

APPENDIX B: SURVEY, PART 1

[Date]

Dear [Teacher's name]

Please allow me to introduce myself. I am a mathematics teacher at Baltimore City Community College, as well as a graduate student in mathematics education at the University of Maryland. As part of my dissertation, I am conducting a survey of all eighth-grade mathematics teachers in [your county] to assess teachers' opinions and practices. I have been given permission from the school district's Director of Research in [your county], as well as from your principal, and am conducting this research with the support of the Mathematics Curriculum Office. However, your completing this survey is still voluntary. My study could provide the county with valuable information on the curriculum and instruction in eighth-grade mathematics classes and could help guide decisions about the mathematics curriculum in the future. Your thoughtful and honest participation in the survey is requested, as it will help us tremendously.

Enclosed you will find the questionnaire for my dissertation. I am asking for you to complete the questionnaire and then use the enclosed, stamped envelope to mail it directly to me for analysis. Teachers interested in the final study may, upon request, receive data compiled in statistical summary form only. Individual teachers' responses will be kept strictly confidential. Under no circumstances will information identifying individual teachers be released to school personnel, district personnel or anyone else.

As a second phase in this study, I will re-sample respondents with a shorter questionnaire in March in order to get information that is more easily answered toward the end of the school year. Thus, an identification number appears on the questionnaire. Let me say again, however, that I am the only one who will ever see individual completed questionnaires. After the data have been collected, there will be no way to connect a questionnaire or identification number to your name as the identification number list will be destroyed.

The attached \$2 is a token gesture of thanks for taking the time to respond. I realize it is not adequate compensation for the approximately 15 minutes of your time that it will take to complete the questionnaire. When you have completed the questionnaire, place it in the envelope, and seal it. Please mail this to me by November 30th, 1999.

Should you have any questions concerning this study, please call me at 410-542-8372. Thank you very much for your cooperation in this effort.

Sincerely,

Felice Shore

Since classes often have their own "personalities" to which teachers might respond, we would like you to consider one specific class when responding to this survey.

Please consider only your math class during _____ period when responding to questions pertaining to your mathematics class and instruction.

Teacher Questionnaire

As you respond to the questions on the survey, please consider only the **specified class**, named on the cover sheet to this packet.

A. Your Class

1. What is the name of the course you teach during the specified period? _____

2. How would you describe the **diversity** of the ability levels in this class? (Please circle one number on the scale)

Students are very similar in ability						Students are very diverse in ability
1	2	3	4	5	6	7

3. When you think about this particular class, what is your impression of their **ability** level on average?

Generally low in ability						Generally high in ability
1	2	3	4	5	6	7

B. Teacher opinions

4. In your opinion how great a problem is each of the following for mathematics instruction in this class?

	Serious problem						Not a Problem
a) Student interest in mathematics.....	1	2	3	4	5	6	7
b) Student reading abilities.....	1	2	3	4	5	6	7
c) Time to teach mathematics.....	1	2	3	4	5	6	7
d) Opportunities for teachers to share ideas.....	1	2	3	4	5	6	7
e) In-service opportunities.....	1	2	3	4	5	6	7
f) Interruptions for announcements, assemblies, other school activities.....	1	2	3	4	5	6	7
g) Large classes.....	1	2	3	4	5	6	7
h) Maintaining discipline.....	1	2	3	4	5	6	7
i) Sufficient parental support.....	1	2	3	4	5	6	7
j) Time to plan for mathematics instruction.....	1	2	3	4	5	6	7

5. Using the scale provided, indicate the extent to which you agree or disagree with each of the following statements:

	Strongly Disagree		Neutral		Strongly Agree		
a) Teachers in our department are continually learning and seeking new ideas.....	1	2	3	4	5	6	7
b) There is a great deal of cooperative effort among teachers on my 8 th grade team.....	1	2	3	4	5	6	7
c) I am encouraged to experiment with my teaching.....	1	2	3	4	5	6	7
d) I have a supportive building administration.....	1	2	3	4	5	6	7

6. How much control do you have over each of the following for your mathematics instruction in the specified class?

	No Control				Strong Control		
a) Setting the pace for covering topics.....	1	2	3	4	5	6	7
b) Selecting teaching techniques.....	1	2	3	4	5	6	7
c) Selecting textbooks or other instructional materials.....	1	2	3	4	5	6	7
d) Determining the amount of homework to be assigned.....	1	2	3	4	5	6	7
e) Choosing criteria for grading students.....	1	2	3	4	5	6	7

7. In the left section, please rate each of the following in terms of its *importance* for effective mathematics instruction in the class you teach. In the right section, please indicate how *prepared* you feel to do each one.

	Importance				Preparation									
	Not Important	Somewhat Important	Fairly Important	Very Important	Not Adequately Prepared	Somewhat Prepared	Fairly well Prepared	Very Well Prepared						
a) Provide concrete experience before abstract concepts.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
b) Develop students' conceptual understanding of mathematics.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
c) Take students' prior understanding into account when planning curriculum and instruction.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
d) Make connections between mathematics and other disciplines.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
e) Have students work in cooperative learning groups.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
f) Have students participate in appropriate hands-on activities.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
g) Engage students in applications of mathematics in a variety of contexts.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
h) Use performance-based assessment.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
i) Use informal questioning to assess student understanding.	1	2	3	4	5	6	7	1	2	3	4	5	6	7

C. Your Instruction

8. Please estimate how often students in your specified class take part/will take part in the following activities during the year. Circle the response that most closely matches that extent of time.

Then, think about when your students did these activities, *even if only once*: How much TIME during the class periods did students spend on that activity on average? Give an estimate in minutes to the right of the table.

	Less than 3 times/year	3-9 times over the year	1-3 times per month	1 or 2 times per week	Nearly every day	Minutes
a. Practice computational or algebraic manipulation skills	1	2	3	4	5	
b. Work on problems that have more than one solution	1	2	3	4	5	
c. Make conjectures and discuss various methods during problem solving	1	2	3	4	5	
d. Work individually on mathematics problems from textbook/worksheet	1	2	3	4	5	
e. Memorize facts or steps	1	2	3	4	5	
f. Work together in pairs or small groups on mathematical problems	1	2	3	4	5	
g. Work on group investigations that might extend over several days	1	2	3	4	5	
h. <u>Write</u> about how to solve a problem in an assignment	1	2	3	4	5	
i. Orally explain how to solve a problem	1	2	3	4	5	
j. Work on mathematical problems embedded in a realistic context	1	2	3	4	5	
k. Practice application/word problems very similar to textbook examples	1	2	3	4	5	
l. Practice mathematical rules or procedures	1	2	3	4	5	
m. Use manipulative materials or models	1	2	3	4	5	
n. Work on single or two-step word problems	1	2	3	4	5	
o. Use calculators or computers to solve problems requiring the integration of several concepts or skills	1	2	3	4	5	
p. Listen to teacher lectures	1	2	3	4	5	
q. Engage in student- or teacher-led whole group discussion	1	2	3	4	5	
r. Complete short-answer items on tests (e.g., multiple choice, true/false, fill-in-the-blank)	1	2	3	4	5	
s. Complete any kind of <u>non-routine</u> items on tests	1	2	3	4	5	
t. Complete items on tests requiring symbolic manipulation and procedures	1	2	3	4	5	
u. Complete items on tests requiring open-ended responses (e.g., descriptions, justifications of solutions)	1	2	3	4	5	
v. Engage in performance tasks for assessment purposes	1	2	3	4	5	
w. Use calculators or computers to practice skills	1	2	3	4	5	
x. Use calculators or computers as a tool (e.g., spreadsheets) or to explore patterns	1	2	3	4	5	

D. Your Background and Experience

9. Your college undergraduate major: _____

10. The type of teaching credential you currently hold: (Check all that apply)

- Certified in mathematics (secondary/middle school)
- Certified in secondary/ middle school content field (other than mathematics)
- Certified in elementary education with 18 or more semester hours of mathematics
- Certified in elementary education
- Provisional or emergency credential in mathematics
- Special Education

Other (specify): _____

11. Your teaching experience, counting this year:

a. Years of teaching: _____ years

b. Years teaching math in grades 7-12: _____ years

12. Have you taken calculus?

No

Yes

If yes, How many credits of calculus have you taken? _____

If you have taken mathematics courses beyond calculus, please specify the number of credit hours _____

13. In the last two years, how many college credits (*beyond requirements for initial certification*) from formal courses in mathematics or mathematics education have you earned ?

of credits _____

14. During the last 2 years, what is the total amount of time you have spent on in-service education in mathematics or the teaching of mathematics? (Include attendance at professional meetings, workshops, and conferences, but do not include formal courses for which you received college credit.) Assume a full school-day workshop = 6 hours

<u>Hours of inservice education</u>	<u>Circle one</u>
none	1
less than 6 hours	2
6-15 hours	3
16-30 hours	4
31-60	5
more than 60 hours	6

15. You are:

Male

Female

Thank you for completing this questionnaire. Again, your responses will be kept strictly confidential. Once all the data have been collected, the link between identification numbers and teachers names will be destroyed. **Under no circumstances will information identifying individual teachers be released to any school or district personnel.** Please place the questionnaire in the stamped, addressed envelope that was included in this packet. Simply drop it in a mailbox at your earliest convenience. Thank you so very much for your cooperation!

APPENDIX C: SURVEY PART 2

Dear Survey Participant,

This past November you responded to a survey that I sent to eighth-grade mathematics teachers in [the county] as part of a study on teachers' opinions and instructional practices. I received back 55 out of 67 surveys. Thank you very much for completing that questionnaire.

There were certain questions that I thought you could more readily answer if presented with them towards the end of the school year, so they were omitted from the previous questionnaire. I am now asking you to please complete the short questionnaire enclosed, which will conclude your participation in the study. Of the four questions, one of them is a repeat item from the previous questionnaire. Unfortunately it is the one that probably took the most time to complete – it is about the frequency and duration of use of various instructional practices. The purpose for including it again is to take another “snapshot” of your classroom at a different time of year. The purpose for asking you to estimate the minutes of use is to get a more precise picture of your classroom. I realize this is difficult to do, and not perfectly accurate, but do your best at *estimating* how many minutes (on average) your students would spend doing a particular activity during the class period when they do it - even if only once or twice per year.

The attached \$2 is a token gesture of thanks for responding once again. An executive summary of the study's findings will be mailed to participating teachers at the completion of the study, which is estimated to be June, 2001.

When you have completed the questionnaire place it in the envelope, and seal it. Please mail this to me by April 7th, if possible. Thank you very much for your valuable input once again. If you have any questions, please feel free to call me at 410-542-8372.

Sincerely,

Felice Shore

As with the previous questionnaire, **please consider only your math class during _____**
when responding to these questions.

1. For your specified class, to what extent do you think you will cover the following topics so that students in your class will be sufficiently prepared on those topics for [the PA]?

	No Coverage at all							Thorough Coverage
Computation and estimation.....	1	2	3	4	5	6	7	
Work with fractions, decimals and percents.....	1	2	3	4	5	6	7	
Work with ratios and proportions.....	1	2	3	4	5	6	7	
Measurement of areas and perimeters of plane and solid figures.....	1	2	3	4	5	6	7	
Geometry (transformational, Pythagorean Theorem, constructions).....	1	2	3	4	5	6	7	
Statistics and data analysis.....	1	2	3	4	5	6	7	
Probability.....	1	2	3	4	5	6	7	
Patterns and Functions (and relating patterns to graphs and tables).....	1	2	3	4	5	6	7	
Algebra (simplifying and evaluating expressions, solving equations).....	1	2	3	4	5	6	7	

2. On the left side, indicate to what extent you are familiar with each of the documents. On the right side, indicate to what extent each of those influences what/how you teach the *specified math class*.

	How familiar are you with each?							How much does each influence your teaching?						
	Not at All	Just a bit		Somewhat		Very Much		Not at All	Just a bit		Somewhat		Very Much	
[State] Learning Outcomes	1	2	3	4	5	6	7	1	2	3	4	5	6	7
County Curriculum Guides	1	2	3	4	5	6	7	1	2	3	4	5	6	7
NCTM Standards	1	2	3	4	5	6	7	1	2	3	4	5	6	7
[PA] Math Test	1	2	3	4	5	6	7	1	2	3	4	5	6	7
[FMT]	1	2	3	4	5	6	7	1	2	3	4	5	6	7

3. Please estimate how often students in your specified class take part/will take part in the following activities during the year. Circle the response that most closely matches that extent of time.

Then, think about when your students did these activities, *even if only once*: How much TIME during the class periods did students spend on that activity on average? Give an estimate in minutes to the right of the table.

	Less than 3 times/year	3-9 times over the year	1-3 times per month	1 or 2 times per week	Nearly every day	Minutes Per Period
a. Practice computational or algebraic manipulation skills	1	2	3	4	5	
b. Work on problems that have more than one solution	1	2	3	4	5	
c. Make conjectures and discuss various methods during problem solving	1	2	3	4	5	
d. Work individually on mathematics problems from textbook/worksheet	1	2	3	4	5	
e. Memorize facts or steps	1	2	3	4	5	
f. Work together in pairs or small groups on mathematical problems	1	2	3	4	5	
g. Work on group investigations that might extend over several days	1	2	3	4	5	
h. Write about how to solve a problem in an assignment	1	2	3	4	5	
i. Orally explain how to solve a problem	1	2	3	4	5	
j. Work on mathematical problems embedded in a realistic context	1	2	3	4	5	
k. Practice application/word problems very similar to textbook examples	1	2	3	4	5	
l. Practice mathematical rules or procedures	1	2	3	4	5	
m. Use manipulative materials or models	1	2	3	4	5	
n. Work on single or two-step word problems	1	2	3	4	5	
o. Use calculators or computers to solve problems requiring the integration of several concepts or skills	1	2	3	4	5	
p. Listen to teacher lectures	1	2	3	4	5	
q. Engage in student- or teacher-led whole group discussion	1	2	3	4	5	
r. Complete short-answer items on tests (e.g., multiple choice, true/false, fill-in-the-blank)	1	2	3	4	5	
s. Complete any kind of <u>non-routine</u> items on tests	1	2	3	4	5	
t. Complete items on tests requiring symbolic manipulation and procedures	1	2	3	4	5	
u. Complete items on tests requiring open-ended responses (e.g., descriptions, justifications of solutions)	1	2	3	4	5	
v. Engage in performance tasks for assessment purposes	1	2	3	4	5	
w. Use calculators or computers to practice skills	1	2	3	4	5	
x. Use calculators or computers as a tool (e.g., spreadsheets) or to explore patterns	1	2	3	4	5	

4. For your specified class, please indicate how strongly you agree or disagree with each of the following statements. (Where "[PA]" is referred to, please consider only the Math portion of the [PA].)

	Strongly Disagree	Neutral					Strongly Agree
a. Students should not be permitted to move to the algebra class until they have passed the [FMT].....1	2	3	4	5	6	7	
b. I feel pressure to get all students to pass the [FMT] by the end of the year.....1	2	3	4	5	6	7	
c. I do not have any difficulty in simultaneously preparing students for both the [FMT] and the [PA].....1	2	3	4	5	6	7	
d. Spending class time on [PA]-type activities also helps students learn some "basics.".....1	2	3	4	5	6	7	
e. I spend less time working on [PA]-type activities because many students still need to learn the basics.....1	2	3	4	5	6	7	
f. I use instructional strategies that should help students perform well on the [PA].....1	2	3	4	5	6	7	
g. In my class, I emphasize skills and content that are on the [FMT].....1	2	3	4	5	6	7	
h. I feel that the pressures of preparing students for the [PA] and the [FMT] give me mixed messages about how to teach my class.1	2	3	4	5	6	7	
i. Preparing my students for the [PA] allows me to teach the way I want to.....1 2	3	4	5	6	7		
j. In this class, I have time to cover the basics of the course, and still expect students to engage in higher-order thinking.....1	2	3	4	5	6	7	

For crosschecking purposes, the name of the course you teach during the specified period is _____.

Thank you again for taking your time to complete this questionnaire. Your responses will be kept strictly confidential. Once all the data have been collected, the link between identification numbers and teachers names will be destroyed. Under no circumstances will information identifying individual teachers be released to any school or district personnel.

Please place the questionnaire in the stamped, addressed envelope that was included in this packet. Simply drop it in a mailbox at your earliest convenience. Thank you so much for your cooperation.

[Last page of Survey, Part 2 to Algebra I and II teachers]

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4. For your specified class, please indicate how strongly you agree or disagree with each of the following statements. (Where "[PA]" is referred to, please consider only the Math portion of the [PA].)

	Strongly Disagree		Neutral			Strongly Agree	
	1	2	3	4	5	6	7
a. I do not have any difficulty in simultaneously preparing students for both the Algebra final exam and the [PA].....	1	2	3	4	5	6	7
b. Preparing students for the Algebra final exam helps prepare them for the [PA].....	1	2	3	4	5	6	7
c. Spending class time on [PA]- type activities also helps students learn some algebra concepts or skills.....	1	2	3	4	5	6	7
d. If I spend time preparing students for [PA], I'm afraid they would not learn enough algebra content.....	1	2	3	4	5	6	7
e. In teaching algebra, I use instructional strategies that should help students perform well on [PA].....	1	2	3	4	5	6	7
f. I feel that the pressures of preparing students for the [PA] and the algebra final give me mixed messages about how to teach my class.....	1	2	3	4	5	6	7
g. Preparing my students for the [PA] allows me to teach the way I want to.....	1	2	3	4	5	6	7
h. In this class, I have time to cover the basics of the course, and still expect students to engage in higher-order thinking.....	1	2	3	4	5	6	7

For crosschecking purposes, the name of the course you teach during the specified period is _____.

Thank you again for taking your time to complete this questionnaire. Your responses will be kept strictly confidential. Once all the data have been collected, the link between identification numbers and teachers names will be destroyed. Under no circumstances will information identifying individual teachers be released to any school or district personnel.

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