The Influence of Teacher Characteristics on Child Growth in Early Literacy

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Abstract

Emergent literacy skills developed during preschool are a recognized predictor of reading success in elementary years. These literacy skills develop at varying rates due to child characteristics and ecological factors. Teacher characteristics such as education and experience may also play a role. This descriptive study concentrated on the effect of teacher education and experience on children's growth rates on emergent literacy measures across the prekindergarten school year. Results indicate that preschool teachers' education in ECE and related fields can influence children's rate of growth on Picture Naming and Sound Identification skills.

Introduction

It is a well-known fact that emergent literacy skills developed during preschool years are indicative of future reading success. Furthermore, quality of teacher implementation has been determined to be a factor further affecting school readiness (NELP, 2008). Although some research supports the notion that higher levels of formal teacher education, education in early childhood, and/or years of experience positively influence teacher and classroom quality (Darling-Hammond, 2000; National Institute of Child Health and Human Development Early Child Care Research Network & Duncan, 2003; Mims, S., Scott-Little, C., Lower, J., Cassidy, D., & Hestenes, L., 2008), other studies find these results inconclusive (Early, et al., 2007). Further complicating these findings, considerable variability exists regarding these factors across types of preschool settings (Cunningham, Zibulsky, & Callahan, 2009). The current study, a subset of a large, one-year study that investigated early literacy outcomes of children in a variety of prekindergarten programs across four geographic areas, examines the extent to which teachers' education and years of experience influence prekindergarten children's growth in measures of emergent literacy.

Research Questions

1. Does teacher education level influence children's growth rate on Picture Naming (PN) or Sound Identification (SID) Individual Growth and Development Indicator (IGDI) scores?
2. When comparing teachers with 10 or more years of experience, does teacher education specific to Early Childhood Education or a related field influence children's growth rate on PN or SID IGDI scores?
3. What is the difference in rate of child growth on PN or SID IGDI scores when comparing students with teachers at the two ends of ends of the education spectrum, those who have graduate degrees and those whose teachers have a 2-year degree or less?
4. Does number of years of experience teaching in a preschool setting influence children's growth rate on PN or SID IGDI scores?

Methods

Sample

Participants were recruited at the beginning of the 2009-2010 school year from across four geographic areas, KS/MO, MN, OH, OR. In all, 65 classrooms met inclusionary criteria salient to this study consisting of (1) use of a published curriculum with a documented scope and sequence to teach early literacy skills, and (2) children were in attendance no fewer than 12 hours weekly. The classrooms represented four program types: state-funded Pre-K (31%); Title I (30%); Head Start (24%); Tuition-based (14%). For the purpose of the current study, inclusionary criteria included teachers who fully completed the required teacher demographic information survey and students with at least one wave of IGDI scores completed.

Of teachers in the 65 classrooms recruited for the larger study, 54 were identified as eligible for inclusion in this study. The highest education level among teachers varied widely and included the following: Child's Development Associates, 1.9%; 2-year degree in ECE, 11.1%; 4-year degree in ECE, 48.1%; graduate degree in a related field, 16.7%; graduate degree in ECE, 14.8%; no ECE related education 7.4%. Teachers working in these classrooms had a mean of 10.4 years of experience that ranged from 1 and 32 years.

Methods, continued

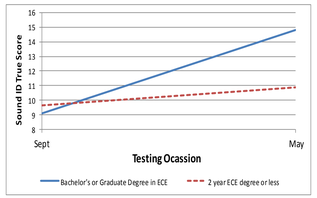
Measurement and procedures

After recruiting participating classrooms, a Teacher Survey was completed by all consenting teachers. All children with parent consent were assessed using a battery of experimental Individual Growth and Development Indicators (IGDI) at three occasions, fall, early spring, and late spring.

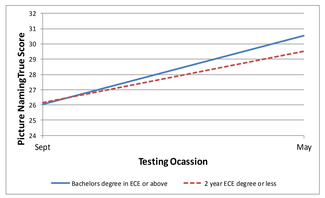
Hierarchical linear modeling (HLM: Singer & Willet, 2003) was used to estimate growth parameters. Month of administration (Level 1) was nested within Children (Level 2), and Children (Level 2) nested within Classroom (Level 3). To look at differences regardless of initial scores, Fall IGDI scores were controlled for.

Results

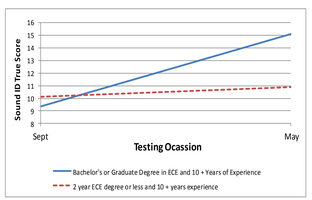
Growth rates of students with teachers who have earned Bachelor's or graduate degrees in ECE and related fields compared to growth rates of students whose teachers have not earned Bachelor's or graduate degrees



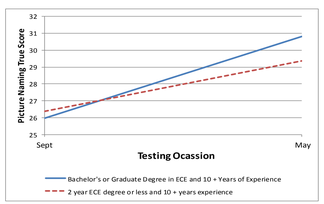
RQ1: Teachers' education, specifically teachers who completed a Bachelor's or graduate degree in ECE or a related field, as compared to those who had not, made a significant difference at the student level for rate of growth for Sound ID (t (959) = 5.254, p < .001) but not for Picture Naming (t (952) = 1.42, p =.156).



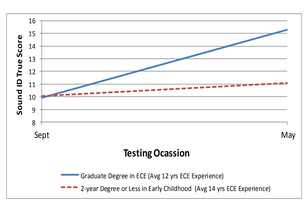
Growth rates of students with teachers who have earned Bachelor's or graduate degrees in ECE and related fields with at least 10 years of experience compared to growth rates of students whose teachers have not earned Bachelor's or graduate degrees and at least 10 years of experience.



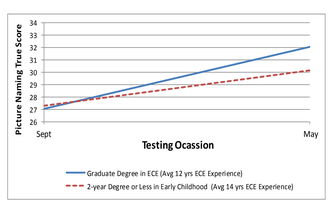
RQ2: Children in classrooms where teachers had at least 10 years' experience and a Bachelor's or graduate degree grew at a faster rate than those whose teachers had 10 or more years of experience and indicated their level of education to be less than a Bachelor's degree. Growth rates were statistically significant both for SID and PN. (Sound ID t (354) = 3.9, p < .001; Picture Naming t (357) = 2.245, p=.025).



Growth rates of children whose teachers have completed graduate degrees in ECE compared to growth rates of children whose teachers have completed 2-year degrees or less in early childhood education.



RQ3: When comparing teachers at the two extremes of the education spectrum, those with graduate degrees in Early Childhood Education and those with a 2-year Associate's degree, a CDA Certificate, or no CDA certificate, we found significant differences in children's growth in both Sound ID (t(274) = 3.829, p<.001) and in Picture Naming (t(274) = 2.633 p<.05).



Discussion

The effect of teachers' characteristics, education and years of experience, on children's growth in the Picture Naming and Sound Identification IGDIs throughout three different occasions were examined.

RQ1. Based on results from this study, it appears that the amount of teacher education may influence children's growth in literacy, particularly in Sound ID. Although holding a 4-year degree made a statistically significant difference in children's growth in Sound ID, it did not influence PN at the same level. While this may be a factor of the specific skill sets required to teach these concepts, additional research is needed to explore causal factors prior to drawing conclusions.

RQ2. When examining classrooms with teachers with 10 or more years experience, growth rates were statistically higher both in Sound ID and in Picture Naming for children in classrooms where teachers held higher levels of education. Children with teachers who had earned Bachelor's or graduate degrees in ECE or related fields had higher scores than those whose teachers had less formal education in ECE. Of some concern is the knowledge that when comparing only teacher education, there was no statistically significant difference in children's growth rate in PN. However, when combining teacher education plus experience, both literacy measures demonstrated statistically significant differences, potentially implying that in some way, the combination of teachers' years of experience and higher education is further helping children's growth rates on PN measures. While more research is needed to better explain this finding, implementation of professional development opportunities specific to teachers' with lower levels of education may help decrease the gap between the groups.

RQ3. At the end of the prekindergarten school year, Sound ID scores for children with teachers holding graduate degrees were, an average of 4.2 points higher than scores for children with teachers who had earned 2-year Associate's degrees or less. When comparing children's growth rates in Picture Naming, those with teachers who had earned graduate degrees had scores an average of 1.9 points higher than those with teachers who had an Associate's degrees, a CDA, or no CDA. These results clearly indicate that teacher education plays a role in children's rate of growth in literacy. However, factors influencing children's growth rates encompass a complex set of variables and further research is needed to determine how, why, and where specific differences occur across children's literacy outcomes.

RQ4. When comparing only teachers' years of experience teaching in early childhood education classroom setting, no statistically significant difference was found at the student level for rate of growth in either Sound ID (p > .05) or Picture Naming (p>.05). This appears to indicate that teaching experience alone does not affect children's growth in literacy. It may be possible to consider that experience does not enhance teachers' skills in SID and PN over time enabling it to reach the same level of proficiency as teachers who have 4-year or graduate degrees in ECE.

In conclusion, study results indicate that preschool teachers' education in ECE and related fields can influence children's rate of growth on measures of literacy, specifically SID and PN. Holding a Bachelor's degree appears to improve children's rate of growth on some literacy outcomes. Teachers' education at the 4-year degree level in combination with experience made a difference on all literacy outcomes measured in this study. Further, completing a graduate degree in ECE or a related field also made a difference in improving children's rate of growth in literacy. However, experience alone does not appear to be sufficient to make a difference in the rate of children's growth on measured literacy outcomes.

We believe it would be worthwhile to collaborate with teachers with education plus experience to learn from them, and allow them to share their knowledge with the teachers with less experience/education.

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