Coaching session 3: Pilot study planning

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January 9, 2020

REL SOUTHWEST

Session objectives

1. Review key stages of conducting a pilot study.
2. Identify priority research questions for the early learning inventory (ELI) pilot.
3. Detail best practices for sampling and outreach strategies for efficient and effective recruitment.
4. Build Oklahoma State Department of Education's (OSDE's) capacity to estimate costs and budget for a pilot study.
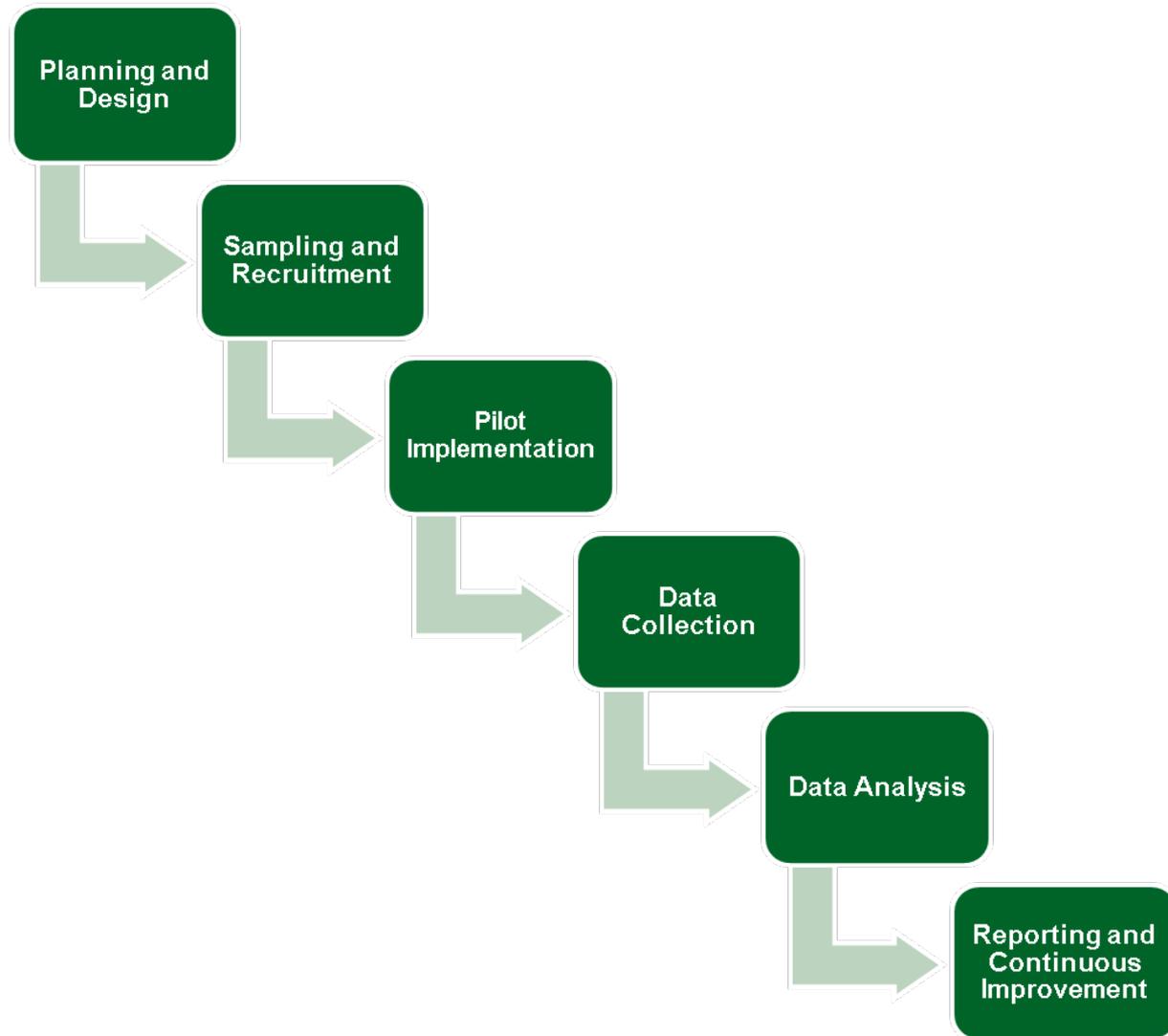
Agenda

1. Stages of a pilot study

2. Identifying ELI pilot research questions

3. Sampling and recruitment strategies

4. Costs for conducting a pilot study

Stages of a pilot study

Stages of a pilot study

Step 1: Planning and design

- Develop intervention to pilot.
- Define goals for pilot: What do you want to know?
- Specify research questions.
- Ensure that resources are available to support pilot work.

Step 2: Sampling and recruitment

- Representative versus convenience sample.

- Size of sample.

- Developing recruitment materials.

- Institutional Review Board (IRB) approval.

- Recruitment implementation.

- Recruitment tracking.

REL resources on sampling:

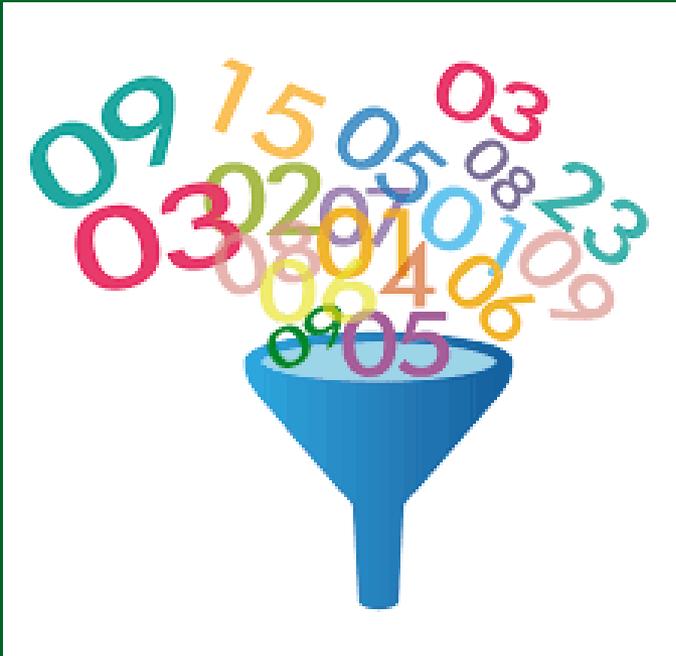https://ies.ed.gov/ncee/edlabs/regions/midwest/pdf/REL_2017214.pdf

https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2016160.pdf

Step 3: Pilot implementation

- OSDE implementation.
  - Teacher training.
  - Ongoing implementation supports.
- Teacher implementation of ELI.

Step 4: Data collection

- Administrative data.

- Teacher surveys.

- Teacher interviews.

- Teacher observations

- Direct student assessments (e.g. DIBELS/ observations (e.g. CLASS).

Step 5: Data analysis

- Data cleaning.
- Data analysis.
- Discussion.
- Follow-up analysis.
- Discussion.

Step 6: Reporting and continuous improvement

- Report writing.
- Dissemination.
- Reflections on lessons learned.
- Scale-up.

Activity: Identification of ELI pilot study research questions

What type(s) of information is needed to inform future implementation?

Validity and reliability of the ELI

Is the ELI valid in Oklahoma?

Implementation of the ELI

Is the ELI implemented as intended?

What helps support implementation?

Impact of the ELI

What effect(s) does the ELI have on teachers and students?

Validation in Oklahoma research questions

1. From a psychometric perspective, what distinct **domains** does the ELI validly measure?

2. Do any of the items exhibit **potential bias** for student subgroups?

3. Do teachers use **rating categories** for each item as intended?

4. To what extent do ratings provide **information about individual student abilities**?

5. Other questions?

What data sources can be used to answer questions about validation?

Implementation research questions

1. To what extent did the **ELI training and resources** prepare teachers to effectively implement the ELI?

2. How did teachers report using **the ELI in the classroom**?

3. How did teachers describe their interactions with the **ELI technological platform**? What modifications would teachers make?

4. What were the **key facilitators and challenges** for teachers implementing the ELI?

5. Other questions?

What data sources can be used to answer questions about implementation?

Outcome research questions
(if correlational design)

1. Is teachers' use of the ELI associated with increased **teacher efficacy** to support individual students' needs?

2. Is teachers' use of the ELI associated with increased use of **effective data-use practices**?

3. Is teachers' use of the ELI associated with greater **student academic achievement**?

4. Is teachers' use of the ELI associated with greater **parent-teacher communication** in kindergarten?

5. Other questions?

Outcome research questions
(if causal impact study design)

1. Does the ELI increase **teacher efficacy** to support individual students' needs?

2. Does the ELI increase teachers' use of **effective data-use practices**?

3. Does the ELI increase **student academic achievement**?

4. Does the ELI improve **parent-teacher communication** in kindergarten?

5. Other questions?

Design Considerations for Impact Studies

- Comparison group: Are the treatment and control groups the same except for treatment?

- How can we achieve equivalence?

    - Randomization (gold standard).

    - Matching/controlling on observable characteristics.

- How can we assess equivalence?

    - Equivalence of characteristics at baseline.

What data sources can be used to answer questions about impact?

Break

Sampling and effective recruitment outreach strategies

Sampling: A review of key terms

- Target population.
- Sampling design.
- Selection process.
- Stratification.
- Sampling procedures.
- Sample size and statistical power.

Target Population

Sample

(Creswell, 2003)

Sampling planning

Sampling consideration	Questions to inform decisionmaking
Target population	Will the ELI focus on public-school kindergarten teachers exclusively?
Sampling design	Will participation be decided at the district, school, or teacher level?
Selection process (into the ELI pilot)	Will OSDE seek interest from districts/schools prior to or after selection process? Assuming oversubscription, how will you select among interested districts/schools/teachers? Will you consider collecting data from a comparison group?
Stratification	What subgroups are important to represent to ensure diversity and representation of various experiences?
Sample size and statistical power	How many teachers and schools can OSDE afford to support during the ELI pilot? (Larger sample could provide enough power to examine causal impact.)

Effective recruitment strategies: Lessons learned

- Incentives matter.

- Communication from a trusted source.

- Concise, clear, and visually engaging resources.

- Multiple modes of dissemination.

- Follow-up communications.

(Singleton, Straits, Straits, & McAllister, 1988)

Effective recruitment strategies: Lessons learned

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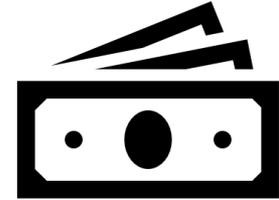
Discussion question:
In what ways, if any, can OSDE implement each of these strategies?

Important recruitment resources

- ✓ Informed consent form
- ✓ One-page study overview
- ✓ Study website
- ✓ Scripts for telephone calls
- ✓ Email and mailing letter templates
- ✓ Social media posts and images
- ✓ Short information video
- ✓ Telephone contact person for questions
- ✓ Communication strategy
- ✓ Communication log

Activity: Develop language for recruitment materials

Estimating pilot study costs

1. **Labor hours by task and subtask**
   A. Development of ELI training and resources
   B. Planning for study
      a) Sampling and recruitment
      b) Design or adopt data collection instruments, if necessary.
      c) Data collection
      d) Data analysis
      e) Reporting, dissemination, and continuous improvement
2. **Other direct costs**
   A. Training location
   B. Web-based training technology fee
   C. Printing
   D. Teacher/principal incentives
   E. Other training supplies
3. **Travel costs**

Costs for conducting a pilot study

Questions?

Thank you!

https://ies.ed.gov/ncee/edlabs/regions/southwest/index.asp

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