

Appendix G

Teacher Focus Group Protocol

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Toolkit to Support Evidence-Based Algebra Instruction in Middle and High School

I. Introduction [5 minutes]

Thank you for agreeing to meet with us and discuss your experience using the Algebra Toolkit and implementing the recommended practices in your classroom during this school year. My name is [NAME OF FACILITATOR] and this is my colleague [NAME OF NOTE TAKER]. We are from the Regional Educational Laboratory Central, also known as REL Central, which is funded by the U.S. Department of Education and operated by Mathematica and its partners. REL Central is conducting this study.

This discussion today will help us understand what has gone well with using the resources to implement the recommendations and related instructional strategies in your classroom, what challenges you encountered, and how we can further improve the Toolkit and its resources. Your point of view is extremely valuable. Our conversation today will take about 60 minutes, and afterwards we will send you a \$50 gift card to thank you for your participation. We will record our conversation and take notes; this will help ensure we correctly document what you say. The recording will be erased after we have completed writing up our notes. If you'd like to say something that you prefer not to be recorded, please let us know and we will pause the recorder. [START THE RECORDER]

Now I want to review the consent statement that we sent with the email invitation for this discussion and then obtain your verbal consent to participate [READ THROUGH CONSENT FORM FROM SECOND PARAGRAPH ONWARDS]. Does anyone have any questions? [IF NO QUESTIONS, OBTAIN EACH PARTICIPANT'S VERBAL CONSENT ON THE RECORDING BY ASKING EACH PARTICIPANT TO STATE THEIR NAME AND IF THEY AGREE TO PARTICIPATE IN THE DISCUSSION].

We will keep the information you share with us private. We will only use first names as we talk today. If we use quotes from this discussion, we will not include the name of the person who made the statement. Nobody except the study's researchers will see any of the notes from our discussion.

We are also talking to other teachers who used the Toolkit during this school year. We will take our notes from our discussion today and combine them with information from the discussions with other teachers. This will help us understand teachers' experiences with using the Toolkit and implementing the recommended instructional practices.

Please keep in mind:

- There are no right or wrong answers to our questions and how you respond to questions will not negatively affect you. We are just here to learn about your experiences with using the Toolkit and implementing the recommendations.
- Being part of our discussion is completely voluntary. You do not need to answer any questions you do not wish to answer.
- Refusing to participate or answer a question will not negatively affect you in any way.
- Please remember to be respectful of everyone's opinions, even if they are different from your own.
- Please do not share what we discuss today outside of this call. Please respect one another's privacy.

Does anyone have any questions before we get started?

Our discussion today will focus on four main topics. First, we want to hear what it was like using the Toolkit's resources and how useful they were; then we want to hear about your experience learning about and using the three recommendations in your classroom; finally, we want to hear about your plans for using the three recommendations in your classroom going forward.

II. Understanding and Using the Toolkit [15 minutes]

First, we'd like to ask a few questions about your perceptions of various Toolkit resources and activities.

- 1. To what extent do you feel that you understood what the Toolkit is, including its various resources, and its purpose?**
 - a. What supports or activities were most useful for helping you understand the Toolkit's resources and purpose?**
 - b. Were there any aspects of the Toolkit or its resources that were confusing or unclear?**
 - c. Do you have any suggestions for how the Toolkit's resources and purpose could be better introduced and explained to teachers so they can more easily understand them?**

- 2. Throughout the use of the Toolkit, teachers meet together with an instructional leader in a series of professional learning community sessions (also known as PLC sessions) to learn about and reflect on their implementation of the recommended practices.**
 - a. To what extent were the PLC sessions useful for learning about the three recommendations or how to use them in your classroom? Why?**
 - b. What worked well in terms of incorporating the PLC sessions into your existing schedule or professional development activities?**
 - c. What was challenging? What strategies did you use to attempt to address, bypass, or overcome these challenges?**
 - d. Do you have suggestions for how the PLC sessions could be adjusted to make them more useful to teachers like you?**

- 3. The PLC sessions took place within Plan-Do-Study-Act cycles, or PDSA cycles. The PDSA cycles are meant to be a tool to help you reflect on changes to your teaching practice by planning and implementing instructional strategies associated with each of the three recommendations, collecting data on implementation and outcomes, studying your collected data, and making adjustments as needed to optimize their effectiveness in your classroom and with your students.**
 - a. To what extent did you feel that the PDSA cycle model was useful for learning about the three recommendations or how to use them in your classroom? Why?**
 - b. Were any stages of the PDSA cycle (that is: Plan, Do, Study, or Act) easier to work through than others? What made those stages easier to work through?**

- c. **What challenges did you experience using the PDSA cycles, such as difficulties implementing any of the stages? What strategies did you use to attempt to overcome these challenges?**
 - d. **Do you have any suggestions for how the PDSA cycle could be adjusted to make it more useful for teachers like you when using the Toolkit resources?**
4. **Beyond the PLC sessions, there were other Toolkit resources available to use, including the participant workbook prompts and resources, online interactive activities (such as knowledge checks that were a part of some online modules), diagnostic and monitoring tools (including independent non-session work; the PDSA template, the teacher self-reflection tool, the visitation tool, the student survey, the student knowledge assessment tool, and Excel tools to support data input), and individualized support provided by the instructional leader or other PLC members.**
- a. **How easy was it to use these resources? Were any of the Toolkit's resources easier to use than others? What made these resources easier to use?**
 - b. **What challenges did you experience using these resources? Were any resources particularly challenging to use? What strategies did you use to attempt to address, bypass, or overcome these challenges?**
 - c. **Do you have any suggestions for improving the Toolkit resources?**

III. Implementing the Three Recommendations in the Classroom [20 minutes]

As you recall, the Toolkit focused on helping teachers integrate and use three recommendations in their classroom instruction. Thinking back to these three recommendations, I'd like to get your perspectives on what went well, what was challenging when you used each one in your classroom, how you attempted to address, bypass, or overcome these challenges, and how your ability to implement these recommendations has changed since using the Toolkit.

1. Let's start with the first recommendation, using solved problems to engage students in analyzing algebraic reasoning and strategies. *[Note for facilitator: there are three instructional strategies that teachers use to carry out the first recommendation. (1) Have students discuss solved problem structures and solutions to make connections among strategies and reasoning; (2) Select solved problems that reflect the lesson's instructional aim, including problems that illustrate common errors; and (3) Use whole-class discussions, small-group work, and independent practice activities to introduce, elaborate on, and practice working with solved problems.]*
 - a. **What went well with integrating this first recommendation into your lesson plans and using it in your classroom?**
 - b. **What challenges emerged when trying to integrate this first recommendation into your lesson planning or use it in your classroom? How did you attempt to address, bypass, or overcome these challenges?**

- c. **Please describe how your ability to engage students in analyzing algebraic reasoning and strategies changed after using the Toolkit.**
2. Let's move to the second recommendation, teaching students to utilize the structure of algebraic representations. [Note for facilitator: there are three instructional strategies that teachers use to carry out the second recommendation. (1) Promote the use of language that reflects mathematical structure; (2) Encourage students to use reflective questioning to notice structure as they solve problems; and (3) Teach students that different algebraic representations can convey different information about an algebra problem.]
- a. **What went well with integrating this second recommendation into your lesson plans and using it in your classroom?**
 - b. **What challenges emerged when trying to integrate this second recommendation into your lesson planning or use it in your classroom? How did you attempt to address, bypass, or overcome these challenges?**
 - c. **Please describe how your ability to teach students to utilize the structure of algebraic representations changed after using the Toolkit.**
3. Now let's discuss the third recommendation, teaching students to intentionally choose from alternative algebraic strategies when solving problems. [Note for facilitator: there are three instructional strategies that teachers use to carry out the third recommendation. (1) Teach students to recognize and generate strategies for solving problems; (2) Encourage students to articulate the reasoning behind their choice of strategy and the mathematical validity of their strategy when solving problems; and (3) Have students evaluate and compare different strategies for solving problems.]
- a. **What went well with integrating this third recommendation into your lesson plans and using it in your classroom?**
 - b. **What challenges emerged when trying to integrate this third recommendation into your lesson planning or use it in your classroom? How did you attempt to address, bypass, or overcome these challenges?**
 - c. **Please describe how your ability to teach students to intentionally choose from alternative algebraic strategies when solving problems changed after using the Toolkit.**

IV. Sustaining the Recommended Practices [10 minutes]

Our last set of questions focuses on the continued use of the three recommendations in the future.

- 1. **Which, if any, of the Toolkit's resources will you continue to use beyond this school year?**
 - a. **Please describe how you plan to use these resources going forward.**

2. How likely is it that you will continue to use one, two, or all three recommendations in your algebra classroom beyond this school year?
 - a. How do you plan to sustain your use of the recommendations in your algebra classroom?
 - b. Do you foresee any challenges to continuing to use the three recommendations? Please describe.

3. While the Toolkit is meant to be used in a group of teachers, there may be situations where this isn't feasible. With that in mind, do you think a teacher who is new to teaching algebra would be able to use the Toolkit resources to improve their instruction either on their own or with a modest amount of guidance, *outside of the context of a PLC*?
 - a. Do you have any suggestions for how to introduce teachers to the Toolkit and support them as they use it in this type of situation?

Thank you for your participation in today's focus group!