

# Planning for High-Quality Evaluation of Professional Learning

## Session 2: Understanding Data in the Evaluation Planning Process



Candice Bocala, Ed.D.  
Katrina Bledsoe, Ph.D.  
November 16, 2017



# Meet today's presenters



Candice Bocala  
REL Northeast & Islands



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REL Northeast & Islands



# Professional Learning & Development Alliance

The purpose of this Alliance is to support district leaders from the northeast region to make evidence-based decisions regarding the selection, adaptation, scale up, and/or discontinuation of professional development programs and interventions.



# Webinar sequence

This webinar is the second of three in a series about planning for high-quality evaluations of professional learning.



**Session 1:**  
Establishing the  
Purpose for  
Evaluation  
**October 11, 2017**



**Session 2:**  
Understanding Data  
in the Evaluation  
Planning Process  
**November 16, 2017**



**Session 3:** Using  
Evaluation  
Information and  
Working with  
Evaluators  
**January 25, 2018**



# Agenda

Introduction & overview of evaluation

Using evaluation questions to determine study design

Understanding data collection

Improving data quality

Conclusion & next steps

# Today's goals: Participants will...

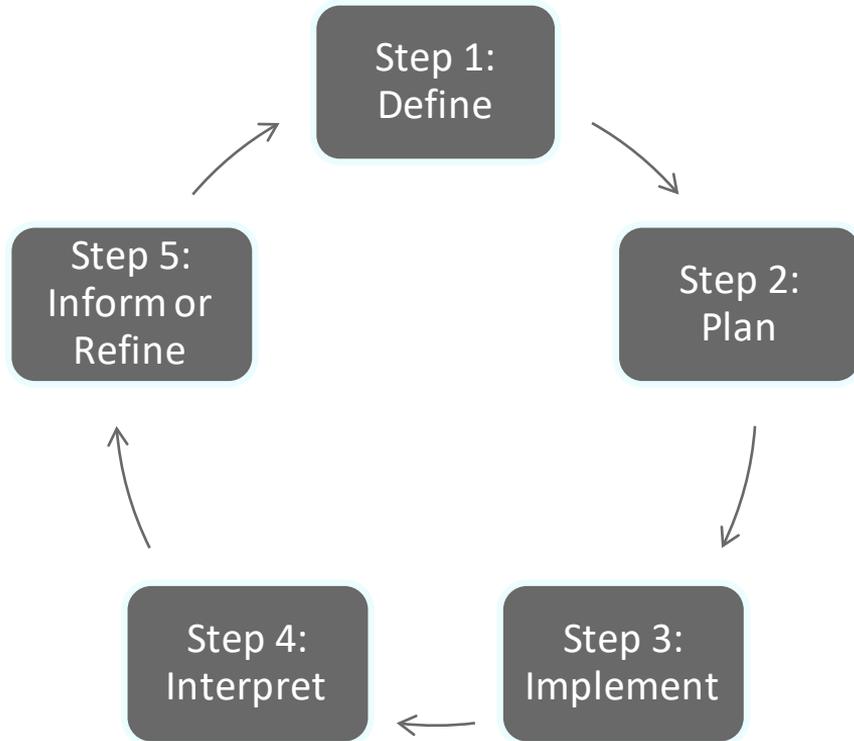
- Review the connection between the purposes for evaluation and evaluation questions
- Describe the connection between evaluation questions and the design of the study needed to answer them
- Understand various data collection methods and their appropriate uses
- Explore common ways to enhance data quality and conclusions drawn from evaluation



# REVIEW OF SESSION 1

Step 1: Defining the Program

# A continuous evaluation model



## Step 1: Define

What is the purpose of the evaluation and the underlying logic of the program?

## Step 2: Plan

What questions should the evaluation answer, and using what design?

## Step 3: Implement

How should data be collected and analyzed?

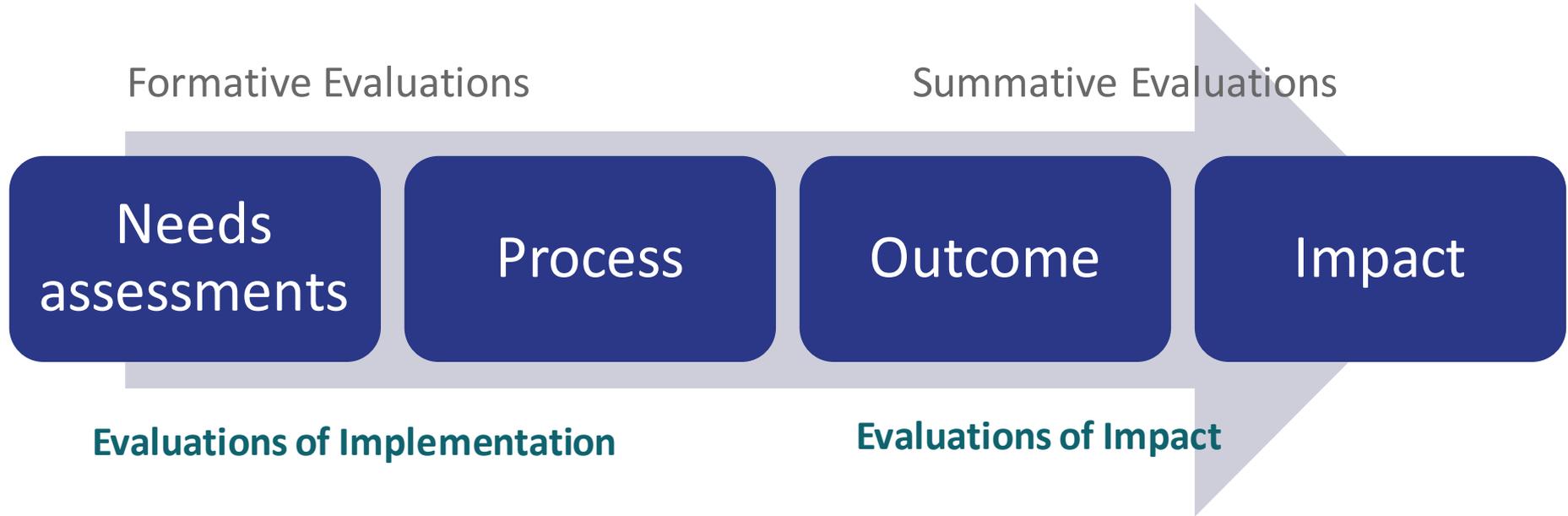
## Step 4: Interpret

How should results be used and communicated?

## Step 5: Inform OR Refine

What decisions can be made about the program?

# General types of evaluation



# Example professional learning program

## The “STEM Partnership” program

- Teachers receive professional development from universities in STEM research laboratories and support with inquiry-based lesson planning.
- University faculty and students participate as mentors throughout the year for local middle and high school students.
- Teachers and university participants form a professional learning community to discuss STEM education throughout the year.
- Students gain access to university research facilities, local STEM learning opportunities, and new school programming.



**Problem Statement:** Students in the district do not have enough access to high-quality learning experiences in science, technology, engineering, and mathematics (STEM) as they transition from middle to high school. Students of color and female students tend to be under-represented in STEM fields in higher education.

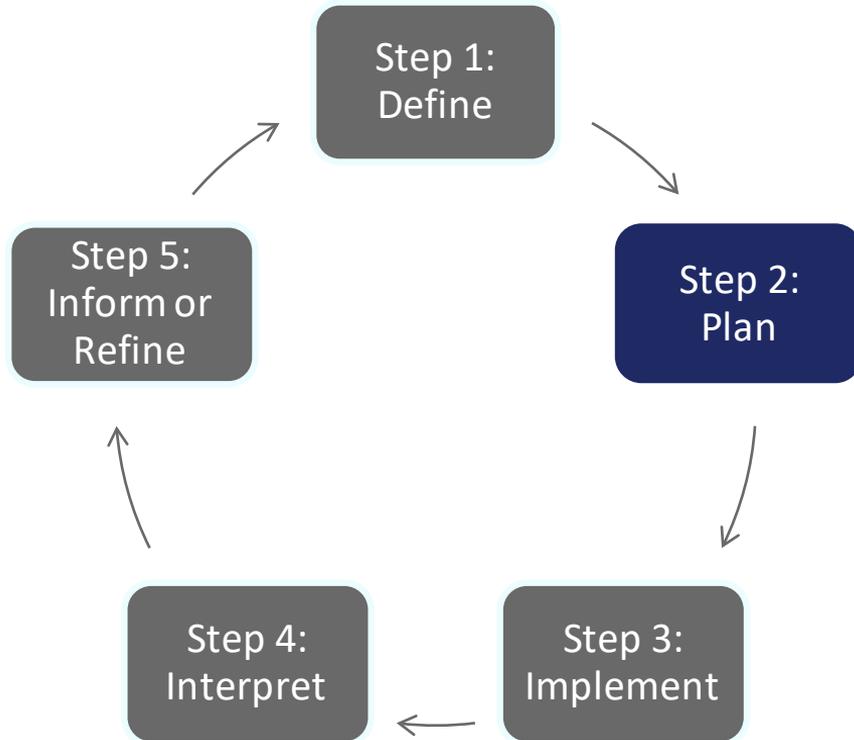
Resources	Strategies and activities	Outputs	Short-term outcomes	Long-term outcomes	Impacts
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**Assumptions:** 1) The professional learning is of high quality; 2) The district and university leaders provide support for the STEM Partnership; 3) Teachers can apply what they have learned into inquiry-based curricula; 4) The PLCs are productive spaces for educator learning; 5) Local businesses and the community are open to hosting students during field trips.

## **STEP 2: PLAN**

Using Evaluation Questions to Determine Study Design

# A continuous evaluation model



## Step 1: Define

What is the purpose of the evaluation and the underlying logic of the program?

## Step 2: Plan

What questions should the evaluation answer, and using what design?

## Step 3: Implement

How should data be collected and analyzed?

## Step 4: Interpret

How should results be used and communicated?

## Step 5: Inform OR Refine

What decisions can be made about the program?

## Step 2: Plan

### Guiding questions:

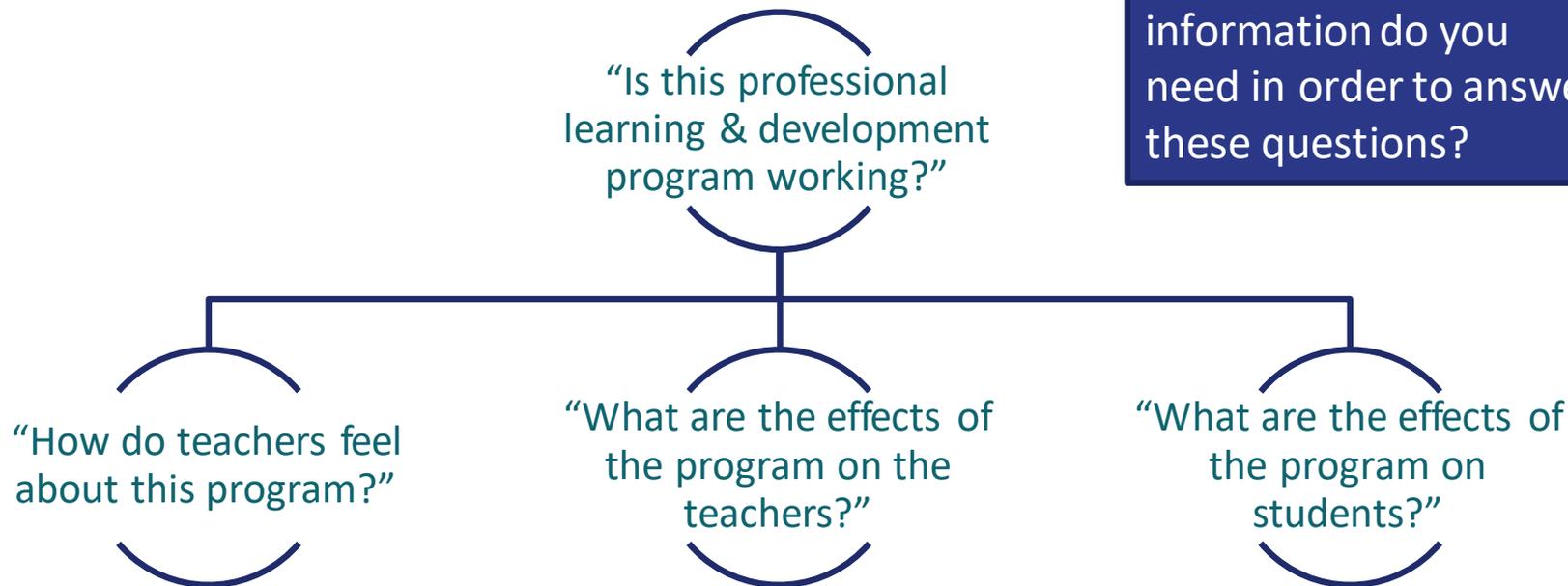
- What questions should this evaluation answer?
  - Are these questions formative or summative?
- What design is most appropriate to answer these questions?
  - Will it be exploratory? Descriptive? Causal?

The image shows a screenshot of a document titled "REL Evaluation Planning Template - Section 2". The document is divided into two columns and two rows. The top row is a header with "Guiding Questions" on the left and "Notes or Next Steps" on the right. The second row is titled "STEP 2: PLAN". The left column contains two guiding questions, each with a bullet point asking for formative or summative classification. The right column is empty for notes.

Guiding Questions	Notes or Next Steps
<b>STEP 2: PLAN</b>	
What questions should this evaluation answer? <ul style="list-style-type: none"><li>• Are these questions formative or summative?</li></ul>	
What design is most appropriate to answer these questions? <ul style="list-style-type: none"><li>• Will it be exploratory? Descriptive? Causal?</li></ul>	

# Understanding evaluation questions

Chat: What kind of information do you need in order to answer these questions?



# Understanding evaluation questions

“Is this PLD  
program working?”



Use the logic model



Consider formative &  
summative questions



# Common types of evaluation questions

## Formative questions:

- Asked while program is operating
- For program improvement or midcourse correction

## Summative questions:

- Asked at completion or after the program
- Focused on results and outcomes



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Formative question: How did teachers experience the STEM PLCs?

**Assumptions:** 1) The professional learning is of high quality; 2) The district and university leaders provide support for the STEM Partnership; 3) Teachers can apply what they have learned into inquiry-based curricula; 4) The PLCs are productive spaces for educator learning; 5) Local businesses and the community are open to hosting students during field trips.

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Summative question: How did the program affect students' learning outcomes in STEM?

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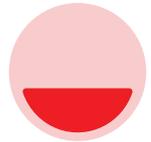
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**Chat: Any other summative questions?**

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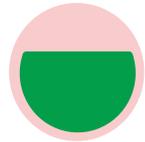
# Understanding possible study designs



## Exploratory

Discovery of insights, ideas

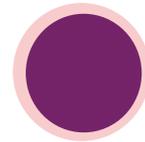
*Example question:  
What do teachers learn through this PLD?*



## Descriptive

Describes characteristics or relationships

*Example question:  
How does the PLD relate to teacher retention?*



## Causal

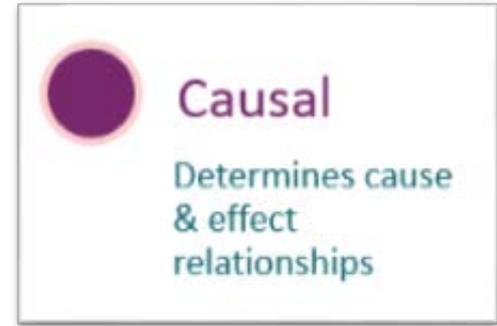
Determines cause & effect relationships

*Example question:  
Does participation in the PLD increase student achievement?*



# More about casual studies....

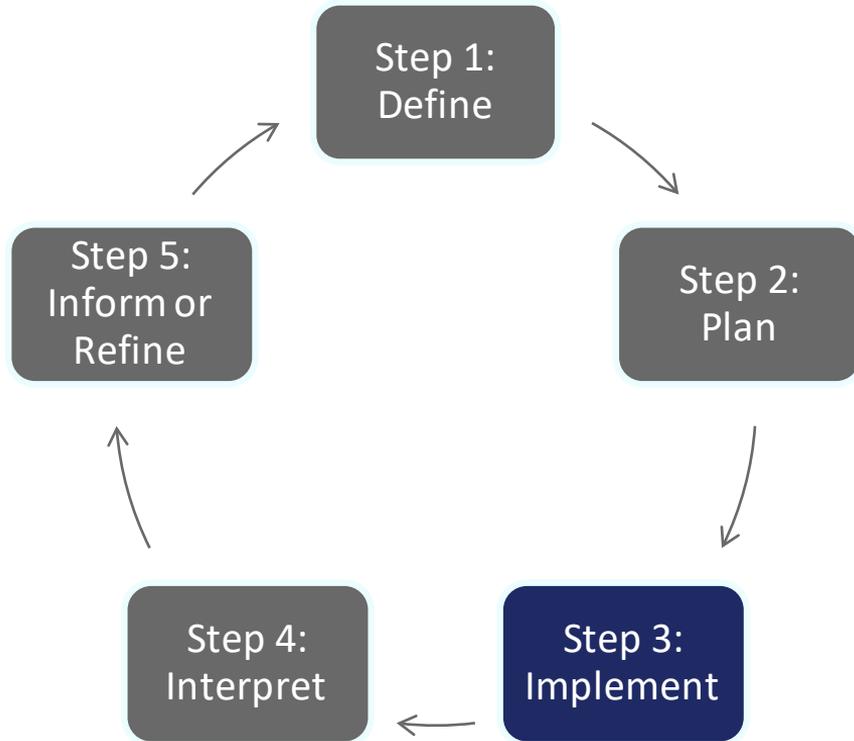
- These studies try to eliminate possible alternative explanations for an effect
- “Experimental”
  - Randomly assigning groups to a “treatment” and “control” group
- “Quasi-experimental”
  - Finding a group that matches the characteristics of the treatment group to serve as a control



# **STEP 3: IMPLEMENT**

Understanding Data Collection

# A continuous evaluation model



## Step 1: Define

What is the purpose of the evaluation and the underlying logic of the program?

## Step 2: Plan

What questions should the evaluation answer, and using what design?

## Step 3: Implement

How should data be collected and analyzed?

## Step 4: Interpret

How should results be used and communicated?

## Step 5: Inform OR Refine

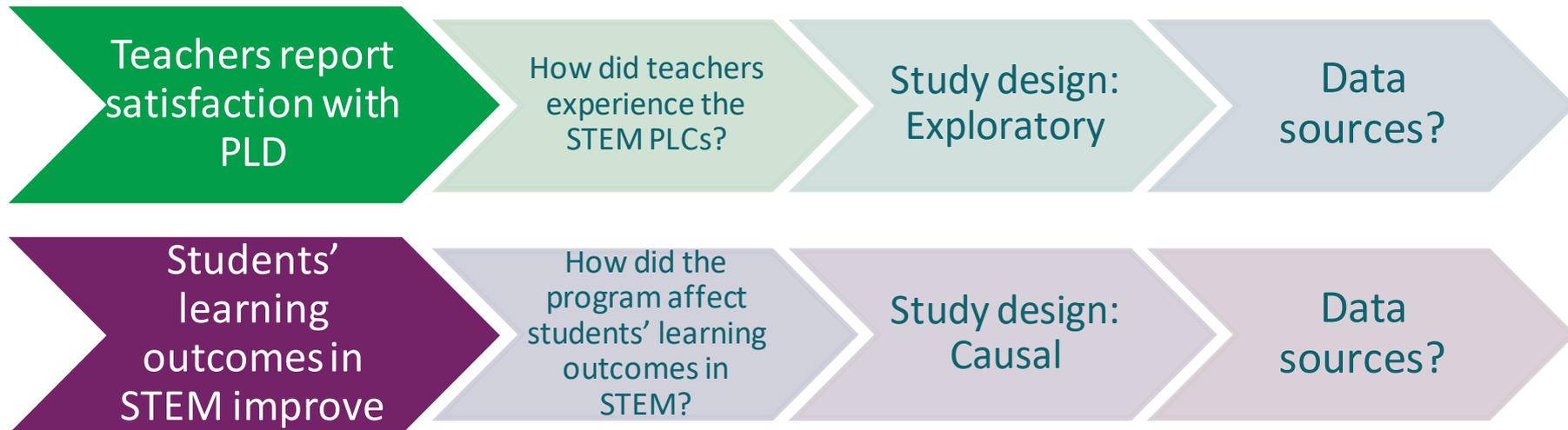
What decisions can be made about the program?

# Example: STEM Partnership

Once you have your evaluation questions and decided which study design to use (Step 2), Step 3 relates to gathering data that can answer those questions.

Logic model outcome

Evaluation question



## Step 3: Implement

### Guiding questions:

- How should data be collected?
  - Will you use qualitative or quantitative data?
- Have considerations related to utility, feasibility, propriety, and accuracy been addressed?
- How should the data be analyzed?

# Qualitative versus quantitative data

- Qualitative data come from talking to participants directly, written observations or documents, or responses to open-ended questions.
- Quantitative data are numeric counts, scores, and summaries of information that can be manipulated using statistics.



# Data sources: Where does your evidence come from?

## Common data sources:

- Interviews
- Focus groups
- Surveys
- Observations
- Document review
- Existing quantitative data  
(e.g., assessment test results,  
district demographics, teachers'  
evaluation ratings)



# Data sources: interviews

## Advantages

- Provide in-depth answers
- Permit follow up for more detail or clarification
- Supports building connections between interviewer and interviewee, which might help the interviewee be more honest

## Disadvantages

- Lengthy data collection period
- More costly due to time
- Might not gain access to all participants
- Self-report might not match behavior
- No anonymity

# Data sources: focus groups

## Advantages

- Interaction of participants might enhance responses
- Can be efficient with collection of qualitative data from a group

## Disadvantages

- Group interaction might inhibit responses
- Respondents might not be willing to talk in a group
- Complex subject matter might not allow everyone to respond
- No anonymity

# Data sources: surveys

## Advantages

- Can cover a wide range of topics
- Can cover a wide range of participants
- Relatively inexpensive to administer
- Can include both quantitative (closed-ended) and qualitative (open-ended) questions
- Provides anonymity

## Disadvantages

- Self-report might not match behavior
- Might lack depth
- Response rates are important

# Chat: What other advantages or disadvantages do these data sources have?

- Interviews
- Focus groups
- Surveys



# Data sources: observations

## Advantages

- Can collect evidence about behavior or application
- Provides information about a situation or context

## Disadvantages

- Time consuming
- More costly due to time
- Require trained observers
- Presence of observer might affect behaviors
- Observation might be atypical

# Data sources: document reviews

## Advantages

- Data already exist
- Provide information on historical trends or public attitudes
- Unobtrusive

## Disadvantages

- May be incomplete or inaccurate
- Analysis might be time consuming

# Data sources: Existing quantitative data

## Advantages

- Provide “objective” information
- Constructed to measure a particular indicator
- Summarized using straightforward methods (e.g., statistics)

## Disadvantages

- Might oversimplify the findings
- Need to negotiate access to data (e.g., privacy considerations)

# Chat: What other advantages or disadvantages do these data sources have?

- Observations
- Document reviews
- Existing quantitative data

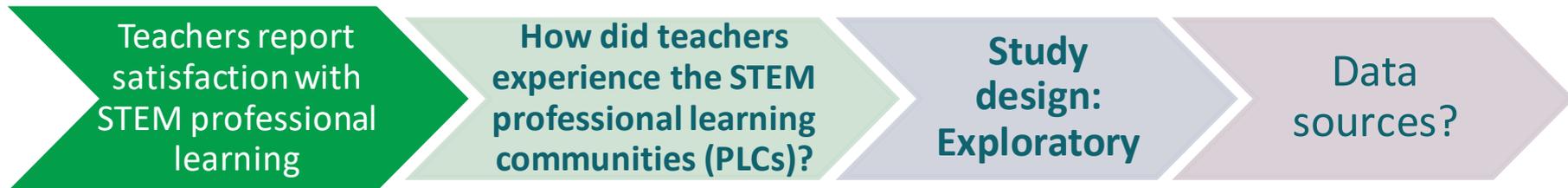


# Poll: STEM Partnership

What data might you collect to understand this evaluation question?

Logic Model Outcome

Evaluation Question



# Poll: STEM Partnership

What data might you collect to understand this evaluation question?

Logic Model Outcome

Evaluation Question



# IMPROVING DATA QUALITY

# Considerations for data quality

**Improving data quality will help increase the credibility & reliability of the data that are collected.**

- Are the data complete?
- Are the data representative?
- Are all data complete for the time period of interest?
- Can you draw valid inferences/conclusions from this data?
  - Were the data instruments consistent?
  - Were the data collectors trained in how to administer the instruments?

# Considerations during data collection

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## Utility

Have key stakeholders been consulted about data collection?

---

Will some methods be more credible with key stakeholders?

---

Are methods & data sources appropriate to the intended purpose and use?

---

## Feasibility

Can data be collected within the time & budget of the evaluation?

---

Does the evaluation team have expertise to implement the chosen methods?

---

Are methods & sources consistent with the culture and characteristics of the participants?

---

# Considerations during data collection

---

## Propriety

Is the data collection method disruptive or intrusive?

---

Are there issues of participant confidentiality or safety that must be considered?

---

## Accuracy

Are procedures in place to ensure quality of data collection?

---

Are enough data being collected to support analysis?

---

# Poll: STEM Partnership

In order to investigate the following evaluation question—

*How and in what ways did the STEM Partnership change teachers' instruction?*

—you decide to collect the data on teacher instruction in two ways:

1. Issue a teacher survey
2. Observe teachers in their classrooms

**What would you need to pay attention to, related to data quality?**

- Utility
- Feasibility
- Propriety
- Accuracy

Use the chat to tell us why.



# DISCUSSION & APPLICATION

# Reviewing the evaluation planning process

Logic model

A vertical flowchart with five blue rectangular boxes, each containing a step in the evaluation planning process. The boxes are arranged in a descending staircase pattern from top-left to bottom-right. Each box is connected to the one below it by a grey downward-pointing arrow.

Outcomes of interest

Evaluation questions

Study design

Data sources

## Poll: Applying to your own districts

- What kinds of data related to professional learning & development do you have **readily available**?
- What kinds of data related to PLD are the **hardest to get** and why?

## Poll: Applying to your own districts

- Which stakeholder group is the **easiest** to get data from?
- Which stakeholder group is the **hardest** to get data from?

# Questions



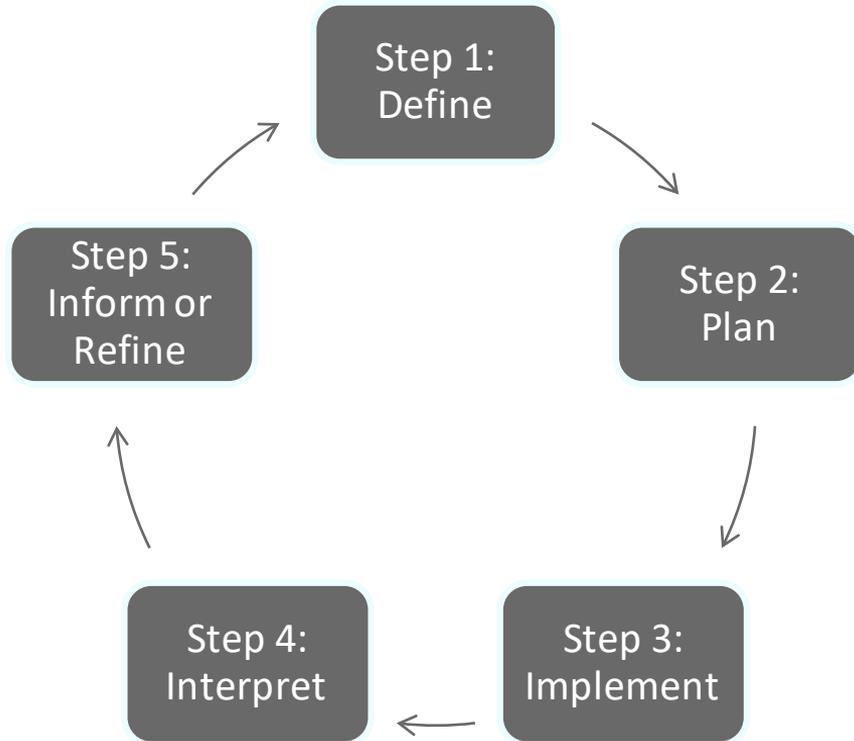
# CONCLUSION & NEXT STEPS

# Discussion review

- Evaluation questions
- Evaluation study design
- Data collection
- Enhancing data quality



# A continuous evaluation model



## Step 1: Define

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## Step 3: Implement

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# Next webinar

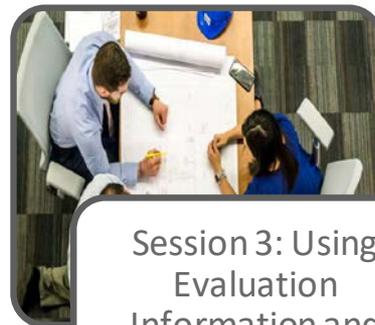
Date: Thursday, January 25, 2018, 3:00–4:30 pm Eastern



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Planning Process  
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Session 3: Using  
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# To contact today's presenters

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Visit the REL-NEI website!

[ies.ed.gov/ncee/edlabs/regions/northeast](https://ies.ed.gov/ncee/edlabs/regions/northeast)



# References and resources

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