

Teaching Expository Comprehension Skills in Early Childhood Classrooms

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Purpose: This pilot project implemented and evaluated a theme-based unit designed to teach expository comprehension skills to young children in four preschool classrooms. **Method:** The program and the unit were collaborative efforts of speech-language pathologists (SLPs) and early childhood educators. Within topically related units, 71 children ages 4:1 to 5:0 engaged in first-hand experiences related to narrative texts, adapted expository texts, and mapping tasks within large group, small group, and class routine contexts. Data sources consisted of expository compare/contrast and problem/solution tasks, classroom observations, teacher and parent interviews, and parent surveys. **Results:** During instruction most of the 71 participating children made gains in both the compare/contrast and problem/solution tasks. They spontaneously applied problem/solution strategies in noninstructional settings. Teachers and parents reported that children were motivated by and engaged in the playful but systematic instruction. **Discussion:** Although there were limitations in the study, results suggest that preschool children are able to benefit from expository instruction that is explicit, purposeful, and focused on topics of natural interest to young children. The study should be replicated with refined measures and a more diverse population. **Key words:** *Collaborative service delivery, early literacy, engagement, explicit instruction, expository instruction, expository comprehension, expository concepts, integrated instruction, mapping of expository texts, preschool instruction, theme-based instruction*

COMPREHENSION of informational texts and content learning are vital to children's eventual academic success. If activities are relevant, interesting, and engaging, young children are capable of beginning to develop some of the mental processes and thinking patterns that will influence future comprehension and learning. The results of studies have led researchers to conclude that young children are capable of comprehending expository texts and can benefit from expo-

sure to and instruction using them (Caswell & Duke, 1998; Duke, 2000; Duke & Kays, 1998; Moss, 1997; Pappas, 1993). If they do not feel hurried or pressured and if they receive individualized scaffolding and support, children with language deficits and disabilities can also participate and benefit from the early intervention. Thus expository text instruction should have an important presence in early childhood education programs (Duke, 2006).

To explore implementation of expository comprehension instruction with young children, we piloted an instructional program consisting of developmentally appropriate activities targeted to develop early literacy skills in four early childhood classrooms. This article presents relevant literature and gives methods, results, and discussion of the pilot study.

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REVIEW OF LITERATURE

Importance of providing early expository instruction

Researchers and educators are aware of the importance of early instruction preparing young children for expository texts (Duke, 2006). Good comprehension skills for expository texts are vital to learning and contribute to success in school (Pearson & Duke, 2002; Seidenberg, 1989). But preparation does not need to wait until expository text comprehension becomes critical. Current studies indicate that young children are capable of learning from expository texts (Duke, 2000; Pearson & Duke, 2002; Williams, Hall, & Lauer, 2004) and that they benefit from the direct teaching of expository text organization (compare/contrast, problem/solution, sequence, description) (Hall, Sabey, & McClellan, 2005; Williams, Hall, Lauer, Stafford, DeSisto, & deCani, 2005; Williams et al., 2004; Williams, Stafford, Lauer, Hall, & Pollini, 2009).

Preschool children who do not obtain adequate preliteracy skills, including text comprehension skills, are at risk for future literacy problems (Justice, Invernizzi, & Meier, 2002; Snow, Burns, & Griffin, 1998). Support for preparing children in preschool classrooms with some skills and dispositions for comprehending expository texts has a solid rationale: to capitalize on student interests, to develop language skills and capabilities, and to build further cognitive strengths and abilities.

Expository instruction in preschool classrooms

Although research supports children's capability for comprehending and learning from expository texts (Duke, 2000; Hall et al., 2005; Pearson & Duke, 2002; Teale, 2003; Williams et al., 2004; Williams et al., 2005; Williams et al., 2009) and of developing enhanced abilities through using these texts, only a few studies have addressed expository comprehension in the preschool population. A case study by Maduram (2000) followed a child

from age 3:9 to age 6:2 using multiple expository texts of gradually increasing difficulty. During the preschool phase of the study, the child responded to the books by asking questions, engaging in conversations, seeking to understand facts, and using informational book themes during play and conversation.

Although expository texts focused on informational content are not often introduced in preschool classrooms, they are informally encountered (Pentimonti, Zucker, & Kaderavek, 2010). Preschool children are exposed often to simple expository texts in the form of classroom environmental print: e.g., job charts, labels for locating or putting away materials, and signs with class rules or procedures like hand washing.

More formal encounters with expository texts in many forms also occur in early childhood classrooms. Oral expository instruction takes place as teachers diverge from narrative stories to expand and elaborate background knowledge. Expository information is also common as part of thematic units: Topics such as community workers, animals, and life in the sea are centered in informational content. Picture books about animals are often found in the classroom bookrack or "library" corner. Accounts of personal experiences are often used to convey some type of factual information: experience with a policeman or postman, responsibility for taking care of an animal. Teachers give oral explanations to convey a variety of information (e.g., why the children must walk to the bus with an adult, where milk comes from, etc.). Other informational or expository texts that young children encounter take the form of simple directions or procedures: a recipe, instructions for a game or craft.

However, early childhood educators are beginning to suspect that children are not encountering written expository texts frequently enough. In examining books used in classrooms, Moss and Newton (1998, as cited in Pentimonti et al., 2010) found that in preschool 82% of the texts read aloud to children were narratives, 13% were mixed narrative and expository, and only 4% were

expository. In a nationwide survey, Moss (1997) found that none of the most frequently read books on any grade level were nonfiction. Going to the teachers themselves for clarification, Davinroy and Hiebert (1994) learned that teachers of young children seldom used expository books with their students. Teachers claimed that they did not know how to alter these texts or how to support young children's comprehension of them. Accumulating evidence now suggests that this is a misconception.

Even preschool children can benefit from learning basic structural patterns such as compare/contrast (Dreher & Gray, 2009). Learning expository comprehension skills, such as the ability to recognize and reason with text structures, improves their comprehension of factual materials (Weaver & Kintch, 1991). Expository skills, like other literacy skills and capabilities, develop as a result of guided encounters with relevant texts. Substantial experience with a genre is necessary if knowledge of that genre is to develop (Duke, 2000; Dreher & Gray, 2009), including opportunities for reading, writing, and discussion (Pearson & Duke, 2002).

Thus deliberate exposure and explicit instruction are necessary; they should begin in preschool and be integrated into kindergarten classrooms.

Because there is a recognized need for expository preschool instruction, researchers and educators are suggesting ideas, strategies, and programs for how to provide this instruction (e.g., Moss, Leone, & Dipillo, 1997). These instructional strategies rely on or are similar to those that have been shown to be effective with intermediate grade children; however adaptations have been made to make tasks age appropriate, and the interventions need to be evaluated for their efficacy.

Collaboration between speech-language pathologists and classroom teachers

With the emphasis on education for *all* students generated the by *No Child Left Behind* legislation (2001), more children with language impairment and other

disabilities are spending more time in inclusive classrooms and less time in pull-out programs; and more SLPs are going into those classrooms to assist them during class (Ritzman, Sanger, & Coufal, 2006). Thus increased collaboration—including positive communication and sharing—between teachers and SLPs is critical (Sanger, Hux, & Griess, 1995). In a policy document, the American Speech-Language-Hearing Association (ASHA; 2001) states that for literacy, the responsibilities and roles of SLPs and classroom teachers are “essentially collaborative in nature.”

One of the central features of the current study was collaboration. The program studied was designed collaboratively by an experienced SLP and an early childhood teacher educator. Then it was implemented into a university laboratory preschool jointly by advanced candidates preparing for careers as preschool teachers or SLPs. In this way, a strong collaborative relationship was developed by the SLP and early childhood teacher educator and then modeled for the preservice teacher candidates and SLPs.

METHOD

Purpose

This article describes implementation and results of a 16-week pilot project designed to explicitly but playfully teach expository skills to young children in preschool classrooms. A pre-post design without controls was used to explore the feasibility of the intervention. We acknowledge that this nonexperimental design has limitations in its ability to show efficacy of the intervention approach, but the work was designed primarily to illustrate ways in which SLPs and early childhood educators can work together in planning and carrying out instruction. The two purposes of the project were (a) to evaluate effectiveness of instructional practices involved in the theme-based unit and (b) to increase teachers' awareness of how systematic and explicit instruction can be made engaging and relevant for young children. The second aim was chosen

because systematic literacy-focused instruction had not been used previously in this preschool setting, and the work was viewed as a collaborative interdisciplinary personnel preparation activity.

Setting and participants

The theme-based instructional unit was implemented as supplemental teaching in four preschool classes with two teachers, each of whom was teaching both morning and afternoon classes. The classes were part of a laboratory preschool program affiliated with a private university.

Teachers and students

Both of the classroom teachers held a bachelor's degree and had more than 10 years of teaching experience. Both were well trained and experienced in developmentally appropriate practice. Their approach to literacy instruction had consisted of stimulating letter knowledge and concepts of print skills within language- and print-rich environments, but neither had followed a specific literacy program or had targeted language comprehension, particularly with expository text.

A total of 80 children participated in the four classrooms (approximately 20 in each), and 71 of those children were enrolled in our pilot study. The children were between the ages of 4:1 and 5:0 years, with a mean age of 4:7. All were from middle class families and spoke English as their primary language. According to the information provided by the classroom teachers and observations of an experienced SLP, one child was being monitored for a developmental delay, and eight children had noticeable phonological production errors. All children who progress slowly in early language and literacy development are not considered to have a disorder, and prevention practices can sometimes avert or lessen the severity of a disability (Justice, 2006). Thus early literacy and language comprehension tasks were used to further discern students' entering language/literacy performance levels and needs: Four

children performed poorly on the PALS (Phonological Awareness Literacy Screening; Invernizzi, Sullivan, & Meier, 2001), earning scores less than 5 on the rhyming and beginning sound assessments. These four children also performed poorly (scoring less than 5) on the two story comprehension tasks (question answering and text retelling).

Classroom setting

The instructional unit was conducted at the laboratory preschool over a 16-week period, with 2 weeks spent on each of eight subunits. Each week consisted of 4 days of instruction (M-Th), with the teachers allocating certain times within the week for implementation of the supplemental unit by university student instructors (i.e., preservice SLPs and early childhood teacher candidates). The project directors considered the use of multiple classroom contexts to be important to implementation of a wide variety of activities (Culatta & Hall, 2006), so the teachers gave permission to the project instructors to access large and small group instruction time, as well as classroom routines (transitions and snack). During each week, class times available for the unit included two fifteen-minute large group sessions, daily small group centers, two transitions from large group to centers, one small group literacy rotation, and two snack and transition times.

Unit of instruction

A 16-week unit entitled *People and Animals Living Together* dealt with various relationships between people and animals. Within the broad unit theme were eight 2-week subunits dealing with some ways in which people and animals impact each other. The subunit themes consisted of such topics as animals helping people, people helping animals, animals living in the right places, people giving animals what they need, animals and people fulfilling their needs to sleep and eat, and people knowing which animals make good pets.

Expository texts and structures were included throughout the topics and subtopics.

For example, the unit on the right places to live contrasted places that are good for animals and/or people to live and addressed how a person's or animal's living situation has to meet particular needs. Texts and lessons dealt with problem solving (e.g., finding appropriate living situations for some animals) and comparisons (e.g., discerning similarities and differences in animals' and people's needs).

Unit planning and implementation

As the unit was to be conducted as supplemental instruction in university laboratory preschool classrooms by preservice SLPs and early childhood teacher candidates, planning and implementation were collaborative across disciplines and professions (see ASHA, 2001; Bauer, Iyer, Boon, & Fore, 2010; Ritzman et al., 2006; Sanger et al., 1995). The unit was initially coplanned by two university professors/researchers, one in speech-language pathology and one in early childhood education (the first two authors).

After the unit was planned, it was approved by the classroom teachers and later refined with input from the university student instructors. The student instructors and university faculty met periodically to further plan the unit and refine the lessons. The classroom teachers set up mechanisms for the classroom delivery and shared in supervision of the student instructors. Additionally, the teachers participated in evaluating the program and in planning a parent literacy night during which the program was shared with the children's parents. The teachers were present during all unit instructional activities and provided feedback when requested.

Instructional activities

The unit on people and animals living together drew upon several different types of instructional activities. These activities were implemented to support children's understanding of expository content; they included relating text to children's prior knowledge and experience, dramatizing texts, telling personal accounts, teaching key concepts

and vocabulary explicitly, presenting expository texts aloud, mapping conceptual relationships, and providing concrete hands-on experiences.

Relating to prior knowledge and experience

An important aspect of the early expository unit was the introduction to new content. The preservice teachers and SLPs introduced the topics within the subunits in ways that related content to the children's prior knowledge and experience and added emotional appeal. As Barnes (2008) has stressed, the child will make sense of the lessons only by using the new ideas, experiences, or ways of thinking in order to reorganize his or her existing pictures of the world, and how it can be acted upon. This is partly a matter of relating the new ideas to what a learner already knows. It is only the learner who can bring the new information, procedures, or ways of understanding to bear upon existing ideas, expectations, and ways of thinking and acting.

When those connections and applications are not made, learning is not meaningful for the child, and knowledge temporarily gained is soon forgotten. In the pilot study, teachers and SLPs were careful to bring out students' prior knowledge and experiences and to facilitate this process of connection. Teachers could do this for large or small groups of students in the general pedagogical setting. For example, the instructor might relate new content from the unit to children's prior knowledge and experiences by any of the following:

1. Relating targeted information to feelings and experiences: e.g., being frightened by the unexpected appearance of a raccoon, skunk, or mouse.
2. Bringing in a prop or contriving an experience to build shared knowledge: e.g., showing the children a nest that an animal made in a person's home or an object chewed by a mouse that crept into a person's home.
3. Asking the children questions to bring out prior knowledge or experiences: e.g., "Have you ever been in a place where

there were animals you hadn't seen before (national park, camp site, etc.)?" "Has anyone had an animal make a home in your garage or attic?"

Through such experiences, children were able to relate more personally to the unit content, and the instructor could help make the new content more relevant and meaningful.

Dramatizing texts

Preschool children have had varying amounts of experience listening to texts read aloud, and young children with language difficulties tend to have deficits in attention and listening skills (Brinton & Fujiki, 1999; Finneran, Francis, & Leonard, 2009; Ross, Neely, & Baggs, 2007). Therefore, the teachers and SLPs involved in the study would often use dramatic storytelling and audience participation techniques with both expository and content-relevant narratives to get children involved in unit topics (Culatta & Hall, 2006).

Although the children were being exposed to relevant expository texts, they also encountered and enacted narratives that fit the theme and provided opportunities to discuss and map expository content. For example, in the subunit titled "Finding the Right Place to Live," the teacher told the story from the book *Mouse Mess* (Riley, 1997), a story about a mouse that lives under the stairs in a family's house and comes into the kitchen during the night and makes a mess with the food. The narrative was told with periodic explanations, comments, and dramatizations. The instructor used gestures, actions, intonation, facial expressions and props to illustrate the story. He also gave children active participatory roles to play during the dramatic telling (e.g., stretching and yawning when the mouse wakes up) and opportunities to act on simple props (e.g., a toy mouse, various food containers or pretend foods) (see McGee & Richgels, 2003).

To prepare the children to work with compare/contrast structures, the teacher would occasionally make comments or ask

questions: "Can a real mouse actually live in a hidden place in your house?" "Does a real mouse have pictures and signs on his wall?" "Does a real mouse sleep in a fancy box?" "Can a real mouse get into food?" "Does a real mouse play with food like this?"

Telling personal experiences

As part of the unit, instructors gave personal accounts that fit within the targeted theme. These were real experiences with animals that had happened to people the instructors and/or the children knew. Such stories not only catch students' attention, but also help them learn to "listen, concentrate, and follow event-structured material" (Jalongo, 2000, p. 200) in a nonfiction context. For example, in discussing *Mouse Mess* and describing what real mice need in order to live, the teacher related an experience in which a real mouse had made a nest in a person's house. The children participated in this personal experience narrative by retelling, answering questions, and filling in cloze or sentence completion prompts—enhancing their ability to extract information from experience.

Teaching key concepts and vocabulary explicitly

Developing "literate" vocabulary is vital in children's preparation to deal with expository texts; although a few picture books may be written in the everyday language of the home and playground, informational materials usually are not. Children need to begin encountering "book language" early so they are ready to handle it as it gradually becomes the medium in which they are expected to learn and communicate as they progress through school. An examination of children's books showed 50% more unusual words than either prime-time television or most conversation of adults (Wallach & Butler, 1994). Words that are not high frequency in children's lives must be explicitly taught.

In the project on people and animals living together, activities were created to explicitly teach words relating to the compare/contrast and problem/solution expository structures

(*compare, alike, similar, different, etc.*) and to the content being conveyed (e.g., pet vs. wild animal, or wild vs. tame animal) in the subunits.

To teach vocabulary explicitly, teachers and SLPs provided children with multiple clear examples of each target word and included child-friendly oral definitions and explanations, sometimes pairing a word with a common synonym and providing verbal and physical examples (Beck, McKeown & Kucan, 2002). The instructor would relate the target word to the children's experiences in order to contextualize the word meanings (Beck et al., 2002). Often the instructor would give examples that involved role play or demonstration (e.g., spilled water, ripped paper). For example, an instructor taught the word *alike* by bringing in common things for the children to compare during a role play in which he wore a boot on one foot and a shoe on the other; packed a bag with sets of two items that were alike or different in certain ways; and commented on how items in the sets were either *alike* or *not alike*. Instructors sometimes contrasted examples of word meaning with clear nonexamples or pointed out actions or attempts that wouldn't be solutions to particular problems.

Words taught in the unit included *real* vs. *pretend*, *need* vs. *want*, *belong*, and *respect*. Because the word *solution* might have been a difficult concept for some of the young children, it was always combined with simpler words and an explanation. The instructor explained the word *problem* as "when something goes wrong or breaks—something you didn't want to happen." The term *solution* was taught with a synonymous phrase: "how to fix the problem."

Presenting expository texts aloud

In preschool classrooms, children with and without language difficulties need scaffolding for expository texts. When expository texts are presented to young children, instructors should avoid simply reading them as written, but should discuss and elaborate them

to make them more accessible to the children (Price, van Kleeck, & Huberty, 2009). Thus during the pilot study written texts were told rather than read, which enabled simplifications, modifications, and elaborations during presentation. While telling and discussing the texts, the instructor would supply background information and fill in any important implied or assumed information. The instructors would also show the children pictures in the expository texts and talk about the content, making adjustments yet still enabling children to associate the information as having been conveyed in written form.

Expository texts used in this project were picture books that provided heavy contextual support. When appropriate, the teachers presented the expository information in either problem/solution or compare/contrast structure, since these were the expository organizations emphasized throughout the unit. The instructor would state the structure in an introduction (e.g., "This book shows different kinds of horses, and we'll see how they are alike and how they are different"). While presenting the text, the teacher or SLP would emphasize the underlying conceptual (organizational) relationship: "Now that really is different, isn't it!"

Mapping conceptual relationships

Information should not be presented in unrelated pieces; all pieces should fit together in a logical, connected framework. Helping students represent texts visually is a common and effective way to help them see relationships among main ideas in expository texts (Armbruster, Anderson, & Ostertag, 1987; McGee & Richgels, 1985). When students learn the patterns common to expository texts, they can create maps or graphs that make it possible for them to organize and remember factual content. Additionally, maps and graphs provide a context for decontextualized material and help them in expressing their knowledge (Wallach & Butler, 1994).

In the unit on people and animals living together, children were given opportunities



Figure 1. Illustration of the mapping of the compare/contrast structure using concrete objects and pictures to represent information.

to map the two targeted structures (compare/contrast and problem/solution) once or twice in each subunit. Maps or graphic representations were created from contrasts between make believe and factual information, firsthand experiences solving problems, and expository texts told and discussed. Instructors mapped, highlighted, and discussed these structures in very simple ways to help children become familiar with two important ways in which expository information is organized.

Compare/contrast texts were represented using a simple matrix with columns representing the items being compared. Props or pictures were placed at the top to serve as labels for the items, and rows represented the dimensions or features on which the items were being compared (see Figure 1). For example, following the *Mouse Mess* story (Riley, 1997) and a discussion of how real mice live, the instructor guided the children in charting a comparison between people and mice. A two-column poster was placed on the floor in the middle of a full-class circle; at the top of one column was a picture of a person, and at the top of the other was a picture of a mouse. Each of the rows was designated to represent different characteristics being compared:

what they eat, where they sleep, how they keep warm, and how they move around. Pictures or objects were used to represent how people live and how mice live. The teacher or SLP would place an object in a cell and explain what it represented. (“This is a nest. Mice live in nests.”) Students would then select other items to put on the chart and decide where to place them. The teacher would respond with comments stressing key words like *alike* and *different*.

Children were also supported in graphically representing problem/solution relationships. During the subunit on animals needing the right kind of place to live, an SLP told a personal story about her son’s pet hamster who did not like his cage and escaped from it because it did not fit his needs. The instructor told and illustrated the story, then supported the children in mapping the experience. The instructor set out a chart with two columns, one labeled at the top with a frowny face for the problems and the second with a smiley face for the solutions. The instructor modeled how to represent the problems and solutions on a chart by putting pictures or objects to represent each problem and solution in the appropriate cells of the chart.

The SLP and the children went through a sequence of problems described in the personal narrative and solutions that had varying degrees of failure or success. After creating the chart, the instructor reviewed it with the children, “talking through” it and emphasizing the problem/solution relationships. Retelling a text from a graphic organizer permits the children to organize the information linguistically, differentiating between main topics (i.e., problem, solution) and the events in the texts that are the examples or supportive details of those higher-level categories (Meyer, Brandt, & Bluth, 1980). For the preschool children, retelling a text from a graphic representation with adult support became a joint coconstruction rather than an independent retelling, as the children were given turns to select options from the picture-choices or fill in the supportive details, and the instructor modeled and involved the children in the

process of telling from the organizer (Piccolo, 1987).

Providing concrete hands-on experiences

In supporting children's expository comprehension, teachers and SLPs need to relate concrete experiences to the abstract and remote factual information to which children are being exposed (Cummins, 1984), engaging them in the content or permitting them to explore the content and extend their knowledge. Thus the unit plans for the preschool pilot study included presenting information in the presence of contextualized experiences related to the thematic content.

An example of one of these concrete experiences developed from the problem/solution personal text concerning the hamster that did not like his cage and managed to escape from it. The instructors arranged for the children to work in small groups to design a cage that would meet the hamster's needs. As the groups designed their hamster cages, the instructors responded to and elaborated their ideas, extended the information, and related it to the targeted unit content: the importance of matching an animal's living environment to its needs.

Engaging in supported conversations

Purposely orchestrated instructional conversations (IC) were an important aspect of this study because of their importance in scaffolding both group and individual knowledge, skills, and engagement. Ketch (2005) advised teachers, "Conversation helps individuals make sense of their world. It helps students sort out their ideas of the world and begin to understand how they fit into it. Used as a connection to cognitive strategies, conversation fosters comprehension acquisition" (p. 8). In a preschool classroom, a wide variety of children with diverse experiences are struggling to make sense of a variety of different "worlds"; all of them need help. Children whose conversation is more difficult because of language deficits have particular

problems in obtaining turns during conversations and in both asking for and giving clarification (Brinton, Fujiki, & Sonnenberg, 1988). Language production rates for children with language delays and disabilities have been shown to vary with classroom contexts (Peets, 2009). Teachers at the lab preschool made a variety of contexts available for the instruction so that conversations could be initiated and orchestrated to meet student strengths and needs.

The Center for Research on Education, Diversity and Excellence (2002) has recommended that "In instructional conversation (IC), the teacher listens carefully, makes guesses about intended meaning, [and] adjusts responses to assist students' efforts" (np); these same processes are relevant whether in graduate seminars or among toddlers. The instructors in this study were trained to elaborate ideas and highlight the compare/contrast or problem/solution structural relationship the children encountered during different activities—with redundancy and reteaching built into the process.

Assessment tasks and data collection

Comparable pre-post assessment tasks were used to examine students' comprehension of expository texts by obtaining data on their ability to map and recall orally presented problem/solution and compare/contrast texts (see Hall, Markham, & Culatta, 2006 for illustration). Each child was administered two expository comprehension tasks: one using a compare/contrast text and the other using a problem/solution text. Both tasks were administered during the same session.

In the compare/contrast task, the students were told how two animals were the same and different based on three attributes (what they eat, where they live, and what they look like). While telling the compare/contrast text, the task administrator placed concrete props on a graphic organizer (matrix) to highlight the similarities and differences between the two animals. After the text was read, the props were removed and the children were asked to retell a puppet what they learned from the

text. Following the unsupported retell, the children were asked to again recall what they learned from the text by placing the props in the appropriate cells on the graphic organizer (matrix) to illustrate the ways in which the animals were the same and different. As students retold the text, they were offered a general prompt (“Is there anything else?”) to ensure they recalled as much information as they could.

In the problem/solution task, the children were told a personal account where the main character had a series of problems to solve. When the account was told, the task administrator used concrete props to highlight the problems and solutions in the text. As in the compare/contrast task, after the personal account was told the props were removed and the children were asked to retell a puppet what they learned from the text. The props were then reintroduced, and the child was asked to retell the account by placing the props in the appropriate column of the t-chart to highlight the problems and solutions. During this task, the students were also given additional support in the form of general, open-ended prompts to encourage them to recall the problems and solutions in the story (“What is one problem ___ had?” or “What was the solution to that problem?” or “How did ___ fix (or solve) that problem?”). However, these prompts were more specific than the prompt (“Is there anything else?”) that was used in the compare/contrast task.

Inter-rater reliability

Two teams of scorers scored all of the pre- and posttests for both classrooms. The first team, consisting of three graduate students, scored the compare/contrast pre- and posttest tasks and the problem/solution pretest task. The second team of scorers, made up of the first and second authors, scored the posttest problem/solution task. Prior to scoring, both teams created scoring guidelines for the tasks. After the scoring guide was complete, each member of the respective teams independently scored 10% of the protocols to establish inter-rater reliability. Reliability was be-

low 90% for some of the items scored by the first team of scorers. Therefore, they discussed those items and came to a consensus. The team then independently scored another 10% of the pre- and posttests and inter-rater reliability was 90% or better for all of the tasks. For the second team of scorers, reliability was greater than 90% on their first attempt.

Scoring

On the compare/contrast task, students received a point for each prop that was placed in the correct cell of the matrix and a point for each comparison from the text that they verbalized. Each verbalized comparison was counted as correct only if the student signaled the comparison through structural organization (comparison of same characteristic—what they eat, where they live, or what they look like) or through the use of a clue word (e.g., *both, same, alike, different, and*). If students provided an idea from the text that was not stated as a comparison (e.g., “sharks have sharp teeth”), they received half a point. Students did not receive any points for no response, “I don’t know” or “I can’t remember” responses, elaborations, and/or irrelevant information.

On the problem/solution task the students received a point for each correct problem or solution they recalled from the text. Because the problem/solution task had additional support (i.e., open-ended questions prompting problems and solutions), responses were not scored based on the use of signaling words. The placement of the props also was not scored because the task administrators noted that a majority of the students appeared to be randomly placing items on the chart. Students did not receive any points for no response, “I don’t know” or “I can’t remember” responses, elaborations, and/or irrelevant information.

Observations and interviews

Additional indications of the effectiveness of the instruction were expressed in observations and interviews. Recorded observations included review of classroom videotapes and anecdotal records, such as spontaneous

comments children made either when they were comparing and contrasting items or events or as they were discussing or commenting on problems and solutions (see Jalongo, 2000).

Interview data were collected from parents and teachers to evaluate their perceptions of effectiveness of instruction. A parent session was conducted at the end of the project during which parents were shown a slide show concerning their children's work and learning (Hyson, 2008) and asked to respond to survey questions indicating their perceptions of effectiveness as they had observed and interacted with their children (Jalongo, 2000).

RESULTS

Since this was a pilot study conducted over a relatively short period of time, the data were examined for basic directions and trends. Preliminary results are described in this section.

Compare/contrast performance

For the compare/contrast task, differences between pre- and posttest scores were analyzed using a paired *t*-test for the group of 71 participating children. The mean pretest was 7.0 (SD = 2.5), and the mean posttest was 7.8 (SD = 2.6). There was a significant gain score ($t = 2.60$; $p < .01$), but the effect size (measured as Cohen's *d*) was small ($d = 0.31$). At the posttest, most of the children were able to make comparisons of animals based on the same attribute (where they live, what they eat, or what they look like), but they infrequently used signal words such as *alike* or *different* to make the distinction.

Of interest is that 49 out of the 71 children (69%) scored 6 or more (max = 12) on the pretest, suggesting that they had some knowledge of comparing and contrasting processes prior to the instruction. In addition to analyzing the group data, we were interested in the performance of 22 children (31%) who had a lower competence level, having scored less than 6 on the pretest. Of these 22 children who began the instructional unit on a lower

level, all but five showed gains on the posttest, with a mean gain score of 2.21 (SD = 1.67).

Problem/solution performance

Children showed gains in understanding problem/solution relationships as they retold a problem/solution personal account with support. Of the 71 children, 61 made significant gains in their retelling of problem/solution text. The mean pretest score was 2.50 (SD = 1.42), and the mean posttest score was 6.77 (SD = 3.55). The *t*-test revealed a significant gain between pre- and posttest ($t = 10.20$, $p = .001$) and a large effect size of ($d = 1.58$).

Generalization of concepts and content

Observations by classroom teachers and unit instructors noted that children spontaneously talked about problems and solutions in their classrooms. They used the key problem/solution concepts that they had been learning through the stories, lessons, expository texts, mapping activities, discussions etc. For example, during a regular classroom activity (not part of the unit), the students were making muffins and realized that they did not have enough eggs. The children spontaneously suggested that they had a *problem* and needed to find a *solution*. Responding to the opportunity, the classroom teacher expanded the problem/solution concepts that were being addressed in the unit; the children discussed the problem of not having enough eggs for their muffins and brainstormed possible solutions (e.g., ask the teacher in the classroom next door, double check the fridge to be sure there weren't any more eggs, ask the preschool director to buy more eggs, go home and get eggs). Classroom observers reported a number of similar experiences during which the children spontaneously talked in class in terms of problem/solution relationships they had been learning.

We also were interested in whether or not the children were making out-of-class applications of the content and concepts they were learning. So we asked parents to

identify if they heard their children talking about any of the content, concepts, or activities at home. The parents were given a list of content and concepts from the unit and asked to report generally on the activities, ideas, and stories that their child shared with them about preschool.

Of the parents who were willing to share their experiences, slightly more than half indicated that their children did not refer to any specific information about their experiences in the classroom: e.g., “He hasn’t told me very much about it,” “He has talked a little bit about it,” “No! I should say, however, I have not asked.” However, responses of those whose children did bring their learning home were encouraging. Several parents reported hearing their children talk about the content they were learning from the expository texts/lessons on animals:

She often asks me questions that are obviously linked to what she has been learning about. Typically her questions arise when she sees something that reminds her/cues her. For instance, when we were shopping one day we saw a blind man with his seeing-eye dog, and I was astounded by her interest and knowledge. This makes more sense [now I know] that this was part of one of the books.

My daughter does not talk about [specific] stories. She has been asking questions about animals, and now I know where these questions have been coming from.

Given the ages of the preschoolers, researchers were not surprised that many of them became particularly interested and personally involved with the stories.

I have heard about stories my child has experienced at preschool as she has made connections with the story and her life. For example, an older sister had a sore tooth, so my child shared ideas from *Bear’s Toothache*. We had mice we were trying to catch, and she talked about *Mouse Mess*.

She loves all the reading and focus[es] on each story.

“Very excited about ‘dog’ stories—loves story time.”

Of particular interest to those who had developed the project, some parents also reported hearing their children discuss or demonstrate their knowledge of some of the concepts they were learning.

“He does talk about finding solutions. He has also talked about getting a pet a lot lately.”

“My child has talked about how to take care of pets. [He has] shared the stories that he likes, also shared what the problem was and how it was solved.”

“I really like the project. My son has started to focus on problem solving.”

“I would like to do [reading like] this at home. It makes books and stories more interesting and meaningful.”

Teacher reactions

The teachers who participated in this study had been trained in a model of developmentally appropriate practice. Instead of having a specific curriculum, they had relied on creating print- and language-rich environments that would provide naturalistic stimulation for literacy exploration. Although explicit teaching of literacy skills was not the central focus of their instruction, the teachers did agree to permit the supplemental literacy program to be implemented in their classrooms and to assist in evaluating its effectiveness. The program designers held some preliminary meetings with the teachers, during which they shared a draft of the program and assured the teachers that the instructional strategies would fit within developmentally appropriate practice. With the permission and support of the preschool director, the teachers willingly agreed to accommodate the instructional program and support the student instructors as they carried out the lessons and activities.

Discussions and interview data indicated some change in teacher beliefs about literacy practice. The teachers felt that as a result of participating in the program they had learned about the value of using expository texts with young children and providing explicit literacy instruction. One of the two teachers

commented that she had learned particularly about the need for purposeful yet playful practice and application of literacy skills.

DISCUSSION

Although this study was preliminary and included no control group, its results can provide SLPs and early childhood educators with practical ideas and some concrete methods for implementing an early expository program that is based on relevant research and is developmentally appropriate for preschool classrooms. Ultimately this pilot study reinforces the notion that children of preschool age can learn expository information and deal with expository concepts and structures. Several lessons have been learned from this experience that may lead to future research related to early expository instruction in preschool classrooms.

Appropriateness of early expository instruction

Through this project we learned that explicit, purposeful instruction does not have to be boring or unrelated to children's lived experiences. Thematic units can and should be constructed on topics of natural interest to young children and related to children's lives and experience. Many of the children were also able to apply expository concepts to their own experiences. Several parents indicated their children were starting to think and talk about things in their lives in terms of problems and solutions. We feel that one of the reasons that the problem/solution retelling task may have had the largest effect size was because these were the concepts that the students used spontaneously both in and out of the classroom. Thus it seems that the children internalized these concepts and then were able to use them more effectively in their retellings at the posttest. Mapping was shown to be valuable in developing these patterns; however, the randomness with which some children completed the problem-solution mapping on the posttest demonstrates that the task should be

simplified or perhaps supported as in a dynamic assessment task.

Cautions and considerations in implementing early expository instruction

This study supports the recommendation to use expository texts in instruction with preschool-age students. In this pilot study, the instruction focused on a number of genres dealing with informational content: personal accounts, content-based narratives, expository read alouds, and hands-on experiences in the presence of contextualized instructional conversation. Although we agree with the concern that young children may not be able to distinguish between fact and fiction on a metalevel, we also feel that relating themes presented in narrative and expository texts enriches children's understanding of the theme and content and provides motivation in the form of integrated instruction. In mixing genres we believe that it is important to make explicit contrasts between how situations occur in stories and how they really happen or appear in real life. The use of personal narratives that highlight factual information with compare/contrast or problem/solution structures can create a bridge between narrative and expository texts. In using personal narratives, the SLP or teacher can make it clear that the real life situation happened to a real person she knew.

Limitations and need for further research

This pilot study has opened up possibilities for additional research into models and methods for preparing young children to deal with expository texts. We recognize its limitations in time and population diversity. We highly recommend application of similarly conceived programs in preschools serving more diverse populations, in first and second grade classrooms, and in classrooms containing children with more severe language delays or deficits. Research is needed using an experimental design with controls.

Adjustments and revisions need to be made to the tasks to provide children with the necessary support and to make the tasks more comparable. Both of the tasks required students to retell a well-structured expository text with the support of a graphic organizer and concrete props. However, there were differences between the two tasks, and thus they cannot be compared. The first difference was in administration. During the problem/solution task, the students received general support as they were prompted to recall problems and solutions. Another difference was in the scoring of the two tasks. In the compare/contrast task, students were given credit for their use of signal words and placement of the props on the graphic organizer. However, in the problem/solution task students were given credit only for the problems and solutions they recalled from the text.

In addition to these task limitations, there were differences in the text struc-

tures that were used. There are inherent differences between problem/solution and compare/contrast structures. For example, compare/contrast texts are less “story-like.” In contrast, problem/solution texts are often more similar to narrative texts. We also believe that the problem/solution concepts and experiences were more compelling for the children (see results from observations and parent data) and that the assessment task reflected gains due to the content of the unit and the problem/solution structure. The children seemed more intrigued by the problem/solution than the compare/contrast content.

Despite these limitations and cautions, the results of this pilot study add to the increasing body of literature supporting the introduction of expository text instruction in preschool and kindergarten classrooms. We hope that the activities described in this article will encourage others to see the possibilities.

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