Bidirectional Relations Between Phonological Awareness and Letter Knowledge in Preschool Revisited: A Growth Curve Analysis of the Relation Between Two Code-Related Skills

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In this study, dual-process, latent growth models were used to examine patterns of bidirectional relations between letter knowledge and phonological awareness during preschool in a sample of 358 children. Letter-name knowledge and phonological awareness were bidirectionally related, where the initial level of each uniquely predicted growth in the other.

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In this study, dual-process, latent growth models were used to examine patterns of bidirectional relations between letter knowledge and phonological awareness during preschool in a sample of 358 children. Growth models were used to quantify the unique longitudinal relations between the initial level of each skill and growth in the other skill during the preschool year. Letter-name knowledge and phonological awareness were bidirectionally related, where the initial level of each uniquely predicted growth in the other. These findings extend the evidence of the relationship between letter knowledge and phonological awareness to supra-phonemic tasks, indicating that this bidirectional relation begins at an earlier point in the development of phonological awareness than previously reported.

- Proficient reading skill is a key determinant of quality of life.
- However, in 2013, only 34% of 4^{th} grade students and 27% of 8^{th} grade students demonstrated proficient reading skills.
- The developmental trajectory toward the level of reading skill a child will ultimately attain appears to be determined during the first years of formal education.
- Phonological awareness is one of the strongest predictors of reading skill.
- Phonological awareness appears to emerge in an ordered developmental progression.
- First, a rudimentary awareness of sounds within words is demonstrated by the ability to detect and manipulate larger units of sound.
- Next, a more sophisticated awareness of the sounds that compose spoken language is demonstrated by the ability to detect and manipulate smaller units of sound such as phonemes.
- Letter knowledge appears to be related to the

development of phonological awareness.
- Vocabulary knowledge appears to influence the development of phonological awareness.

Study

The current study was designed to examine a) the possible bidirectional relation between letter knowledge and earlier emerging facets of phonological awareness, and b) the relationship between vocabulary size and growth in phonological awareness.

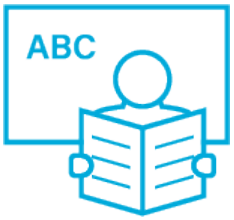
Hypotheses:

1. *Children with higher initial levels of letter knowledge were expected to experience more growth in phonological awareness throughout the preschool year than that experienced by children with lower initial levels of letter knowledge.*
2. *Children with higher initial levels of phonological awareness were expected to experience more growth in letter knowledge throughout the preschool year than that experienced by children with lower initial levels of phonological awareness.*
3. *Children with higher levels of initial vocabulary were expected to experience more growth in phonological awareness throughout the preschool year than that experienced by children with lower initial levels of vocabulary.*

Participants were 358 preschool children who were approximately 4 years of age at the start of the study.

Findings

- There were significant inter-individual differences for all outcomes at the beginning of the preschool year.
- There were significant inter-individual differences in the rate of growth for all four phonological awareness factors and letter-name knowledge.
- Vocabulary was correlated with initial status for all four phonological awareness outcomes but was unrelated to growth in any outcome.
- Children who started preschool with higher levels of blending, elision, letter-name knowledge, and letter-sound knowledge tended to experience less growth in the same skill during the preschool year than children who started the year with lower levels of these skills.
- For all phonological awareness outcomes (except rhyme), children with higher initial levels of phonological awareness experienced less growth in this factor throughout the preschool year than children with lower initial levels of phonological awareness.
- For all phonological awareness outcomes (except elision), older children experienced more growth in than younger children.
- Children with higher initial levels of letter-name knowledge experienced faster growth in phonological awareness throughout the preschool year than children with lower initial levels of letter-name knowledge.
- Higher initial letter-name knowledge was associated with slower growth in the same skill.
- Growth in letter-name knowledge was uniquely predicted by higher initial composite phonological awareness.



Conclusions and implications

The results of this study demonstrated that growth in two important code-related skills—phonological awareness and letter knowledge—was partially dependent on the initial level of the other skill. There were bidirectional predictive relations between the initial status of each skill and growth of the other skill throughout the preschool year. Children with initially more letter-name knowledge experienced more growth in phonological awareness, and children with initially more phonological awareness experienced more growth in letter-name knowledge.