Draft OMB Clearance Request
Promoting Student Success in Algebra I

Appendix A: Protocols for Instructional Practices in Algebra I

March 2014

OMB Approval No.: 0000-0000

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PROMOTING STUDENT SUCCESS IN ALGEBRA I

Instructional Practices Topical Area

District Interview: Official with Primary Responsibility for Mathematics

Name:	**Title:**
District:	**State:**
Interviewed by:	**Date:**

INTRODUCTION AND BACKGROUND

Good morning/afternoon. First of all, thank you so much for being here and for being willing to participate in this project for the U.S. Department of Education. Before we start, we would like to introduce ourselves, provide a little background on our work, and answer any questions you might have.

My name is [name], and this is [name of the other site visitor]. We are researchers from American Institutes for Research and Windwalker Corporation, organizations that conduct research and technical assistance in education. We are here today to interview you as part of a collaborative effort to provide program developers and administrators with information to promote student success in Algebra I. We are particularly interested in Algebra I because it's a gatekeeper course in that it's a prerequisite for subsequent high school mathematics and science courses considered essential for getting into college. So, it is an important stepping-stone for success in high school and college.

As part of this project for the U.S. Department of Education, we are speaking with teachers, math department leaders, school administrators, and district staff about the instructional practices employed that contribute to student success in Algebra I. With respect to district officials, we are interested in your perspectives on instructional practices in Algebra—how they were selected, how they are implemented, the challenges faced in implementing them, and the supports needed to implement these practices well. The data we collect will be used to develop technical assistance tools to help program developers and administrators implement similar programs to support struggling students.

I'll talk more about the topics of this interview, but for now, are there any questions about the project or why we are here?

DESCRIPTION OF INTERVIEW PROCEDURE AND CONFIDENTIALITY

Next, I'd like to say a few things about the process for this discussion. Responses to this data collection will be used to summarize findings in an aggregate manner (within a school or district), or will be used to provide examples of implementation in a manner that does not associate responses with a specific site or individual. In the publications, pseudonyms will be used for each site. The project team may refer to the generic title of an individual (e.g., "project director," or "eighth grade teacher") but

neither the site name nor the individual name will be used. All efforts will be made to keep the description of the site general enough so that a reader would never be able to determine the true name or identity of the site or individuals at the site. The contractor will not provide information that associates responses or findings with a subject or district to anyone outside the study team, except as required by law.

I'd like to ask you to sign a consent form before we begin. It outlines some of the issues I've just mentioned with regard to confidentiality. Please take a minute to read it and let me know if you have any questions.

PRA Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1810-xxxx. Public reporting burden for this collection of information is estimated to average 28 hours for instructional practices, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is voluntary. If you have comments or concerns regarding the status of your individual submission of this survey, please contact (Project Director, Kirk Walters, at the American Institutes for Research at 202-403-5838 or at kwalters@air.org) directly. [Note: Please do not return the completed survey to this address.]

Are there any questions before we get started?

Notes to interviewer:
- Throughout the interview, possible probes are set aside following each general question. We would like to gather information relative to each of those probes. If, when the general question is asked, the respondent provides the information requested by the probes, you do not need to ask the probing questions. In addition to providing additional information, asking the probing questions may help move the interview pace or may prompt a less talkative respondent. Keep the tone conversational and comfortable.

- To the extent that this information can be retrieved from other data sources (e.g., school records) beforehand, document that information below prior to the interview. During the interview, prompt the District Official to confirm its accuracy if his or her initial response does not do so.

BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

1. **Can you tell me a bit about your background and how you came to serve as the mathematics coordinator for [district name]?**

   Listen for:
   - *How long have you worked for [district name]?*
   - *How long have you served as the mathematics coordinator?*

2. **Could you describe your current role in the district? What are your primary responsibilities?**

   Listen for:
   - *Do you work directly with teachers? If so, in what way(s)?*
   - *Do you work directly with curriculum development? If so, in what way(s)?*

IMPETUS FOR AND DEVELOPMENT OF INSTRUCTIONAL APPROACH

I understand that mathematics teachers at [school name] are using instructional practices that place a dual emphasis on building students' procedural fluency and conceptual understanding of Algebra. I'd like to ask you a few questions about how this instructional approach was developed.

3. **Could you describe the core features of this approach to Algebra I? What are the defining principles of this approach?**

   Listen for:
   - *What specific types of instructional practices does this approach involve?*
   - *What grades/courses are involved?*

4. **Do you know what prompted the school to consider incorporating/advocating for instructional practices with this dual emphasis? Were such instructional practices adopted as part of a larger district initiative?**

   Listen for:
   - *What grade levels/mathematics courses did the initiative target?*
   - *What was the rationale for integrating these types of instructional practices and why?*

5. **Were you involved in the adoption of this instructional approach with this dual emphasis on procedural fluency and conceptual understanding or the development or selection of resources to support these instructional practices? If so, do you feel like your contributions were valued and reflected in the current approach?**

6. **Which other school and/or district staff members were involved in the decision to adopt/advocate this new approach to Algebra I instruction? What roles did they play?**

   Listen for:
   - *Were educators and administrators at different levels able to influence the adoption and development of these instructional practices?*

7. **We understand that your district provides tools to support the implementation of these instructional practices in Algebra I. [If necessary, explain: tools for sequencing/pacing, for assessing students, etc.] What was the process for developing/selecting these tools?**

   Listen for:
   - *Who was involved and what were their roles?*
   - *What features of these resources were important in the selection/development process?*

IMPLEMENTATION OF INSTRUCTIONAL PRACTICES

Now that we have a better sense of how the instructional approach was developed, I am interested in how it is implemented.

Implementation Features and Context

8. **Can you describe, more specifically, what these instructional practices in Algebra I should look like in classrooms at [name of school]?**

   Listen for:
   - *What specific instructional practices should teachers be using in their classrooms?*
     - *Making sense of symbols through modeling, prediction, exploration, justification*
     - *Making sense of procedures through comparing worked examples*
   - *What, specifically, about these practices promotes conceptual understanding?*
   - *What, specifically, about these practices promotes procedural fluency?*

Tools Supporting Implementation

Note to interviewer: *We expect to receive a range of resources from schools prior to the interview. Some may have been developed/selected by the district and others might have been developed/selected by the school. These resources may provide guidance on sequencing/pacing, some may be resources to be used in designing instruction, and some may be assessments. The following series of questions addresses the different types of resources that the district provided. If you are not provided with a resource of a particular type, skip the question.*

Now, we would like to ask specific questions about tools or resources that teachers at [school name] may use to support implementation of instructional practices that simultaneously promote procedural fluency and conceptual understanding.

9. **We understand the district provided teachers/schools with {insert sequencing/pacing resource}. In what ways are teachers expected to use this?**

   For each sequencing/pacing resource, listen for:
   - *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
   - *Is this resource required or suggested for teachers?*
   - *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

10. **We understand the district provided teachers/schools with {insert instructional resource}. In what ways are teachers expected to use this in their instruction?**

    For each instructional resource, listen for:
    - *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
    - *Is this resource required or suggested for teachers?*
    - *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

11. **We understand the district provided teachers/schools with {insert assessment resource}. In what ways are teachers expected to use this in their instruction?**

For each assessment resource, listen for:

- *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
- *Is this resource required or suggested for teachers?*
- *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

12. Can you describe any other tools that the district provides to teachers or school leaders that we have not discussed here, such as software or technology or access to online resources?

Listen for:

- *What was the intended purpose of the resource?*
- *How was this tool selected/developed?*
- *Are teachers or school leaders required to use the resource?*
- *What resources, financial or otherwise, are needed to provide these resources?*

13. What additional tools would be useful to increasing success in implementing instructional practices that promote both procedural fluency and conceptual understanding?

Teacher and Leader Support

14. What types of professional learning opportunities or training do teachers receive to support their implementation of instructional practices that promote procedural fluency and conceptual understanding?

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- *What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- *Who provides the training, and who receives it?*
- *When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- *What are the training objectives?*
- *Is there anything that is not currently covered in the training that should be?*
- *What resources, financial or otherwise, are needed to support this training?*

15. **What, if any, types of professional learning opportunities or training do principals and/or school leaders receive to support implementation of instructional practices that promote procedural fluency and conceptual understanding**

    Listen for:
    - *What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
    - *Who provides the training, and who receives it?*
    - *When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
    - *What are the training objectives?*
    - *Is there anything that is not currently covered in the training that should be?*
    - *What resources, financial or otherwise, are needed to support this training?*

16. **In what ways do you, as the district mathematics coordinator, support teachers and schools in implementing instructional practices that promote procedural fluency and conceptual understanding?**

    Listen for:
    - *How frequently do you meet with them individually or collectively? For what purpose?*
    - *To what extent do you monitor teachers' progress in implementing instructional practices that promote procedural fluency and conceptual understanding?*
    - *Do you conduct classroom observations? Do you conduct walkthroughs? If so, how often? Do you provide feedback to teachers and/or school leaders?*

17. **Do you feel that you receive adequate support to facilitate the implementation of the instructional approach?**

    Listen for:
    - *Do you receive any specific training on how to support and monitor the instructional approach?*
    - *In what ways are you supported, and who provides the support?*
    - *What additional support would you like to receive?*

Implementation Challenges

18. **What are the major challenges that teachers and administrators at [school name] face when implementing instructional practices that promote procedural fluency and conceptual understanding? How does the district help them address these challenges?**

Listen for:

- *What strategies did and did not work and why?*

19. What challenges has the district encountered in supporting the use of instructional practices that promote procedural fluency and conceptual understanding? In what ways have you addressed these challenges?

Listen for:

- *What strategies did and did not work and why?*

20. What changes would you make to increase the success of implementing instructional practices that promote procedural fluency and conceptual understanding?

OUTCOMES OF THE INSTRUCTIONAL APPROACH

Next, I would like to talk about outcomes of this instructional approach.

21. How does your district measure success of the instructional approach?

Listen for:

- *Course grades or failure rates*
- *Student achievement measures*
- *Graduation or drop-out rates*
- *Other metrics*

22. Do you believe the instructional approach has been successful according to these measures? Why or why not?

23. Does the instructional approach appear to be more successful for some groups of students than others?

If yes:

Which students benefit the most? Why?

Which students benefit the least? Why?

FINAL THOUGHTS AND CONCLUSION

OK, please take a step back to provide some key take-away thoughts from this interview today.

24. What do you think are the key components—the active ingredients—of a successful instructional program that promotes both conceptual understanding and procedural fluency in algebra?

25. Do you have anything else that you would like to add before we conclude this interview?

Those are all the questions I have. Thank you for your time and for participating in this project.

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PROMOTING STUDENT SUCCESS IN ALGEBRA I

Instructional Practices Topical Area

Principal Interview

Name:	**Title:**
School:	**District:**
State:	
Interviewed by:	**Date:**

INTRODUCTION AND BACKGROUND

Good morning/afternoon. First of all, thank you so much for being here and for being willing to participate in this project for the U.S. Department of Education. Before we start, we would like to introduce ourselves, provide a little background on our work, and answer any questions you might have.

My name is [name], and this is [name of the other site visitor]. We are researchers from American Institutes for Research and Windwalker Corporation, organizations that conduct research and technical assistance in education. We are here today to interview you as part of a collaborative effort to provide program developers and administrators with information to promote student success in Algebra I. We are particularly interested in Algebra I because it's a gatekeeper course in that it's a prerequisite for subsequent high school mathematics and science courses considered essential for getting into college. So, it is an important stepping-stone for success in high school and college.

As part of this project for the U.S. Department of Education, we are speaking with teachers, math department leaders, school administrators, and district staff about the instructional practices employed that contribute to student success in Algebra I. With respect to principals, we are interested in your perspectives on how the Algebra I program is being developed and implemented and the program's success at achieving its goals. The data we collect will be used to develop technical assistance tools to help program developers and administrators implement similar programs to support struggling students.

I'll talk more about the topics of this interview, but for now, are there any questions about the project or why we are here?

DESCRIPTION OF INTERVIEW PROCEDURE AND CONFIDENTIALITY

Next, I'd like to say a few things about the process for this discussion. During our session today, I'll be asking you some questions, and [another site visitor] will be taking notes on what you are saying. [S/he] will not record your names. If you don't mind, I would also like to record our conversation simply for note-taking purposes. No one outside of our project team will hear the recording; it will just be for our own reference. If you would like us to turn off the recorder at

any point, just let me know. Would that be OK?

I want to assure you that we will treat the information you provide in a confidential manner. The recorded interview will be transcribed by a member of the project team, and only selected research staff will have access to the data, except as required by law. We will not use your name or attribute any quotes to you, instead, we will use pseudonyms in practice profiles. All efforts will be made to keep the description of the site general enough so that a reader would never be able to determine the true name or identity of the site or individuals at the site. Therefore, no one who reads the profiles of practice will know that the statements came from you.

I'd like to ask you to sign a consent form before we begin. It outlines some of the issues I've just mentioned with regard to anonymity and confidentiality. Please take a minute to read it and let me know if you have any questions.

Are there any questions before we get started?

Notes to interviewer:
- Throughout the interview, possible probes are set aside following each general question. We would like to gather information relative to each of those probes. If, when the general question is asked, the respondent provides the information requested by the probes, you do not need to ask the probing questions. In addition to providing additional information, asking the probing questions may help move the interview pace or may prompt a less talkative respondent. Keep the tone conversational and comfortable.

- To the extent that this information can be retrieved from other data sources (e.g., school records) beforehand, document that information below prior to the interview. During the interview, prompt the Principal to confirm its accuracy if his or her initial response does not do so.

BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

1. **Can you tell me a bit about your background and how you came to serve as the principal at [school name]?**

   Listen for:
   - *How long have you served as the principal at [school name]?*
   - *How long have you worked for [district name]?*

2. **Tell me a bit about your role as a principal. In what ways do you work with teachers on their instruction?**

IMPETUS FOR AND DEVELOPMENT OF INSTRUCTIONAL APPROACH

I understand that mathematics teachers at your school are using instructional practices that place a dual emphasis on building students' procedural fluency in and conceptual understanding of Algebra I.

By *procedural fluency*, we're referring to students' skill in carrying out procedures flexibly, accurately, efficiently, and appropriately. This includes knowing when to use a mathematics procedure (algorithm) and being able to use the procedure correctly.

By *conceptual understanding*, we're referring to students' comprehension of mathematical concepts, operations, and relations. This may include making connections between and among mathematic concepts, understanding the "why" behind mathematics procedures, knowing how to represent mathematics in different ways, and knowing how different representations can be useful in different contexts.

3. **What prompted the school to consider incorporating instructional practices with this dual emphasis?**

   Listen for:
   - *Were such instructional practices adopted as part of a larger district initiative? If so, what grade levels/mathematics courses did the initiative target?*
   - *What was the rationale for integrating these types of instructional practices and why?*

4. **Which school and/or district staff members were involved in the decision to adopt this new approach to Algebra I/mathematics instruction? What roles did they play?**

5. **We understand that your district and/or school provides tools to support the implementation of these instructional practices in Algebra I. [If necessary, explain: tools for sequencing/pacing, for assessing students, etc.] What was the process for developing/selecting these tools?**

   Listen for:
   - *Who was involved and what were their roles?*
   - *What features of these resources were important in the selection/development process?*

IMPLEMENTATION OF INSTRUCTIONAL PRACTICES

Now that we have a better sense of how the instructional approach was developed, I am interested in how it is implemented.

Implementation Features and Context

6. **Can you describe, more specifically, what implementation of these instructional practices should look like in Algebra I classrooms within your school?**

   Listen for:
   - *What specific instructional practices should teachers be using in their classrooms?*
   - *What, specifically, about these practices promotes conceptual understanding?*
   - *What, specifically, about these practices promotes procedural fluency?*

Tools Supporting Implementation

Now, we would like to ask specific questions about any tools or resources that your school uses to support implementation of the instructional approach. We understand that some were provided by the district and some were developed within your school. We will ask about both.

Note to interviewer:
We expect to receive a range of resources from schools prior to the interview. Some may have been developed/selected by the district and, potentially, modified by the school. These resources may provide guidance on sequencing/pacing, some may be resources to be used in designing instruction, and some may be assessments. The following series of questions address the different types of resources that the district provided. If you are not provided with a resource of a particular type, skip the question.

7. **We understand the district provided teachers/schools with {insert sequencing/pacing resource}. In what ways do teachers in your school use this?**

For each sequencing/pacing resource, listen for:

- *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
- *Is this resource required or suggested for teachers?*
- *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*
- *If modified, what was the process for modification?*

8. We understand the district provided teachers/schools with {insert instructional resource}. In what ways do teachers in your school use this?

For each instructional resource, listen for:

- *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
- *Is this resource required or suggested for teachers?*
- *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*
- *If modified, what was the process for modification?*

9. We understand the district provided teachers/schools with {insert assessment resource}. In what ways do teachers in your school use this?

For each assessment resource, listen for:

- *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
- *Is this resource required or suggested for teachers?*
- *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*
- *If a modification, what was the process for modification?*

Note to interviewer:
We may be provided with some resources that were developed by the school but were not provided by the district. For each resource of this type, ask questions 10 and 11.

10. We understand that your school developed this {insert resource}. In what ways do teachers or leaders in your school use this resource?

Listen for:

- *Who was involved and what were their roles?*

- *What features of were important in the selection/development process?*

11. Can you describe any other tools that are available to teachers or school leaders that we have not discussed here?

Listen for:

- *What was the intended purpose of the resource?*
- *How was this resource developed/selected?*
- *Are teachers or school leaders required to use the resource?*
- *What resources, financial or otherwise, are needed to provide these resources?*

12. What additional tools would be useful to increasing success in implementing instructional practices that promote both procedural fluency and conceptual understanding?

Teacher and School Leaders Support

13. What types of professional learning opportunities do teachers receive to support their implementation of instructional practices that promote procedural fluency and conceptual understanding?

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- *What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- *Who provides the training, and who receives it?*
- *When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- *What are the training objectives?*
- *Is there anything that is not currently covered in the training that should be?*
- *What resources, financial or otherwise, are needed to support this training?*

14. In what ways do you, the principal, support teachers or other teacher leaders in implementing the instructional approach to Algebra I?

Listen for:

- *How frequently do you meet with them individually or collectively? For what purpose?*

- *To what extent do you monitor teachers' progress in implementing instructional practices that promote procedural fluency and conceptual understanding?*
- *Do you conduct classroom observations? Do you conduct walkthroughs? If so, how often? Do you provide feedback to teachers and/or school leaders?*

15. Do you feel that you receive adequate support to facilitate implementation of the instructional approach?

Listen for:

- *Do you receive any specific training on how to support and monitor the instructional approach?*
- *In what ways are you supported, and who provides the support?*
- *What additional support would you like to receive?*

Implementation Challenges

16. What are the major challenges that your school has faced in supporting the implementation of instructional practices that promote procedural fluency and conceptual understanding in Algebra I? In what ways have you addressed these challenges?

Listen for:

- *What strategies did and did not work and why?*

17. What changes would you make to increase the success of implementing instructional practices that promote procedural fluency and conceptual understanding in Algebra I?

OUTCOMES OF THE INSTRUCTIONAL APPROACH

Next, I would like to talk about outcomes of this instructional approach.

18. How do you measure the success of the instructional approach to Algebra I?

Listen for:

- *Course grades or failure rates*
- *Student achievement measures*
- *Graduation or drop-out rates*
- *Other metrics*

19. Has the instructional approach been successful according to these measures? Why or why not?

20. Does the instructional approach appear to be more successful for some groups of students than others?

If yes:
Which students benefit the most? Why?

Which students benefit the least? Why?

FINAL THOUGHTS AND CONCLUSION

OK, please take a step back to provide some key take-away thoughts from this interview today.

21. What do you think are the key components—the active ingredients—of a successful instructional program that promotes both conceptual understanding and procedural fluency in Algebra I?

22. Do you have anything else that you would like to add before we conclude this interview?

Those are all the questions I have. Thank you for your time and for participating in this project.

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PROMOTING STUDENT SUCCESS IN ALGEBRA I

Instructional Practices Topical Area

Teacher Interview

(with a teacher whose classroom site visitors observed)

Name:	**Title:**
School:	**District:**
State:	
Interviewed by:	**Date:**

INTRODUCTION AND BACKGROUND

Good morning/afternoon. First of all, thank you so much for being here and for being willing to participate in this project for the U.S. Department of Education. Before we start, we would like to introduce ourselves, provide a little background on our work, and answer any questions you might have.

My name is [name], and this is [name of the other site visitor]. We are researchers from American Institutes for Research and Windwalker Corporation, organizations that conduct research and technical assistance in education. We are here today to interview you as part of a collaborative effort to provide program developers and administrators with information to promote student success in Algebra I. We are particularly interested in Algebra I because it's a gatekeeper course in that it's a prerequisite for subsequent high school mathematics and science courses considered essential for getting into college. So, it is an important stepping-stone for success in high school and college.

As part of this project for the U.S. Department of Education, we are speaking with teachers, math department leaders, school administrators, district staff, and students about the instructional practices employed that contribute to student success in Algebra I. With respect to teachers, we are interested in your perspectives on instructional practices in Algebra—how they were selected, how they are implemented, the challenges faced in implementing them, and the supports needed to implement them well. The data we collect will be used to develop technical assistance tools to help program developers and administrators implement similar programs to support struggling students.

I'll talk more about the topics of this interview, but for now, are there any questions about the project or why we are here?

DESCRIPTION OF INTERVIEW PROCEDURE AND CONFIDENTIALITY

Next, I'd like to say a few things about the process for this discussion. During our session today, I'll be asking you some questions, and [another site visitor] will be taking notes on what you are saying. [S/he] will not record your names. If you don't mind, I would also like to record our

conversation simply for note-taking purposes. No one outside of our project team will hear the recording; it will just be for our own reference. If you would like us to turn off the recorder at any point, just let me know. Would that be OK?

I want to assure you that we will treat the information you provide in a confidential manner. The recorded interview will be transcribed by a member of the project team, and only selected research staff will have access to the data, except as required by law. We will not use your name or attribute any quotes to you, instead, we will use pseudonyms in practice profiles. All efforts will be made to keep the description of the site general enough so that a reader would never be able to determine the true name or identity of the site or individuals at the site. Therefore, no one who reads the profiles of practice will know that the statements came from you.

I'd like to ask you to sign a consent form before we begin. It outlines some of the issues I've just mentioned with regard to anonymity and confidentiality. Please take a minute to read it and let me know if you have any questions.

Are there any questions before we get started?

***Notes to interviewer**:*
- Throughout the interview, possible probes are set aside following each general question. We would like to gather information relative to each of those probes. If, when the general question is asked, the respondent provides the information requested by the probes, you do not need to ask the probing questions. In addition to providing additional information, asking the probing questions may help move the interview pace or may prompt a less talkative respondent. Keep the tone conversational and comfortable.

- To the extent that this information can be retrieved from other data sources (e.g., school records) beforehand, document that information below prior to the interview. During the interview, prompt the Teacher to confirm its accuracy if his or her initial response does not do so.

BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

1. **Can you tell me a bit about your background, and what you currently teach here at [school name]?**

   Listen for:
   - *How long have you been a teacher?*
   - *How long have you worked for [district name] and at [school name] specifically?*
   - *How many classes are you currently teaching? Are they all Algebra I?*

IMPETUS FOR AND DEVELOPMENT OF INSTRUCTIONAL APPROACH

I understand that mathematics teachers at your school are using instructional practices that place a dual emphasis on building students' procedural fluency in and conceptual understanding of Algebra I.

By *procedural fluency*, we're referring to students' skill in carrying out procedures flexibly, accurately, efficiently, and appropriately. This includes knowing when to use a mathematics procedure (algorithm) and being able to use the procedure correctly.

By *conceptual understanding*, we're referring to students' comprehension of mathematical concepts, operations, and relations. This may include making connections between and among mathematic concepts, understanding the "why" behind mathematics procedures, knowing how to represent mathematics in different ways, and knowing how different representations can be useful in different contexts.

2. **What prompted the school to consider incorporating instructional practices with this dual emphasis?**

3. **Were you involved in the adoption of this instructional approach or the development/selection of resources to support these instructional practices? If so, do you feel like your contributions were valued and reflected in the current approach?**

IMPLEMENTATION OF INSTRUCTIONAL PRACTICES

I am interested in how this instructional approach is implemented.

Implementation Features and Context

4. **Can you describe, more specifically, what the implementation of the instructional approach is intended to look like in your Algebra I classroom?**

   Listen for:
   - *What specific instructional practices should teachers be using in their classrooms?*
   - *What, specifically, about these practices promotes conceptual understanding?*
   - *What, specifically, about these practices promotes procedural fluency?*

Now I'd like to ask a few questions about the class that I just observed.

Note to interviewer:
The next set of questions asks the teacher about his or her instructional practices. Please use the class you just observed as an anchor for this discussion. However, if the teacher indicates that the class was atypical of normal instruction, ask your questions in a more general manner.

5. **Did you feel like this class was fairly representative of what happens in your classroom or was there anything unusual today? Why or why not?**

6. **Which of the activities I observed promote procedural fluency and conceptual understanding of the content?**

7. **Describe the planning process for this lesson. Did you consciously plan to incorporate activities or instruction that would promote both procedural fluency and conceptual understanding?**

   Listen for:
   - *What resources did you use?*

8. **Other than those I observed, what other practices have you used to promote procedural fluency and conceptual understanding in Algebra I? How often and in what ways do you implement them?**

Now I'd like to ask a few questions about assignment you submitted.

Note to interviewer:
The next set of questions asks the teacher about assignments that he or she typically gives to students. Use the assignment submitted by the teacher to anchor your discussion.

9. **Do you feel like this assignment is fairly representative of the assignments you give to students? Why or why not?**

10. Which aspects of this assignment promote/assess procedural fluency and conceptual understanding of algebraic content?

11. Describe the planning process for this assignment. Did you plan to implement activities that promote both procedural fluency and conceptual understanding?

Listen for:

- *What resources did you use?*

12. Other than what I see in this assignment, what other features have you included in assignments to promote/assess procedural fluency and conceptual understanding?

Tools Supporting Implementation

Now, we would like to ask specific questions about any tools or resources that your school uses to support the implementation of the instructional approach. We understand that some were provided by the district and some were developed within your school. We will ask about both.

Note to interviewer:
We expect to receive a range of resources from schools. Some may have been developed/selected by the district and, potentially, modified by the school. These resources may provide guidance on sequencing/pacing, some may be resources to be used in designing instruction, and some may be assessments. The following series of questions address the different types of resources that the district provided. If you are not provided with a resource of a particular type, skip the question.

13. We understand the district provided teachers/schools with {insert sequencing/pacing resource}. In what ways do you use this?

For each sequencing/pacing resource, listen for:

- *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
- *Is this resource required or suggested for teachers?*
- *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

14. We understand the district provided teachers/schools with {insert instructional resource}. In what ways do you use this?

For each instructional resource, listen for:

- *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
- *Is this resource required or suggested for teachers?*
- *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

15. We understand the district provided teachers/schools with {insert assessment resource}. In what ways do you use this?

For each assessment resource, listen for:

- *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
- *Is this resource required or suggested for teachers?*
- *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

Note to interviewer:
We may be provided with some resources that were developed by the school but were not provided by the district. For each resource of this type, ask question 16.

16. We understand that your school developed this {insert resource}. In what ways do you use this resource?

For each resource, listen for:

- *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
- *Is this resource required or suggested for teachers?*
- *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

17. Can you describe any other resources that are available to you that we have not discussed here?

Listen for:

- *What was the intended purpose of the resource?*
- *How was this resource developed/selected?*
- *Are teachers or school leaders required to use the resource?*

18. What additional tools would be useful for increasing success in implementing instructional practices that promote both procedural fluency and conceptual understanding?

Teacher Professional Learning and Support

19. What types of professional learning opportunities do teachers receive to support their implementation of instructional practices that promote procedural fluency and conceptual understanding?

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- *What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- *Who provides the training, and who receives it?*
- *When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- *What are the training objectives?*
- *Is there anything that is not currently covered in the training that should be?*
- *What resources, financial or otherwise, are needed to support this training?*

20. Do you feel that you are adequately supported to implement instruction that promotes both procedural fluency and conceptual understanding?

Listen for:

- *In what ways are you supported?*
- *To whom do you turn for support?*
- *What additional resources/support would you like to receive?*
- *Who do you believe should be providing the additional support?*

Implementation Challenges

21. What are the major challenges you have face as a teacher in implementing instruction that promotes both procedural fluency and conceptual understanding? In what ways has your school addressed these challenges?

Listen for:

- *What strategies did and did not work and why?*

22. What are the major challenges your school has faced in implementing instruction that promotes both procedural fluency and conceptual understanding? In what ways has your school addressed these challenges?

Listen for:

- *What strategies did and did not work and why?*

23. What changes would you make to increase the success of implementing instruction that promotes both procedural fluency and conceptual understanding?

OUTCOMES OF THE INSTRUCTIONAL APPROACH

Next, I would like to talk about outcomes of this instructional approach.

24. Do you feel that your students leave your class with having developed procedural fluency and conceptual understanding in Algebra I?

Listen for:

- *Where are their strengths?*
- *What are their weaknesses?*

25. Do you think the implementation of the framework benefits certain students more than others? Why or why not?

26. Have you noticed any changes in student performance or preparation since the adoption of the curricular framework?

27. Have you experienced any other changes since this framework's adoption, such as increased collaboration within your department and/or across schools?

FINAL THOUGHTS AND CONCLUSION

28. Do you have anything else that you would like to add before we conclude this interview?

Those are all the questions I have. Thank you for your time and for participating in this project.

OMB Approval No.: 0000-0000

Expires: 00/00/0000

PROMOTING STUDENT SUCCESS IN ALGEBRA I

Instructional Practices Topical Area

Mathematics Department Chair/Teacher Leader Interview

Name:	**Title:**
School:	**District:**
State:	
Interviewed by:	**Date:**

INTRODUCTION AND BACKGROUND

Good morning/afternoon. First of all, thank you so much for being here and for being willing to participate in this project for the U.S. Department of Education. Before we start, we would like to introduce ourselves, provide a little background on our work, and answer any questions you might have.

My name is [name], and this is [name of the other site visitor]. We are researchers from American Institutes for Research and Windwalker Corporation, organizations that conduct research and technical assistance in education. We are here today to interview you as part of a collaborative effort to provide program developers and administrators with information to promote student success in Algebra I. We are particularly interested in Algebra I because it's a gatekeeper course in that it's a prerequisite for subsequent high school mathematics and science courses considered essential for getting into college. So, it is an important stepping-stone for success in high school and college.

As part of this project for the U.S. Department of Education, we are speaking with teachers, math department leaders, school administrators, district staff, and students about the instructional practices employed that contribute to student success in Algebra I. With respect to math departmental leaders, we are interested in your perspectives on instructional practices in Algebra—how they were selected, how they are implemented, the challenges faced in implementing them, and the supports needed to implement them well. The data we collect will be used to develop technical assistance tools to help program developers and administrators implement similar programs to support struggling students.

I'll talk more about the topics of this interview, but for now, are there any questions about the project or why we are here?

DESCRIPTION OF INTERVIEW PROCEDURE AND CONFIDENTIALITY

Next, I'd like to say a few things about the process for this discussion. During our session today, I'll be asking you some questions, and [another site visitor] will be taking notes on what you are saying. [S/he] will not record your name. If you don't mind, I would also like to record our conversation simply for note-taking purposes. No one outside of our project team will hear the recording; it will just be for our own reference. If you would like us to turn off the recorder at

any point, just let me know. Would that be OK?

I want to assure you that we will treat the information you provide in a confidential manner. The recorded interview will be transcribed by a member of the project team, and only selected research staff will have access to the data, except as required by law. We will not use your name or attribute any quotes to you, instead, we will use pseudonyms in practice profiles. All efforts will be made to keep the description of the site general enough so that a reader would never be able to determine the true name or identity of the site or individuals at the site. Therefore, no one who reads the profiles of practice will know that the statements came from you.

I'd like to ask you to sign a consent form before we begin. It outlines some of the issues I've just mentioned with regard to anonymity and confidentiality. Please take a minute to read it and let me know if you have any questions.

Are there any questions before we get started?

***Notes to interviewer**:*
- Throughout the interview, possible probes are set aside following each general question. We would like to gather information relative to each of those probes. If, when the general question is asked, the respondent provides the information requested by the probes, you do not need to ask the probing questions. In addition to providing additional information, asking the probing questions may help move the interview pace or may prompt a less talkative respondent. Keep the tone conversational and comfortable.

- To the extent that this information can be retrieved from other data sources (e.g., school records) beforehand, document that information below prior to the interview. During the interview, prompt the Mathematics Departmental Leader to confirm its accuracy if his or her initial response does not do so.

BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

1. **Can you tell me a bit about your background and how you came to serve as the math department chair/teacher leader at [school name]?**

   Listen for:
   - *How long have you served as the math department chair/teacher leader at [school name]?*
   - *How long have you worked for [district name]?*

2. **Tell me a bit about your role. In what ways do you work with teachers on their instruction?**

IMPETUS FOR AND DEVELOPMENT OF INSTRUCTIONAL APPROACH

I understand that mathematics teachers at your school are using instructional practices that place a dual emphasis on building students' procedural fluency in and conceptual understanding of Algebra I.

By *procedural fluency*, we're referring to students' skill in carrying out procedures flexibly, accurately, efficiently, and appropriately. This includes knowing when to use a mathematics procedure (algorithm) and being able to use the procedure correctly.

By *conceptual understanding*, we're referring to students' comprehension of mathematical concepts, operations, and relations. This may include making connections between and among mathematic concepts, understanding the "why" behind mathematics procedures, knowing how to represent mathematics in different ways, and knowing how different representations can be useful in different contexts.

3. **What prompted the school to consider incorporating instructional practices with this dual emphasis?**

   Listen for:
   - *Were such instructional practices adopted as part of a larger district initiative? If so, what grade levels/mathematics courses did the initiative target?*
   - *What was the rationale for integrating these types of instructional practices and why?*

4. **Were you involved in the adoption of this instructional approach or the development/selection of resources to support these instructional practices? If so, do you feel like your contributions were valued and reflected in the current approach?**

5. **Which other school and/or district staff members were involved in the decision to adopt this new approach to Algebra I/mathematics instruction? What roles did they play?**

6. **We understand that your district and/or school provides tools to support the implementation of these instructional practices in Algebra I. [If necessary, explain: tools for sequencing/pacing, for assessing students, etc.] What was the process for developing/selecting these tools?**

   Listen for:
   - *Who was involved and what were their roles?*
   - *What features of these resources were important in the selection/development process?*

IMPLEMENTATION OF INSTRUCTIONAL PRACTICES

Now that we have a better sense of how the instructional approach was developed, I am interested in how it is implemented.

Implementation Features and Context

7. **Can you describe, more specifically, what the implementation of instruction that promotes procedural fluency and conceptual understanding is intended to look like in Algebra I classrooms within your school?**

   Listen for:
   - *What specific instructional practices should teachers be using in their classrooms?*
   - *What, specifically, about these practices promotes conceptual understanding?*
   - *What, specifically, about these practices promotes procedural fluency?*

Tools Supporting Implementation

Now, we would like to ask specific questions about any tools or resources that your school uses to support the implementation of the instructional approach. We understand that some were provided by the district and some were developed within your school. We will ask about both.

***Note to interviewer**:*

We expect to receive a range of resources from schools prior to the interview. Some may have been developed/selected by the district and, potentially, modified by the school. These resources may provide guidance on sequencing/pacing, some may be resources to be used in designing instruction, some may be assessments, and some may be designed for teacher leaders to use with teachers. The following series of questions address the different types of resources that the district provided. If you are not provided with a resource of a particular type, skip the question.

8. **We understand the district provided teachers/schools with {insert sequencing/pacing resource}. In what ways do teachers in your school use this?**

   For each sequencing/pacing resource, listen for:
   - *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
   - *Is this resource required or suggested for teachers?*
   - *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

9. **We understand the district provided teachers/schools with {insert instructional resource}. In what ways do teachers in your school use this?**

   For each instructional resource, listen for:
   - *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
   - *Is this resource required or suggested for teachers?*
   - *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

10. **We understand the district provided teachers/schools with {insert assessment resource}. In what ways do teachers in your school use this?**

    For each assessment resource, listen for:
    - *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
    - *Is this resource required or suggested for teachers?*
    - *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*

Note to interviewer:

We may be provided with some resources that were developed by the school but were not provided by the district. For each resource of this type, ask the following questions.

11. We understand that your school developed this {insert resource}. In what ways do you or teachers in your school use this resource?

Listen for:

- *Who was involved and what were their roles?*
- *What features of were important in the selection/development process?*

12. Can you describe any other tools that are available to teachers or school leaders that we have not discussed here?

Listen for:

- *What was the intended purpose of the resource?*
- *Are teachers or school leaders required to use the resource?*
- *What resources, financial or otherwise, are needed to provide these resources?*

13. What additional tools would be useful to increasing success in implementing instructional practices that promote both procedural fluency and conceptual understanding?

Teacher and School Leaders Support

14. What types of professional learning opportunities do teachers receive to support their implementation of instructional practices that promote procedural fluency and conceptual understanding?

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- *What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- *Who provides the training, and who receives it?*
- *When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- *What are the training objectives?*
- *Is there anything that is not currently covered in the training that should be?*
- *What resources, financial or otherwise, are needed to support this training?*

15. In what ways do you, as the math department chair/teacher leader, support teachers in implementing the instructional approach to Algebra I?

Listen for:

- *How frequently do you meet with them individually or collectively? For what purpose?*
- *To what extent do you monitor teachers' progress in implementing instructional practices that promote procedural fluency and conceptual understanding?*
- *Do you conduct classroom observations? Do you conduct walkthroughs? If so, how often? Do you provide feedback to teachers and/or school leaders?*

16. Do you feel that you receive adequate support to facilitate the implementation of the instructional approach?

Listen for:

- *Do you receive any specific training on how to support and monitor the instructional approach?*
- *In what ways are you supported, and who provides the support?*
- *What additional support would you like to receive?*

Implementation Challenges

17. What are the major challenges that teachers face in implementing instructional practices that promote procedural fluency and conceptual understanding in Algebra I? How do you as a math department chair help them address these challenges?

Listen for:

- *What strategies did and did not work and why?*

18. What are the major challenges that your school has faced in supporting the implementation of instructional practices that promote procedural fluency and conceptual understanding in Algebra I? In what ways has your school addressed these challenges?

Listen for:

- *What strategies did and did not work and why?*

19. What changes would you make to increase the success of implementing instructional practices that promote procedural fluency and conceptual understanding in Algebra I?

OUTCOMES OF THE INSTRUCTIONAL APPROACH

Next, I would like to talk about outcomes of this instructional approach.

20. How does your school measure the success of the instructional approach to Algebra I?

Listen for:

- *Course grades or failure rates*
- *Student achievement measures*
- *Graduation or drop-out rates*
- *Other metrics*

21. Has the instructional approach been successful according to these measures? Why or why not?

22. Does the instructional approach appear to be more successful for some groups of students than others?

If yes:

Which students benefit the most? Why?

Which students benefit the least? Why?

FINAL THOUGHTS AND CONCLUSION

OK, please take a step back to provide some key take-away thoughts from this interview today.

23. What do you think are the key components—the active ingredients—of a successful instructional program that promotes both conceptual understanding and procedural fluency in Algebra I?

24. Do you have anything else that you would like to add before we conclude this interview?

Those are all the questions I have. Thank you for your time and for participating in this project.

OMB Approval No.: 0000-0000

Expires: 00/00/0000

PROMOTING STUDENT SUCCESS IN ALGEBRA I

Instructional Practices Topical Area

Mathematics Instructional Coach Interview

Name:	**Title:**
School:	**District:**
State:	
Interviewed by:	**Date:**

INTRODUCTION AND BACKGROUND

Good morning/afternoon. First of all, thank you so much for being here and for being willing to participate in this project for the U.S. Department of Education. Before we start, we would like to introduce ourselves, provide a little background on our work, and answer any questions you might have.

My name is [name], and this is [name of the other site visitor]. We are researchers from American Institutes for Research and Windwalker Corporation, organizations that conduct research and technical assistance in education. We are here today to interview you as part of a collaborative effort to provide program developers and administrators with information to promote student success in Algebra I. We are particularly interested in Algebra I because it's a gatekeeper course in that it's a prerequisite for subsequent high school mathematics and science courses considered essential for getting into college. So, it is an important stepping-stone for success in high school and college.

As part of this project for the U.S. Department of Education, we are speaking with teachers, math department leaders, school administrators, district staff, and students about the instructional practices employed that contribute to student success in Algebra I. With respect to coaches, we are interested in your perspectives on instructional practices in Algebra—how they were selected, how they are implemented, the challenges faced in implementing them, and the supports needed to implement them well. The data we collect will be used to develop technical assistance tools to help program developers and administrators implement similar programs to support struggling students.

I'll talk more about the topics of this interview, but for now, are there any questions about the project or why we are here?

DESCRIPTION OF INTERVIEW PROCEDURE AND CONFIDENTIALITY

Next, I'd like to say a few things about the process for this discussion. During our session today, I'll be asking you some questions, and [another site visitor] will be taking notes on what you are saying. [S/he] will not record your names. If you don't mind, I would also like to record our conversation simply for note-taking purposes. No one outside of our project team will hear the

recording; it will just be for our own reference. If you would like us to turn off the recorder at any point, just let me know. Would that be OK?

I want to assure you that we will treat the information you provide in a confidential manner. The recorded interview will be transcribed by a member of the project team, and only selected research staff will have access to the data, except as required by law. We will not use your name or attribute any quotes to you, instead, we will use pseudonyms in practice profiles. All efforts will be made to keep the description of the site general enough so that a reader would never be able to determine the true name or identity of the site or individuals at the site. Therefore, no one who reads the profiles of practice will know that the statements came from you.

I'd like to ask you to sign a consent form before we begin. It outlines some of the issues I've just mentioned with regard to anonymity and confidentiality. Please take a minute to read it and let me know if you have any questions.

Are there any questions before we get started?

Notes to interviewer:
- Throughout the interview, possible probes are set aside following each general question. We would like to gather information relative to each of those probes. If, when the general question is asked, the respondent provides the information requested by the probes, you do not need to ask the probing questions. In addition to providing additional information, asking the probing questions may help move the interview pace or may prompt a less talkative respondent. Keep the tone conversational and comfortable.

- To the extent that this information can be retrieved from other data sources (e.g., school records) beforehand, document that information below prior to the interview. During the interview, prompt the Mathematics Coach to confirm its accuracy if his or her initial response does not do so.

BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

1. **Can you tell me a bit about your background and how you came to serve as the math coach at [school name]?**

   Listen for:
   - *How long have you served as the math coach at [school name]?*
   - *How long have you worked for [district name]?*

2. **Tell me a bit about your role. In what ways do you work with teachers on their instruction?**

IMPETUS FOR AND DEVELOPMENT OF INSTRUCTIONAL APPROACH

I understand that mathematics teachers at your school are using instructional practices that place a dual emphasis on building students' procedural fluency in and conceptual understanding of Algebra I.

By *procedural fluency*, we're referring to students' skill in carrying out procedures flexibly, accurately, efficiently, and appropriately. This includes knowing when to use a mathematics procedure (algorithm) and being able to use the procedure correctly.

By *conceptual understanding*, we're referring to students' comprehension of mathematical concepts, operations, and relations. This may include making connections between and among mathematic concepts, understanding the "why" behind mathematics procedures, knowing how to represent mathematics in different ways, and knowing how different representations can be useful in different contexts.

3. **Do you know what prompted the school to consider incorporating instructional practices with this dual emphasis?**

   Listen for:
   - *Were such instructional practices adopted as part of a larger district initiative? If so, what grade-levels/ mathematics courses did the initiative target?*
   - *What was the rationale for integrating these types of instructional practices and why?*

4. **Were you involved in the development of these instructional practices? Did you help develop/select any instructional tools for this approach? If so, what was your role and do you feel that your contributions were valued and reflected in the current approach?**

IMPLEMENTATION OF INSTRUCTIONAL PRACTICES

Now that we have a better sense of how the instructional approach was developed, I am interested in how it is implemented.

Implementation Features and Context

5. **Can you describe, more specifically, what the implementation of these instruction practices should look like in Algebra I classrooms within your school?**

   Listen for:
   - *What specific instructional practices should teachers be using in their classrooms?*
   - *What, specifically, about these practices promotes conceptual understanding?*
   - *What, specifically, about these practices promotes procedural fluency?*

Tools Supporting Implementation

Now, we would like to ask specific questions about any tools or resources that your school uses to support the implementation of the instructional approach. We understand that some were provided by the district and some were developed within your school. We will ask about both.

Note to interviewer:
We expect to receive a range of resources from schools. Some may have been developed/selected by the district and, potentially, modified by the school. These resources may provide guidance on sequencing/pacing, some may be resources to be used in designing instruction, some may be assessments, and some may be designed for teacher leaders to use with teachers. The following series of questions address the different types of resources that the district provided. If you are not provided with a resource of a particular type, skip the question.

6. **We understand the district provided teachers/schools with {insert sequencing/pacing resource}. In what ways do teachers in your school use this?**

   For each sequencing/pacing resource, listen for:
   - *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
   - *Is this resource required or suggested for teachers?*

- *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*
- *If modified, what was the process for modification? In what way(s) were you involved?*

7. **We understand the district provided teachers/schools with {insert instructional resource}. In what ways do teachers in your school use this?**

   For each instructional resource, listen for:
   - *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
   - *Is this resource required or suggested for teachers?*
   - *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*
   - *If modified, what was the process for modification? In what way(s) were you involved?*

8. **We understand the district provided teachers/schools with {insert assessment resource}. In what ways do teachers in your school use this?**

   For each assessment resource, listen for:
   - *How is this resource intended to support the use of instructional practices that promote students' conceptual understanding and procedural fluency in Algebra I?*
   - *Is this resource required or suggested for teachers?*
   - *If required, are teachers expected to implement it as written, or are they to use it only as a guide?*
   - *If modified, what was the process for modification? In what way(s) were you involved?*

Note to interviewer:

We may be provided with some resources that were developed by the school but were not provided by the district. For each resource of this type, ask the following question.

9. **We understand that [school name] developed this {insert resource}. In what ways do you or teachers in your school use this resource?**

   Listen for:
   - *Who was involved and what were their roles?*
   - *What features were important in the selection/development process?*

10. **Can you describe any other tools that are available to you or to teachers in [school name] that we have not discussed here?**

Listen for:

- *What was the intended purpose of the resource?*
- *Are you or teachers in [school name] required to use the resource?*
- *How was the resource developed/selected?*
- *What resources, financial or otherwise, are needed to provide these resources?*

11. What additional tools would be useful to increasing the success in implementing instructional practices that promote both procedural fluency and conceptual understanding?

Teacher and School Leaders Support

12. What types of professional learning opportunities do teachers receive to support their implementation of instructional practices that promote procedural fluency and conceptual understanding?

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- *What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- *Who provides the training, and who receives it?*
- *When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- *What are the training objectives?*
- *Is there anything that is not currently covered in the training that should be?*
- *What resources, financial or otherwise, are needed to support this training?*

13. In what ways do you, as the math coach, support teachers in implementing the instructional approach to Algebra I?

Listen for:

- *How frequently do you meet with them individually or collectively? For what purpose?*
- *To what extent do you monitor teachers' progress in implementing instructional practices that promote procedural fluency and conceptual understanding?*
- *Do you conduct classroom observations? Do you conduct walkthroughs? If so, how often? Do you provide feedback to teachers and/or school leaders?*

14. Do you feel that you receive adequate support to facilitate the implementation of the instructional approach?

Listen for:

- *Do you receive any specific training on how to support and monitor the instructional approach?*
- *In what ways are you supported, and who provides the support?*
- *What additional support would you like to receive?*

Implementation Challenges

15. What are the major challenges that teachers face in implementing instructional practices that promote procedural fluency and conceptual understanding in Algebra I? How do you as an instructional coach help them address these challenges?

Listen for:

- *What strategies did and did not work and why?*

16. What are the major challenges that [SCHOOL NAME] has faced in supporting the implementation of instructional practices that promote procedural fluency and conceptual understanding in Algebra I? How do you as an instructional coach help [school name] address these challenges?

Listen for:

- *What strategies did and did not work and why?*

17. What changes would you make to increase the success of implementing instructional practices that promote procedural fluency and conceptual understanding in Algebra I?

OUTCOMES OF THE INSTRUCTIONAL APPROACH

Next, I would like to talk about outcomes of this instructional approach.

18. How does your school measure the success of the instructional approach to Algebra I ?

Listen for:

- *Course grades or failure rates*
- *Student achievement measures*
- *Graduation or drop-out rates*
- *Other metrics*

19. Has the instructional approach been successful according to these measures? Why or why not?

20. Does the instructional approach appear to be more successful for some groups of students than others?

If yes:
Which students benefit the most? Why?

Which students benefit the least? Why?

FINAL THOUGHTS AND CONCLUSION

OK, please take a step back to provide some key take-away thoughts from this interview today.

21. What do you think are the key components—the active ingredients—of a successful instructional program that promotes both conceptual understanding and procedural fluency in Algebra I?

22. Do you have anything else that you would like to add before we conclude this interview?

Those are all the questions I have. Thank you for your time and for participating in this project.