# Using existing data for ECE research

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#### What is existing data?

- Secondary data
- Large survey data
- Administrative data
- Data collected by other researchers

### Why use existing data?

- Costs
  - Your time is valuable!
- Sample sizes
  - Subgroups of interest: children, teachers, classrooms
- Measures
  - A wide range of developmental and survey responses
- Longitudinal
  - Can examine experiences over time
- Allows you to test hypotheses you might develop from other modes of research

#### What type of ECE questions can be addressed?

- Descriptive questions about kids, families, teachers
- Correlational questions about child development and contexts
- Other topics addressed using secondary data:
  - Preschool, child care, Head Start
  - Child health, parental health, peer health
  - Teacher attitudes, expectations, interactions
  - Classroom contexts, content, peers
  - State and local policy differences

#### Trade offs: Existing data or collecting data

- Can't add measures—stuck with what is there
- No thick description of the experiences, contexts, etc.

### Early Childhood Longitudinal Studies

- Two kindergarten cohorts
- A birth cohort
- Another kindergarten cohort in the works for 2023

#### Who? ECLS-K:1999 & 2011

- Longitudinal, nationally representative sample
- Full- and part-day kindergarteners attending public and private schools in 1998-99 & 2010-11
- Parents, teachers, schools administrators, and beforeand after-school care providers
- Direct assessments of children

#### When? ECLS-K:1999 & 2011

Longitudinal study which is followed same children from kindergarten through the fifth grade (ECLS-K: 2011) and eight grade (ECLS-K:1999).

	ECLS-K:1999	ECLS-K:2011
Kindergarten	1998-99 fall & spring	2010-2011 fall & spring
1 <sup>st</sup> grade	1999-2000 fall & spring	2011-2012 fall & spring
2 <sup>nd</sup> grade		2012-2013 fall & spring
3 <sup>rd</sup> grade	2002 spring	2014 spring
4 <sup>th</sup> grade		2015 spring
5 <sup>th</sup> grade	2004 spring	2016 spring
8 <sup>th</sup> grade	2007 spring	

#### What?

• Children's development: reading, math, social, emotional, and physical development

 Children's developmental contexts: home environment, home educational activities, school environment, classroom environment, classroom activities & composition, teacher characteristics and attitudes/beliefs, and before- and afterschool care

#### Questionnaire topics in ECLS-K:2011 – Parents

Child care arrangements <sup>1</sup> Child demographic characteristics <sup>2</sup> Child disabilities and services <sup>3</sup> Child health and well-being
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Child health and well-being
Child mobility
Child social skills, problem
behaviors, and approaches
to learning <sup>4</sup>
Country of origin of parent and
child <sup>5</sup>

Country of origin of parent and child <sup>5</sup>
Family structure
Food sufficiency and food
consumption
Household roster
Home environment, activities,
resources, and cognitive
stimulation <sup>6</sup>
Home language <sup>5</sup>
Involvement of nonresident
parent
Neighborhood safety
Parent characteristics
Parenting stress

#### Questionnaire topics in ECLS-K:2011 – Teachers

Teacher-level questionnaire
topics
Activities and resources
related to Response to
Intervention programs
Teacher evaluation and
grading practices
Parent involvement
Meeting with other teachers
Respect from and cooperation
with other teachers
Opportunities for professional
development
Teacher's views on teaching,
school climate, and
environment
Teacher's experience,
education, and background

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Child-level questionnaire
lopics
Instruction for English
language learners
Prediction of child's ultimate
educational attainment
Parent involvement
Child's primary teacher in
reading, mathematics,
science, and social
studies
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Child-level questionnaire topics	
Student and enrollment information	
Summer assignments	
Language and literacy skills and knowledge	
Mathematical thinking skills and knowledge	
Science skills and knowledge	
Overall academic rating	
Overall academic rating, by subject	
Social skills	
Approaches to learning	
Attention focusing and inhibitory control	
School liking and avoidance	
Student-teacher relationship	
Peer relationships	
Bullying, victimization	
Working memory, executive function	
Specialized programs and services for the child	

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Teacher-level questionnaire topics Classroom and student characteristics Class type (half day or full day) Class organization and resources Availability of computers, Internet Use of technology, including computers Instructional activities Instruction for English language learners Content coverage for language arts Content activities for reading and language arts Content coverage for mathematics Content activities for mathematics Content coverage for science Content activities for science Content coverage for social studies See notes at end of exhibit.

#### Questionnaire topics in ECLS-K:2011 – School administers

School administrator questionnaire topics School characteristics Facilities and resources School-family-community connections School policies and practices Response to Intervention programs

School programs for

Prositing School programs for particular populations (language minority children and children with special needs) Federal programs Staffing and teacher characteristics School administrator characteristics and background

### Asking your questions of existing data



Early Childhood Research Quarterly



#### The effects of maternal depression on child outcomes during the first years of formal schooling



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#### ABSTRACT

Depression among parents, particularly maternal depression, is an important factor in children's lives. Among mental health disorders, depression is one of the most common and can be a debilitating and chronic condition. Little research has examined the effect of maternal depression on children's school-related outcomes during the early years of formal schooling. Using a nationally representative sample of over 16,940 kindergarteners (ages 5–6); we examine the association between the timing and persistence of maternal depression, measured in kindergarten and third grade, and children's school behaviors, academic achievement, and school absences through fifth grade. Results indicate that persistent maternal depression predicts more negative behaviors, smaller achievement gains, and increased school absences. Implications for policy and practice are discussed.

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#### How do children spend their time in kindergarten?

#### Teacher reports of time in full-day kindergarten (ECLSK)

1998-99

2010-11



#### Who goes to kindergarten?

#### Characteristics of Students

	1998-99	2010-11
Full day kindergarten	.61	.87
Female	.49	.49
Race/ethnicity		
White	.58	.52
Black	.15	.13
Latinx	.19	.25
Asian	.03	.04
Age (months)	68.44	68.48
n=	17,810	15,090

#### Family SES changes between 1998 and 2010?

#### SES Indictors for Kindergarten Students

	ECLS-K:1998	ECLS-K:2010	
Below Federal Poverty Line	.22	.25	
Food insecure	.09	.11	
TANF last 12 months	.12	.06	
Food Stamps last 12 months	.20	.29	
Mother Bachelor's degree or more	.24	.31	
Single parent	.23	.22	
English not primary home language	.12	.16	
Unemployed (parents)	.33	.37	
+Differences significant except single parent			

## Who goes to preschool, child care, Head Start prior to K?

## Kindergarteners by type of child care prior to K entry (1998-99 ECLSK)

	Full Sample	Center Care	Head Start	No Preschool
Female	0.49	0.5	0.51	0.47
Race/Ethnicity				
White	0.65	0.73	0.37	0.64
Black	0.15	0.11	0.37	0.12
Latinx	0.13	0.1	0.16	0.17
Asian	0.02	0.02	0.01	0.02
Maternal Ed. (Yrs)	13.57	14.25	12.16	12.88
Single parent	0.22	0.18	0.39	0.21
English not primary home language	0.04	0.03	0.07	0.06

#### Who teaches K?

#### Kindergarten Teacher Characteristics

	1998-99	2010-11
Female	.98	.98
Race/Ethnicity		
White	.86	.83
Black	.07	.06
Latinx	.04	.08
Asian	.02	.02
Master's degree or higher	.37	.46
Years teaching K	9.07	8.79
Certified	.89	.89
n=	3,020	3,060

#### School Funding Changes?

#### School-level Indicators

	ECLS-K:1998	ECLS-K:2010
In the past 3 years		
Funding decreased	.12	.61
Family income decreased	.07	.48
Student mobility increased	.18	.32
Teaching staff reduced	.14	.31
Received Title I this year	.52	.75

#### What math content do teachers teach in K?

• Does it relate to student math learning?

#### Mathematics in Kindergarten: Mean days/month

Content Measures	ECLS-K: 1998	ECLS-K: 2011	Difference
Basic Counting & Shapes (4 items)	12.61 (4.03)	12.81 (3.97)	.2*
Patterns & Measurement	7.45	7.68	.23
(5 items)	(4.35)	(4.43)	
Place value & Currency	8.48	10.59	2.11**
(4 items)	(5.11)	(5.22)	
Addition & Subtraction	7.50	9.45	1.95***
(2 item measure)	(6.46)	(6.47)	

\*p<.05, \*\*p<.01, \*\*\*p<.001

#### Mathematics in K predicting end of K math achievement

Teacher Content Measures	Spring K Math Test Score			
	1998-99	2010-11		
Basic counting & shapes	031* (.006)	023* (.007)		
Patterns & measurement	015* (.006)	020* (.009)		
Place value & currency	.035* (.009)	.042* (.008)		
Addition & subtraction	.037* (.009)	.046* (.008)		
Observations	17,810	15,090		

\* p < .05; models have full set controls; standard errors adjusted for sample-design clustering

#### Periodicity: ECLS-K:1999

Year	Grade		Children	Parent	Teacher	School admin.
1998-1999	Kinder	Fall	0	0	0	
1998-1999	Kinder	Spring	0	0	0	0
1999-2000	1 <sup>st</sup>	Spring	0	0	0	0
2002	3 <sup>rd</sup>	Spring	0	0	0	Ο
2004	5 <sup>th</sup>	Spring	0	0	0	0
2007	8 <sup>th</sup>	Spring	0	0	0	0

#### Periodicity: ECLS-K:2011

Year	Grade		Children	Parent	Teacher	Special Ed. Teacher	School admin.	Child Care
2010-11 Kinder	Kindor	Fall	0	0	0			
	KIIUEI	Spring	0	0	0	0	0	0
2011-12 1 <sup>st</sup>	<b>1</b> st	Fall	0	0	0			
	T	Spring	0	0	0	0	0	
2012-13 2 <sup>nd</sup>	<b>ว</b> nd	Fall	0	0	0			
	Z	Spring	0	0	0	0	0	
2014	3 <sup>rd</sup>	Spring	0	0	0	0	0	
2015	4 <sup>th</sup>	Spring	0	0	0	0	0	
2016	5 <sup>th</sup>	Spring	0	0	0	0	0	

#### Reliable assessments

Children's cognitive, socioemotional, and physical development

- Cognitive assessments
  - Reflect National Assessment of Educational Progress(NAEP) and selected states' curriculum standards
  - Two-stage adaptive tests in order to maximize accuracy of measurement and minimize both administration time and the potential for ceiling and floor effects

#### Assessments

#### 1) Reading (IRT scores)

- Print familiarity, letter recognition, beginning and ending sounds, recognition of common words, decoding multisyllabic words
- Vocabulary knowledge: receptive vocabulary and vocabulary-in-context
- Reading comprehension: in text, definitions, facts, supporting details, inference, judgement etc.

#### 2) Mathematics

- Conceptual knowledge, procedural knowledge, and problem solving
- Includes number sense, properties, and operations; measurement; geometry and spatial sense; data analysis, statistics, and probability; and patterns, algebra, and functions.

#### 3) Science

• physical sciences, life sciences, environmental sciences, and scientific inquiry

#### Continued

#### 4) Executive function

- Cognitive flexibility
  - Using Dimensional Change Card Sort (DCCS; Zelazo 2006)
- Working memory
  - Using Numbers Reversed subtest of the Woodcock-Johnson III Tests of Cognitive Abilities (Mather and Woodcock 2001)

- 5) Teachers' evaluations
  - Language & literacy, science, and mathematical thinking

#### Continued

6) Socioemotional measures (teacher and parent reported)

- Social skills/self control
- problem behaviors (e.g., impulsivity and externalizing problem behaviors)
- Approaches to learning/attentional control
- Internalizing behaviors
- 7) Physical measures
  - Children's height and weight

#### Questionnaire topics in ECLS-K:2011 – Children

Child questionnaire topics

Perceived Interest/Competence in Reading<sup>1</sup>

Perceived Interest/Competence in Math<sup>1</sup>

Perceived Interest/Competence in Science<sup>1</sup>

Perceived Interest/Competence in Peer Relationships<sup>1</sup>

Peer Victimization<sup>2</sup>

Social Anxiety/Fear of Negative Evaluation<sup>3</sup>

Prosocial Behavior<sup>4</sup>

Life Satisfaction<sup>5</sup>

Behavioral Engagement<sup>6</sup>

Peer Social Support<sup>7</sup>

Loneliness<sup>8</sup>

Media Usage<sup>9</sup>

Pets<sup>10</sup>

#### More information

• ECLS-K:1999

https://nces.ed.gov/ecls/kindergarten.asp

• ECLS-K:2011

https://nces.ed.gov/ecls/kindergarten2011.asp

• Data files (public-use)

https://nces.ed.gov/ecls/dataproducts.asp

#### Thanks!

Questions

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