Coaching session: Early Learning Inventory (ELI) Analysis Planning May 26, 2022

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Session objectives

- 1. Review the approved analysis plan.
- 2. Identify any new priorities for information needed.
- 3. Identify how and when the information will be used.



SWECE Research Partnership logic model

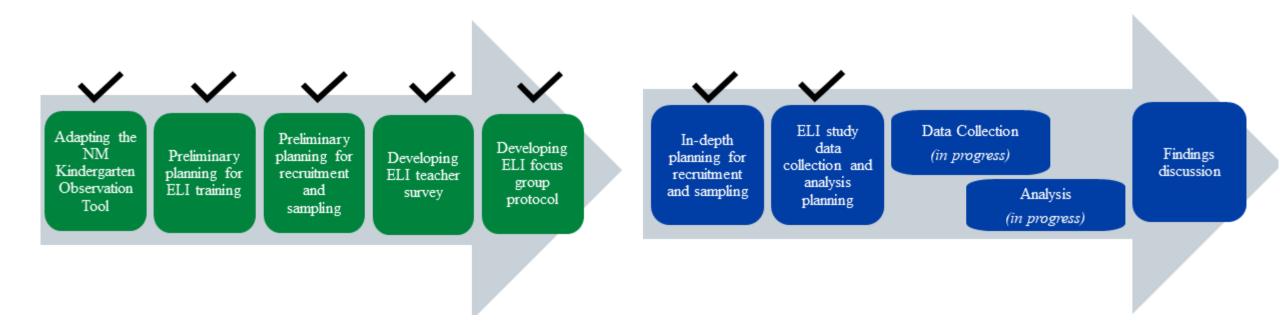
Southwest Early Childhood Education (SWECE) Research Partnership Goals: REL Southwest is working with the Oklahoma State Department of Education (OSDE) and other partners to improve student learning in preK programs across the state by targeting participation, using an ELI to assess students' knowledge and skills in order to provide appropriate interventions, and strengthening instructional practices and curricula materials used in preK classrooms.

Outcomes Short Medium **SWECE Projects** Long (0-12 months) (1-3 years) (4+ years) Early Learning Inventory (ELI) SEA staff will increase their knowledge of the strengths, challenges, and processes involved in developing or UAP-1 (4.2.4), Lessons from other states (webinar). selecting assessment instruments. Teachers use data from the ELI to inform UAP -1 (5.2.3). Instrument Selection and Development classroom instruction. Progress toward SEA staff will select an ELI and develop resources to UAP-2 (5.2.14), Planning for Early Learning Inventory Study OSDF's statewide support Kindergarten and Grade 1 teachers to use the ELI. OSDE creates and provides resources and ESSA Goals: UAP-3 (5.2.19). Support for Early Learning Inventory Study analyze the results of the ELI, and use the data to inform teacher training on evidence-based instruction. methods to prepare students for Goal 1: academic success in early elementary SEA staff will increase their knowledge and skills to Quality of learning grades, including helping them to be Formative Assessment Knowledge Dissemination facilitate an ELI study and a statewide launch of an ELI. opportunities increase "ready to read." including developing a communication plan, recruiting UAP - 1 (4.2.7). Early Learning Inventory Video in Oklahoma's stateparticipants, developing a data collection measure, Using information from the ELI study and funded PreK and early UAP - 3. (4.2.6). Blog Series on Formative Assessment collecting data, and analyzing the data from an ELI study. the Survey of PreK /K Curricula and elementary grades. UAP-3 (5.2.20). Culturally-Responsive Formative Assessment Practices of Young Instructional Practices Survey, OSDE SEA staff will have access to resources that describe creates and provides training and UAP-3 (5.2.20). Using Formative Assessment to Understand Social and formative assessment methods and uses. technical support to teachers to 1) use an Goal 2: **Emotional Development** FLL to learn about individual student Alian early childhood SEA staff will increase their skills to design teacher training knowledge and skills, and 2) use data education and on culturally-responsive formative assessment methods to from an ELI to individualize instruction. learning foundations understand students' social and emotional learning, and Prekindergarten and Kindergarten Curricula and Instructional Practices the influence of rater bias on the interpretation of student to ensure at least 75 OSDE creates and provides resources and SEL assessment data. percent of students UAP-1 (5.2.4). Survey of PreK and K. Curricula and Instructional Practices teacher training on selecting appropriate are "ready to read" on instructional materials and assessment UAP- (6.3.3). PreK and K Learning Environments and Teachers' Use of Curricula SEA staff will increase their understanding about methods, including the use of formative grade level. developing surveys, conducting cognitive interviews, and Assessment assessment methods to learn about (Oklahoma ESSA Goal) implementing surveys, and analyzing survey results. students' knowledge and skills. Increase knowledge of various aspects of statewide PreK Prekindergarten Participation Goal 3: programs (for example, PreK teacher qualifications, UAP-1 (6.2.2). Public PreK Participation Study and Infographic PreK enrollment classroom practices, curriculum standards alignment, increases in quality, and variation of PreK programs). Just in Time COVID-19 Support Oklahoma's state-OSDE develops a plan for communicating Supporting Young Children's Learning and Well-Being at Home: A COVID-19 funded PreK program. Increase understanding of preK enrollment patterns and the benefits of preK and develops Resource for Teachers, Parents, and Caregivers (infographic) attendance statewide. targeted strategies in communities to · Supporting Families in Promoting Early Learning at Home (webinar) increase PreKenrollment Supporting Young Children's Learning and Development at Home: Resources for Early Childhood Educators and Caregivers (searchable SEA staff will increase their knowledge of the resources and support materials available to assist LEAs during the database)

COVID-19 pandemic.



ELI project phases





Study Objectives

• A continuous improvement study of the ELI that will inform changes to the measure, training, and guidance provided by OSDE.

Validation research questions

- Domains validly measured?
- Potential bias for student subgroups?
- Provide information about individual student abilities?
- Comparability across years?

• Implementation research questions

- Do the ELI training and resources prepare teachers?
- How do teachers administer ELI and use ELI data to inform instruction?
- Teachers' perceptions about the feasibility and value of using the ELI?
- Key facilitators and challenges for implementing the ELI?
- Improvements to the ELI training, measure, and technology platform?
- Systems and contextual factors and motivations of ELI use by districts?



Validation Analysis Plan



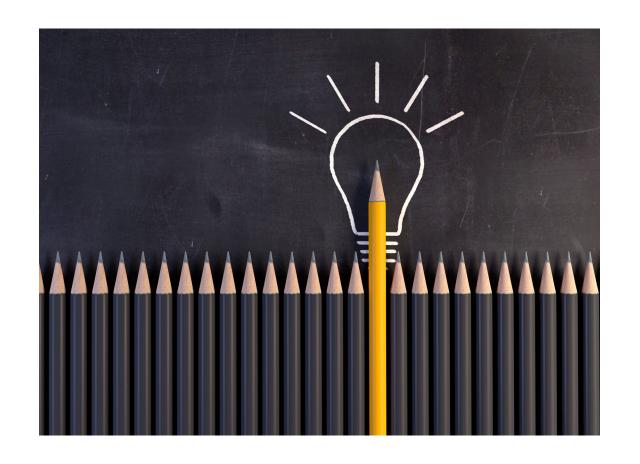
Validation Research Questions

- 1. What domains of students' learning and development does the ELI validly measure?
- 2. Do any of the ELI indicators exhibit potential bias for student subgroups?
- 3. Do teachers use rating categories for each ELI item as intended?



Validation Research Questions (continued)

- 4. To what extent does the ELI provide information about individual student abilities?
- 5. To what extent are students' beginning-of-year, middle-of-year, and end-of-year administrations of the ELI comparable?



Data Preparation and Preliminary Analytic Steps

- Student-level data preparation
- Teacher survey data preparation
- Merge of student and teacher data files
- Nonresponse analyses and weighting
 - Unit nonresponse
 - Item nonresponse





RQ1: What domains of students' learning and development does the ELI validly measure?

Identify domains measured by ELI.

- Group items into domains
- Test if grouping is supported by the data

Are ELI and its domains reliable?

- Are teacher's responses across the items consistent?
- Other types of reliability measures

Does ELI measure what it is intended to measure?

• Types of validity





RQ2. Do any of the ELI indicators exhibit potential bias for student subgroups?

Does the ELI measure the same constructs across groups of students?

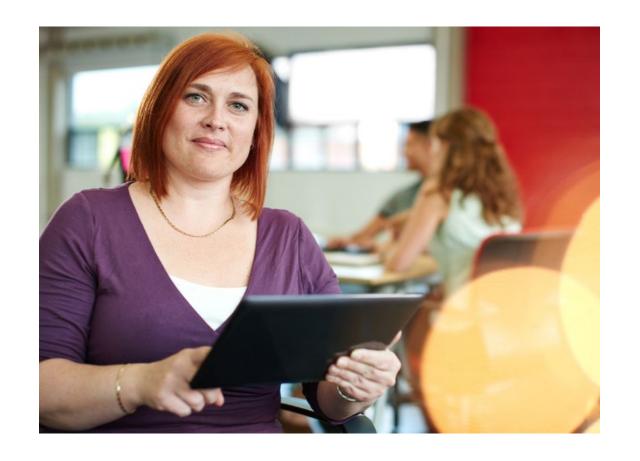
- Gender
- EL status
- FRPL
- Special education status
- Race/ethnicity

Do teachers' responses to any ELI indicators differ for different student groups?



RQ3: Do teachers use rating categories for each ELI item as intended?

- Examine the performance of each item.
- Rasch model



RQ4: To what extent does the ELI provide information about individual student abilities?

- Did teachers in Grades K and 1 perform the assessment the same way?
 - Multi-level modeling
 - Amount of score variation attributable to teachers rather than children



RQ5: To what extent are students' beginning-of-year, middle-of-year, and end-of-year administration of the ELI comparable?

- Are domains of ELI comparable across different time points?
 - Factor structure
 - Functions of ELI items



Examp



Early Learning Inventory Example Figures and Tables (Appendix M of proposal)

M. Example figures and tables

Example Figure M1. ELI indicators by validated N-factor structure dimensions, fall 2021

Domain 1	Domain 2
Indicator name	Indicator name
Domain	Domain N
Indicator name	Indicator name
Indicator nama	Indicator name



Brainstorm: Emerging information needs that could be addressed with the data



Brainstorm: How and when will you use this information?





Implementation Analysis Plan



Crosswalk of Implementation Research Questions and Data

	Research Questions	Pre-training survey	Post-training survey item sets	First follow- up survey	Second follow- up survey	Administrator Survey	Focus Group Protocol
1.	To what extent do the ELI training and resources prepare teachers to use the ELI?	#1	#1	#1-2, 11	#4-5	#4	#7-8
2.	How do teachers report administering the ELI in their classroom, and do they report using the ELI data to inform instruction?	n/a	n/a	#3-8	#6-12	#5 (administrator use)	#1-2
3.	What are teachers' perceptions about the feasibility and value of using the ELI in their classroom?	n/a	n/a	#9-10	#13	n/a	#1-2
4.	What are the key facilitators and challenges for teachers implementing the ELI with fidelity?	n/a	n/a	#12	#14-16	#6-10	#3-6
5.	What improvements could be made to the ELI training, measure, and technology platform to increase feasibility and fidelity?	n/a	#2-4	#13-14	#14-15	#11-12	#7-10
6.	Under what circumstances (systems and contextual factors) and for what motivations did districts elect to use the ELI?	n/a	n/a	n/a	#17-19	#13-14	n/a
7.	Demographic characteristics	#2-8	n/a	n/a	n/a	#1-2, 15	n/a



Implementation Analysis Methods

Survey analyses

Individual close-ended survey items

- Tabulate responses to each survey item.
- Examine distribution of responses for the overall sample.
- Examine the distribution of responses separately for new and experienced teachers.
- Examine changes in teacher self-efficacy to use formative assessment over time.

Open-ended items

- Examine responses for potential categories of findings.
- All responses will be double-coded.





Implementation Analysis Methods – Continued

Teacher focus group analyses

- Obtain transcripts of the focus groups.
- Read and evaluate transcripts and label sections of the transcripts with a priori and emergent theme codes.
- Summarize the main themes into summary paragraphs.



Example Survey Table Format

Example Table M8. Descriptive summary of teacher survey responses, fall 2021

Please indicate the amount of time it took you to complete the following ELI tasks:		Minutes		
	N	Average	Minimum	Maximum

Complete the ELI assessment for all students.

Enter ELI assessment data into the technology platform.

Generate ELI reports.

Review reports and data to inform your instruction.

ELI is Early Learning Inventory.

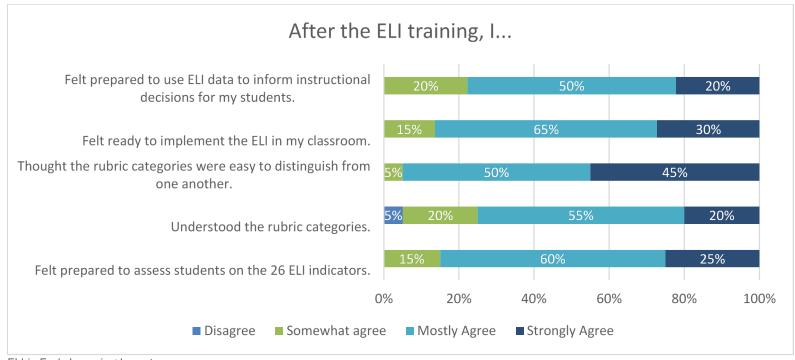
Note: N = XX teachers.

Source: Authors' analysis of data from the 2021 Early Learning Inventory teacher survey responses.



Example Survey Figure Format

Example Figure M5. Frequency distribution of teacher survey responses, fall 2021



ELI is Early Learning Inventory.

N = XX teachers.

Source: Authors' analysis of data from the 2021 Early Learning Inventory teacher survey responses.



Example Focus Group Table Format

Example Table M10. Qualitative themes to focus group protocol question, "How would you change the ELI training to improve it?", fall 2021

Themes	Exemplary Quotes
Note: N = XX teachers. Source: Authors' analysis of data from	n the 2021 Early Learning Inventory teacher focus group transcripts.



Brainstorm: Emerging information needs that could be addressed with the data





Brainstorm: How and when will you use this information?





Next steps

- Finish data analyses from fall 2021
- Collect and analyze data from spring 2022
- Present results



Thank You!



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



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