Inquiry: Data-Based Decision Making for Student Success

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Time Frame 60 minutes

Essential Question(s)

- What is the role of inquiry in improving learner engagement, empowerment, and achievement?
- What factors contribute to the successful implementation of data-based decision-making in schools?

Summary

This professional learning activity asks participants to reflect on the importance of the inquiry cycle. Participants will examine a school data case study, take on different lenses for interpreting data, and explore what research tells us about the inquiry cycle and how it can support schools in making decisions based on data.

Learning Goals

- Establish a definition of the inquiry process.
- Identify the steps of the inquiry process.
- Explore the conditions and methods for successfully using data-based inquiry to solve problems in schools.
- Examine characteristics of data literacy.

Attachments

- Case Study Document—Inquiry.pdf
- Mandinach Data Literacy Article 2016—Inquiry.pdf
- Presentation Slides—Inquiry.pptx

Materials

- Presentation Slides - Inquiry
- Chart paper and markers
- Paper and pens/pencils
- Case Study Document - Inquiry
- "What is Inquiry?" Infographic
- Jigsaw Google Slides - Inquiry
- Mandinach Data Literacy Article 2016

Engage

Display **slide 2** with samples of the definition of inquiry from a random internet search. Ask the group about commonalities they see in the definitions.

Facilitator's Note: Discussion

Point out that definitions differ slightly depending on the discipline source they come from. Participants should notice a commonality is questions and finding the answers to questions. Some disciplines differentiate between inquiry and research. The last bullet reflects this with the word systematic. Our educational definition comes from a research perspective that focuses on process.

Provide this statement on **slide 3**: "Inquiry in educational settings is a systematic process used for improving student outcomes such as achievement, engagement, and empowerment."

Assess the group's current understanding of inquiry using the Stand Up, Sit Down strategy (Instructions on **slides 4–6**)

1. Ask participants to individually write a list of 3–5 things that they think are the most important characteristics or aspects of using the inquiry process to improve student outcomes.
2. Have everybody stand up. Go around the room and ask each person to read something on their list.
3. Have people check off anything on their list that is the same (or similar) to what has been given. Once everything on their list is checked off, they sit down.
4. Create an anchor chart (chart paper or shared document) by recording bullet points for each idea given—no discussion is needed until all ideas are recorded.
5. As soon as everybody is seated, go over the bullet points with the group.

The list might need some consolidation, but otherwise, leave it as it is. Tell the group that this list represents what we collectively know about inquiry. Explain that this is a formative assessment strategy.

(Note: If there is a large number of people in the group (more than 25–30), you can consider doing this as a group strategy to narrow down the number of ideas. Have groups generate their list of 3–5 things and then have groups cross off their lists as ideas are read.)

Go over the essential questions and objectives on **slides 7–8**.

Explore

Facilitator's Note: Reading the Case Study Document

On pages 2 and 3 of the case study document, shaded lines show the state data, and white lines show the school's data.

Provide a short case study in which a math department addresses a problem using inquiry in a PLC setting. The attached **Case Study Document** includes demographic data, 8th-grade math scores, 4th-grade math scores, and questions to guide data discussion. Display **slides 9 and 10**. Have participants work in groups of 4–5 and have each member look at the data from a different lens:

- Principal: Look for trends in cohort performance over time and compare them to state averages. Examine disparities between demographic groups. Consider how the data informs the school's educational goals.
- Counselor: Examine this data to determine what it tells us about the student body's well-being. Identify students/groups that may need more support.
- Math Department: Analyze math scores across grades.
- ELL Teacher: Consider if English proficiency has a correlation with math performance.
- Grade-level teacher: Consider how the data may inform curriculum or teaching strategy adjustments.

After each person looks at the data from their assigned lens, have members share what they see with their group.

- What are some patterns you see in this data set?
- What question(s) do these data bring up?

Then have groups create a summary of what they noticed and the questions they have.

Explain

Facilitator's Note: Tech Integration

Make a copy for your group of this Jigsaw Google Slides Deck. Be sure to have a plan for how to share this with your participants so that they can get into the document and participate in this activity. For example, you can add a short url to your slides deck, email a link, or provide a link in a shared agenda for the day.

Display **slide 11** and point to the beginning of the process. Note that what they just did with the ABC School data is just the first part of the process, which is to look at data, ask questions, and identify gaps. We haven't truly stepped into reasons why or ideas about changes to make yet.

Then have the participants navigate to K20's "What is Inquiry?" infographic, which is linked on **slide 12**. Scroll to the section titled "The Inquiry Cycle" and discuss the steps of the inquiry cycle. Relate them to the basic process shown in the previous slide. Discuss how the conversations we've been having about ABC School's data gets us close to articulating a goal, and how some of this data could be selected as an indicator for changes we want to make and if they are working.

Move to **slide 13.** At this time inform the group that we will jigsaw the reading of the remainder of the infographic. Count participants off into 8 groups (or four if you have a small session). Then display **slide 14** so they know which component their group will read.

After participants have formed groups and completed reading their component on the infographic, have them talk briefly about their component at their table and how it might look in action with the ABC School case study.

Display **slide 15**, and provide time for participants to navigate to the linked **Jigsaw Google Slides** deck and locate the slide for their component. Have them create a graphic representation of their understanding of their assigned component and how they would use it in the ABC School case.

Each group presents the slide they created.

Extend

Hand out to participants the **Mandinach Data Literacy** article, "Every Teacher Should Succeed with Data Literacy" by Mandinach and Gummer (2016). Then bring up **slide 16.**

As participants read, ask them to mark pieces from the article they find surprising, interesting, or troubling (S-I-T) in relation to these three questions:

- How do we define data literacy?
- What skills are necessary for data literacy?
- Why is data literacy important?

Once everyone has had time to read and mark, have table groups share their S-I-T with each other and then discuss the answers to the three questions.

Move to **slide 17** and have groups reflect on the ABC case and answer the two questions on the slide:

- What further types of data would be needed to answer your question(s)?
- What actions could be taken to target problems identified in this data set?

Have them share what they discussed with the whole group.

Evaluate

Facilitator's Note: Tech Integration

You will want to set up a free Mentimeter account before beginning this professional learning session. Create the presentation for a definition of inquiry, then add the QR code to slide 19 before presenting. Here is information on obtaining the Mentimeter QR code.

Display **slide 18**. Return to the Characteristics of Inquiry anchor chart created in the Engage portion of this session. Go through each idea on the chart and have participants identify which component from the inquiry infographic affirms it.

Ask participants if there are any big ideas or if there's anything that needs to be added.

Ask if anything on this list doesn't seem to fit anymore and needs to be removed.

Next, display **slide 19**. Use the Gist strategy to have groups work together to create a short (no more than 28 words) definition of inquiry. Add this definition to a Mentimeter or share it out loud with the group.

Then share the official K20 definition of inquiry on **slide 20** and note similarities between this one and those shared by participants.

Finally, have participants write a two-minute paper on the prompt on **slide 21**: "How can you use what you have learned about inquiry and data-driven decision-making in your own school or classroom?"

Research Rationale

The inquiry cycle is an important part of any educational setting. The result of this process is improvement in learner engagement, empowerment, and achievement (Broderick & Hong, 2011). By ensuring that teachers have supportive systems with adequate resources to develop and sustain the inquiry process, schools engender a sense of trust, collaboration among teachers and leaders, and shared responsibility for school improvement.

Resources

- Broderick, J., & Hong, S. (2011). Introducing the cycle of inquiry system: A reflective inquiry practice for early childhood teacher development. *Early Childhood Research & Practice, 13*(2).
- Jakobsson, M. (n.d.). Share QR code. Mentimeter. https://help.mentimeter.com/en/articles/422271-share-qr-code
- K20 Center. (2023). Gist. Strategies. https://learn.k20center.ou.edu/strategy/3289
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- K20 Center. (2021). Stand up, sit down. Strategies. https://learn.k20center.ou.edu/strategy/1771
- K20 Center. (2020). Two-minute paper. Strategies. https://learn.k20center.ou.edu/strategy/152