Using Informational Text and Interactive Reading with Evidenced-Based Teaching Strategies to Support Science Vocabulary in Preschool-Aged Children

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Rationale

• Research in reading and language demonstrates growth in early literacy skills emerges during the preschool years (Connor, Morrison, & Slominski, 2006; Gettinger & Stoiber, 2007; NICHD, 2004) and that there is a significant link between language, vocabulary, and later reading success (National Reading Panel, 2000).

• Shared book reading is a frequently cited practice used to enhance emergent literacy competencies in preschoolers (Leung, 2008) and is recommended by the American Speech-Language-Hearing Association as an intervention to improve emergent literacy skills of children who have communicative delays or impairments (2001).

• The use of both direct and indirect vocabulary teaching strategies, including repetition and multiple exposures of target words, increases word learning during shared book reading (Armbruster, Lehr, & Osborn, 2003; NRP, 2000).

• Few studies have used non-fiction or informational texts to support vocabulary growth in preschoolers (Leung, 2008). Research Questions:

1) Does a shared storybook procedure that incorporates specific before, during and after reading interactive strategies increase science vocabulary knowledge of three and four-year old children with or at risk for language delays?

2) Does the shared storybook procedure increase preschoolers’ ability to inference targeted science words?

Method

• Participants

Subjects were six 36-48 month old African American children attending an early care and education program serving families in a lower income neighborhood.

• Design and Data Collection

• A single subject, multiple probe study with replication across books and participants was conducted.

• Books and target words were chosen through a review by a panel of early childhood educators. Prior to, each week and at the end of the six week intervention, each child’s knowledge of the target words was assessed using a teacher-created assessment measure of the 30 science words targeted in the study.

• Receptive word knowledge and inferencing abilities were measured by asking the child to point to the stated word on day 4 of the intervention.

• Expressive word knowledge and inferencing abilities were measured by asking the child to say the target word on day 5 of the intervention.

• Reliability and fidelity were calculated by graduate students reviewing videotapes of the sessions.

• Social validity was completed at the end of the study.

Intervention

• Pairs of children joined the researcher in an adjoining classroom for the reading intervention.

• Each week, a new book was introduced using the specific pre, during and after story procedures.

• Setting a goal

• “Picture Walk” or preview

• Activating prior knowledge

• Make predictions

• Ask questions (lower level, higher level)

• Construct, revise, and question the children’s interpretation

• Address any misunderstandings

• Address predictions again

• Summarize the text with the children

• Ask questions

Results

• Variability existed across children and across words at pretest and after each book was completed.

• Overall, children’s vocabulary knowledge on the targeted words increased after the intervention for each book.

• Children’s knowledge of inferred embedded words was evident receptively but not when tested expressively.

Implications

• This investigation suggests using interactive book reading and evidenced-based teaching strategies to enhance science word learning in three and four-year old children may be an effective strategy to enhance young children’s developing language.

• Interactive book reading intervention had a positive influence on preschooler’s science word knowledge.

• The before, during and after reading evidence-based strategies were effective as a package to increase receptive word knowledge but not expressive.

• Teachers evaluated vocabulary learning and the teaching procedure as beneficial for the students who participated in the study.

• Informational text within an interactive story book context appears to encourage science vocabulary growth.

• Individual strategies or different combinations than those used in this study should be researched for efficiency of instruction.

• Future research should investigate early care and education teachers and practitioners as interventionists.

• Follow-up studies should include a pretest of the children’s expressive abilities and specific strategies focused on expressive language development.

References


• Leung, C. (2008). Preschoolers acquisition of scientific vocabulary through repeated real-world events, retellings, and hands-on science activities. Reading Psychology, 29, 165-193. DOI: 10.1080/02702659809456499
