn Park-Catalano	Always	Very important	Somewhat important	Always	Very important	Very important	Always	Very important	Very important
Kelvyn Park-Novak	Often	Very important	Somewhat important	Often	Very important	Very important	Often	Very important	Somewhat important
Kelvyn Park-Woods	Always	Very important	Somewhat important	Always	Very important	Very important	Always	Very important	Very important

School-Teacher	Types of Informal Assessment					
	Observation of Student Work			Student Work Across Assessments Inferred Growth of Student Knowledge and Reasoning Power		
	Frequency	What to Teach Next	Student Grades	Frequency	What to Teach Next	Student Grades
— MiC —						
Kelvyn Park-Catalano	Always	Somewhat important	Somewhat important	Always	Very important	Very important
Kelvyn Park-Novak	Often	Very important	Very important	Often	Very important	Somewhat important
Kelvyn Park-Woods	Always	Very important	Very important	Always	Very important	Very important