

Do Classroom Variables Influence Early Literacy Development?

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Center for Early Education and Development
University of Minnesota

Today's Presentation

- Literacy development overview
 - The "what," "when," and "how"
 - For diverse groups of children
- Research study
 - Literacy development and...
 - Different groups of children
 - Preschool classroom environments

Processes Involved in Literacy Acquisition

- Observe literacy behaviors
 - Child sees others read or write for business or pleasure
- Partner
 - Child interacts with another individual
- Practice
 - Child attempts alone what is learned with others
- Perform
 - Child shares what has been learned and seeks response

Skills Involved in Literacy Acquisition

- Phonemic awareness
 - Strong predictor of reading success
 - Necessary to acquire ability to use phonics
 - Hierarchical skills: rhyme, alliterate, blend phonemes and split syllables, segment and blend phonemes
- Phonics knowledge
 - Sound-symbol relations

How classrooms can support emergent literacy

- 📖 Literacy-rich environments
 - Many reading and writing materials
 - Learning centers
 - Printed words
 - Positive support and encouragement from adults
 - Adults model literacy activities

How classrooms can support emergent literacy

- 🗣️ Oral language
 - Frequent use of language
 - Imitation – functional words – reinforcement
- ✍️ Writing development
 - Facilitating emerging skills (scribbling, invented spelling, pictures)
 - Begin to connect writing and reading skills

How classrooms can support emergent literacy

- Knowledge about print: teach and expose children to...
 - Functions of print
 - Words with meaning and purpose for child (e.g., family names, road signs)
 - Forms of print
 - Details about sounds, configurations of letters and words
 - Conventions of print
 - Read left to right, purpose of punctuation

How classrooms can support emergent literacy

- Help children construct meaning from text through:
 - Observing and listening to storybook reading
 - Participating in reading events
 - "book talk"

Literacy Development for Different Groups of Children

- What do we know about literacy and...
 - Children with identified speech and language disabilities?
 - Children from low income families?
 - Hispanic children learning English as a second language?

Research Questions

- How does rate of growth of emergent literacy skills vary among preschool children with and without risk for developing literacy skills?
- What preschool classroom variables are most highly correlated with emergent literacy skill growth?
- How are classroom variables different across children in ECFE, ECSE, Head Start and Spanish-speaking groups?

Participants

	ECFE (N=12)	ECSE* (N=26)	HeadStart (N=12)	Spanish (N=19)
Gender				
Male	58%	62%	42%	68%
Ethnicity				
White	25%	48%	17%	0%
Black	25%	38%	34%	0%
Hispanic	0%	0%	0%	100%

*ECSE represents children with speech/language impairments

Measures

Early Literacy:

- Individual Growth and Development Indicators (IGDIs) (McConnell et al., 1998; 2000)
 - Picture Naming
 - Rhyming
 - Alliteration

Classroom Variables:

- Eco-behavioral System for Complex Assessments of Preschool Environments (ESCAPE) (Greenwood et al., 1997)

Picture Naming

Format

- Present child with photos of common "objects," one at a time, and ask child to name pictures as fast as possible
- 1 minute

Measure

- Total number of pictures named correctly in 1 minute




Rhyming

Format

- "Point to the picture that sounds the same as bees."
- 2 minutes

Measure

- Total number of pictures correctly identified in two minutes




Alliteration

Format

- "Point to the picture that starts with the same sound as rain."
- 2 minutes

Measure

- Total number of pictures correctly identified in two minutes



ESCAPE

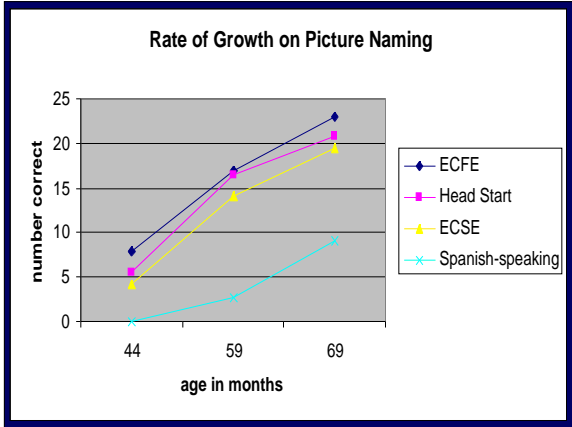
- Two observations of 30 minutes
 - 1 freeplay, 1 structured
- 3 main categories
 - Student Behaviors
 - Teacher Behaviors
 - Classroom Ecology
- Coded in 15 second intervals

ESCAPE Taxonomy

Student Behaviors (15 sec.)	Teacher Behaviors (15 sec.)	Classroom Ecology (2 x 15 sec.)
<ul style="list-style-type: none"> Target behaviors Competing behaviors Verbal behaviors 	<ul style="list-style-type: none"> Teacher definition Teacher behavior Teacher focus 	<ul style="list-style-type: none"> Designated activity Activity initiator Materials Location Grouping Composition

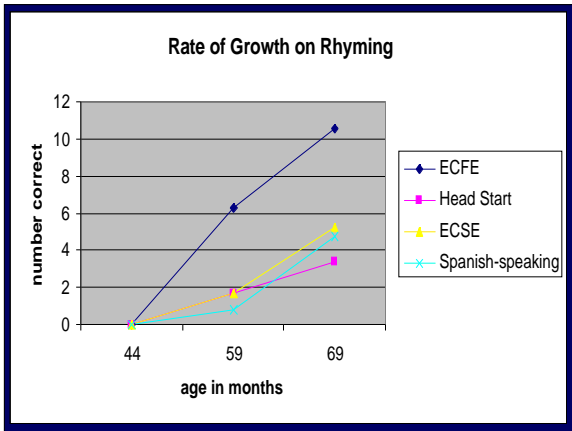
Procedures

- IGDIs administered in fall, winter, spring
 - 1-on-1 outside of classroom
 - 10 minutes testing time
- ESCAPE completed fall, spring
 - Children observed in classroom during teacher-identified freeplay and structured time (e.g., circle) for 30 minutes



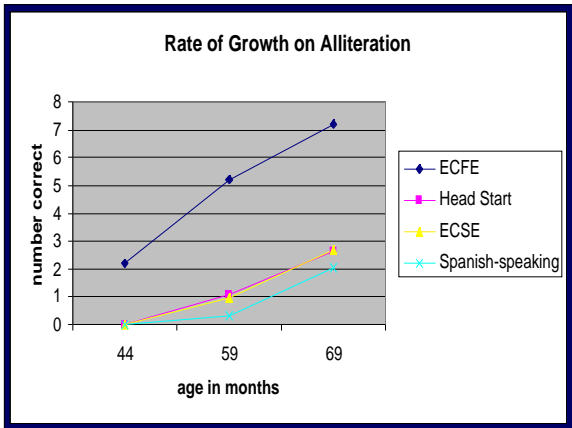
HLM Results: Picture Naming

- Significant difference between mean scores at 59 months for ECFE and Spanish-speaking children
 - ECFE = 16.97
 - Head Start = 16.51
 - ECSE = 14.13
 - Spanish-speaking = 2.64
- Rate of growth significant for all 4 groups between 44 and 69 months; no difference between groups in rate of growth



HLM Results: Rhyming

- Mean scores at 59 months significantly lower for Head Start, ECSE and Spanish-speaking children in comparison to ECFE
 - ECFE = 6.29
 - ECSE = 1.68
 - Head Start = 1.66
 - Spanish-speaking = .79
- Significant rate of growth for all 4 groups
 - Rate of growth for ECFE significantly different from ECSE
 - No difference in rate of growth between ECFE and Spanish-speaking



HLM Results: Alliteration

- Mean scores at 59 months significantly lower for Head Start, ECSE and Spanish-speaking children compared to ECFE
 - ECFE = 5.19
 - Head Start = 1.09
 - ECSE = .94
 - Spanish-speaking = .71
- Rate of growth not significant for any of the groups

Relations Between Rate of Growth and ESCAPE Variables

□ Head Start

- Moderate correlation ($r = .6, p < .05$) between Rhyming growth and Verbal Behavior to Peer
- Moderate correlation ($r = .5, p < .07$) between PN growth and time in Pre-Academic Activities
- Moderate correlation ($r = .5, p < .06$) between PN growth and time with Instructional Materials

Relations Between Rate of Growth and ESCAPE Variables

□ Spanish-speaking children

- Strong correlation ($r = .7, p < .01$) between PN growth and Verbal Behavior to Peer
- Moderate correlation ($r = .6, p < .05$) between PN growth and Verbal Behavior to Teacher

□ ECFE

- No significant relations between IGDI growth and ESCAPE variables

Relations Between Rate of Growth and ESCAPE Variables

□ ECSE

- Moderate correlation ($r = .5, p < .05$) between Alliteration growth and time in Story Activities
- Moderate correlation ($r = .5, p < .05$) between Alliteration growth and time with Instructional Materials

Discussion: Rate of IGDI Growth

- Possible floor effects on Rhyming IGDI and Alliteration IGDI, suggesting they may not be sensitive for use with at-risk (ECSE, ELL, low-income) preschoolers
- High-risk children performing lower at age of kindergarten entrance
 - More support for teachers, families, children *prior to* kindergarten
 - Want groups with lower scores to be growing faster

Discussion: Classroom Variables Related to Emergent Literacy

- New research suggesting different groups of children benefit from different classroom variables
- Further research...
 - Replication with larger groups and move toward intervention programs
 - Evaluate home environments: likely that income, home environments account for variance
 - Benchmark literacy measures: How much growth is enough?
 - Evaluate quality of classroom environments: Where are children spending their time?


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