Teachers' Views of the Efficacy of Incorporating the Project Approach into Classroom Practice with Diverse Learners

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Abstract

This study provides preliminary insight into teachers' perspectives on ways that the Project Approach can help to support instruction of learners with a range of strengths and needs, and learners from a variety of cultural, economic, and linguistic backgrounds. Pre- and post-training interviews were conducted with seven preschool teachers who attended professional development sessions on the Project Approach. Interview questions focused on teachers' perceptions of the impact of implementing the Project Approach on their ability to meet the learning needs of diverse learners. Teachers' perceptions of factors that facilitated implementation of the Project Approach were studied. Themes related to four factors emerged from the teachers' comments: (1) Participation and learning of diverse learners was facilitated. (2) Positive effects were noted for children's social and academic learning, which teachers attributed to improved motivation. (3) The availability of "real objects" and materials in the classroom was beneficial. (4) Positive effects resulted from including children in planning. These findings support research addressing the benefits of including children with a range of abilities in school settings and the benefits of child-initiated learning for all children. Optimal strategies for the provision of professional development in the Project Approach are explored, and recommendations for further research are suggested.

Introduction

In this paper, we address a set of findings from a larger study of professional development for teachers who use or plan to use the Project Approach. The Project Approach is considered by many to have particular value when it is used in combination with comprehensive curricula such as *The Creative Curriculum for Preschool* (Dodge, Colker, & Heroman, 2002) or High Scope (High/Scope Educational Research Foundation, 2003). In the United States, the Illinois State Board of Education (ISBE) encourages teachers in its state-sponsored prekindergarten programs (called Preschool for All classrooms) to incorporate the Project Approach and to that end has supported a series of professional development institutes about the Project Approach for teachers.

Many educators are searching for "evidence-based curricula" in response to the *No Child Left Behind* legislation and the national standards movement. In general, research provides little evidence to support the use of any particular early childhood curriculum. Sometimes a curriculum will be called "evidence based" if its approach, focus, or activities are based on research about effective practices, even if no data have been collected about the particular curriculum's effectiveness. Similarly, the research base for the Project Approach is small. The current study was an effort to expand on what is already known about the Project Approach and to begin a foundation for future research on the efficacy of the Project Approach in early childhood classrooms by identifying effective components or factors. We have used interview data collected from seven teachers in state-funded prekindergarten programs to address the following two questions:

- To what extent do teachers in Preschool for All classrooms perceive the Project Approach as an effective way to teach a group of diverse learners?
- What factors facilitate teachers' implementation of the Project Approach?

Background Information

The Project Approach

The purpose of the Project Approach (Helm & Katz, 2001; Katz & Chard, 2000) is to involve children in investigations of topics that are worthwhile and of potential interest to them. The teacher assesses the children's interest in and understanding of the topic, helps the children develop a set of questions that their investigation will find answers to, and then provides them with experiences that help build further understanding. In project work, children have many opportunities to explore relevant phenomena and to represent what they observe and what they learn. Children often work together in small groups on various project-related tasks. Project work allows children to demonstrate their strengths by applying their knowledge, skills, and dispositions in ways that are helpful to others. As teachers plan for project work, they anticipate what individual children know and can do, what they want to know or do, and how they can best accomplish their investigation. Implementation of the Project Approach necessitates that teachers engage in what Pianta (2006) calls *intentionality* (p. 239), purposefully taking children's individual interests, skills, and abilities into consideration when planning activities and responding to the children.

The Project Approach is a multidimensional, interconnected approach to teaching based on constructivist theory of how children learn. The approach reflects a philosophy of teaching that permeates what and how children are taught; the content of a project varies depending on the interests and abilities of each group of children and their teacher. The fact that it is an approach, rather than a curriculum with specific content, makes it difficult to compare the Project Approach with other early childhood curricula. The content, knowledge, dispositions, and skills emphasized are likely to vary from project to project within a given classroom and also to vary from classroom to classroom. Consequently, the very responsiveness and elasticity that are highlighted as the strengths of the Project Approach are likely to increase the challenge of comparing uses of the approach across classrooms. This challenge may account, in part, for the lack of research on its implementation and effectiveness.

Many teachers believe that the Project Approach provides an effective context for teaching and learning both academic (Helm, 2000) and social skills (Schuler, 1998). Some teachers have reported that the Project Approach is also beneficial in teaching young children with disabilities (Donegan, Hong, Trepanier-Street, & Finkelstein, 2005; Edmiaston, 1998; Scranton, 2003), in helping children meet state and local standards for early learning (Beneke, 2002), and in providing coherent programming for children who attend preschool on a part-time basis (Beneke, 2000). Overall, however, there is little research on the effectiveness of the Project Approach with preschool children, and only three studies address the effectiveness of this approach with preschool children with disabilities (Donegan et al., 2005; Edmiaston, 1998; Scranton, 2003).

Teachers typically learn how to implement the Project Approach as part of their teacher education programs, through inservice training, or by accessing video or reading materials. For example, *Young Investigators* (Helm & Katz, 2001), *The Power of Projects* (Helm & Beneke, 2003), and *Rearview Mirror* (Beneke, 2004) are Project Approach resources in the National Association for the Education of Young Children (NAEYC) catalog, which is distributed to over 100,000 members (National Association for the Education of Young Children, 2008). Teachers also sometimes learn the Project Approach by working with other teachers or a curriculum coach who might serve as a mentor. A small number of articles describe methods for providing professional development on the Project Approach (Beneke, 1998; Borgia & McClellan, 1998; Clark, 2006; Wiggers & Wortham, 2003).

Context of the Study

Illinois is the first state in the United States to legislate the availability of free preschool for all 3- and 4-year-old children (Illinois Government News Network, Office of the Governor, 2006). The Illinois Early Learning Council has recommended that these Preschool for All programs include children with special needs, thus making it possible for many children with disabilities who had not previously had access to be included in part-day preschool programs (Illinois Early Learning Council, 2006). Children who in the past received early childhood services by attending two half-day programs in different locations can now have a more seamless day. In fact, many children with disabilities are already fully included in Illinois child care centers; half of the 800 lead teachers who responded to a recent statewide survey of center-based care indicated that at least one child with disabilities was enrolled in their class (Fowler, Bloom, Talan, Beneke, & Kelton, 2008). Eighty percent of the 800 teachers surveyed for that study also reported that their classrooms included children of racial and ethnic groups other than their own (Fowler et al., 2008).

In addition, recent estimates indicate that 23% of Illinois children under age 6 are linguistically isolated and speak a language other than English at home (Illinois Early Childhood Asset Map, n.d.). A linguistically isolated household is defined as one "in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English

language and speaks English very well. In other words, all members of the household 14 years old and over have at least some difficulty with English" (U.S. Census Bureau, 2000). In response to the presence of so many diverse learners, teachers in early childhood classrooms in Illinois and elsewhere are likely to be looking for methods that will help them provide diverse groups of preschoolers with optimal learning experiences.

The Search for High-Quality Curricula

According to NAEYC (2003), "well-planned, evidence-based curriculum, implemented by qualified teachers who promote learning in appropriate ways, can contribute significantly to positive outcomes for all children. Yet research on the effectiveness of specific curricula for early childhood remains limited" (p. 4). Research focusing on curriculum implementation is particularly difficult to locate with regard to children with disabilities and children whose home language is not English (Guralnick, Hammond, Connor, & Neville, 2006).

The advent of the standards movement (sometimes called national standards-based school reform) presents a potential barrier for teachers who want to individualize instruction and tailor curriculum in response to diverse groups of students (Hardman & Dawson, 2008). Despite a limited research base, this trend toward standardization has resulted in increased pressure to use what are frequently called "evidence-based curricula" that are meant to support young children in meeting content area learning standards (National Association for the Education of Young Children, 2003).

Meisels (1992) has pointed out that despite good intentions, efforts to support children's learning with evidence-based curricula can "backfire." For example, a curriculum may be poorly aligned with the age, culture, or home language of children in any given classroom (Fillmore & Snow, 2000), or the content of the curriculum may not be worthy of implementing with children (Espinosa, 2002). In addition, even though a curriculum might be well designed, it might not be implemented with fidelity or in ways that are developmentally appropriate (Bredekamp & Copple, 1997). Additionally, even if a curriculum is a compilation of evidence-based strategies, the combination of these strategies into one curriculum does not guarantee that the curriculum "works." Pretti-Frontczak, Kowalski, and Brown (2002) state that comprehensive and well-articulated curriculum frameworks include an assessment, scope, and sequence; directions for using the activities, materials, environment, and intervention strategies; and procedures for monitoring progress on an ongoing basis. However, the degree to which available curricula are comprehensive varies (Grisham-Brown, Hemmeter, & Pretti-Frontczak, 2005), so that "[i]t often takes multiple resources to construct a curriculum framework" that will best serve a particular group of children (Grisham-Brown et al., 2005, p. 31).

In an effort to help teachers and administrators decide which curricula to incorporate into their programs, the Early Childhood Division of the Illinois State Board of Education (ISBE) has identified a list of criteria to be used by programs in selecting curricula to support diverse groups of learners (see Appendix A). Such information is important to the staff of Illinois Preschool for All programs as they select strategies and curricula for their classrooms, especially in light of the documented diversity these programs are likely to experience among the children being served. This list, however, is not a long-range substitute for scholarly research that documents the benefits of the various curricula and approaches.

Method

Participants

Seven Illinois certified early childhood teachers from child care centers that had recently been awarded Preschool for All grants by the ISBE Early Childhood Division participated in this study. The teachers attended one of two 3-day institutes on the Project Approach funded through a collaborative effort among ISBE, the Illinois Association for the Education of Young Children (IAEYC), the Chicago Metro Association for the Education of Young Children (CMAEYC), and the Illinois Resource Center on Early Childhood (IRC:EC). One institute was held in north central Illinois, and the other was held in a northwest suburb of Chicago. The seven teachers were interviewed individually prior to and then approximately 3 months after attending one of the institutes.

All seven teachers were Caucasian and had been in their current positions for less than 2 years. Teachers were categorized based on their description of prior experience with the Project Approach as having no experience (NE), some experience (SE), or as being experienced (E). Those who fell into the NE category had either never heard of the Project Approach prior to the interview or had learned about it through college coursework or workshops, although they had never tried implementing the approach. Teachers in the SE category had learned about the Project Approach through college coursework or workshops and had attempted implementation prior to the interview. One teacher who was categorized as experienced (E) had learned about the Project Approach through college coursework and workshops, had attempted to implement the approach in the past, and was implementing the approach at the time of the first interview (see Table 1 for additional demographic information).

Table 1
Teacher Characteristics

Name	Experience*	Certificate	Years in Field
Anna	E	04	5
Barbara	NE	04	16
Connie	NE	04	2
Dawn	NE	04	14
Eleanor	NE	04	4
Fran	SE	04	4
Grace	SE	04	3

*Note. NE = no experience, SE = some experience, E = experienced.

Interviews

Interview Process. Data were gathered from pre- and post-training interviews with seven certified Preschool for All (PFA) teachers who had attended one of two 3-day institutes on the Project Approach with administrators from their programs.

A research assistant, who was a doctoral candidate in Speech and Hearing Science, conducted the teacher interviews. The interviews took place at the sites where the preschool teachers' PFA classrooms were housed. Each teacher was asked to select a quiet location where she felt comfortable being interviewed. Each interview was audiotaped and took no more than an hour to complete. Teachers were interviewed twice, once prior to attending an institute for training on the Project Approach and again after attending the institute. All pre-institute interviews were completed within a 4-week period prior to the institute that each participant was scheduled to attend, and all post-training interviews were completed within a 16-week period following attendance at the institute.

Data were transcribed and analyzed from the first set of interviews. The findings from this analysis were then used to revise questions and develop probes for the post-training interviews.

Interview Protocol. Interview questions were developed to address gaps in the literature on the Project Approach. The first author has extensive experience implementing the Project Approach in preschool classrooms, including classrooms with children with disabilities (e.g., Beneke, 1998, 2000, 2004; Beneke, Ostrosky, & Katz, 2005; Helm & Beneke, 2003). Interview questions were developed based on the literature, based on Beneke's experiences, and through consultation with other individuals who have expertise on the Project Approach, early childhood curricula, and children with special needs. Prior to conducting this study, a pilot study was conducted with five teachers to evaluate the interview protocol for clarity, level of detail, and time necessary to complete the interview. (See Appendix B for interview protocol.)

Analysis of Interview Data

Audiotaped interviews were transcribed and reviewed for inaccuracies by asking each interviewee to review her transcript for accuracy and clarity (i.e., member checking).

Analyses of the data began once the participants had reviewed their transcripts or passively consented to their accuracy. Across 14 interview transcripts, only one participant made a minor edit to her transcript.

Following Johnson and LaMontagne's (1993) guidelines for content analysis, the researchers independently coded the transcripts and established categories, meeting regularly to compare findings and reach consensus on disagreements. The data from each transcript were merged by category, and themes emerged as the researchers looked for commonalities across responses. Mutually exclusive definitions were developed so that each participant comment fit only one definition. The researchers discussed the emerging themes and definitions, and adapted them as needed.

A naïve graduate student and a teacher certified in early childhood special education were trained to code the transcript data using definitions created by the researchers. Coders were trained on sample sets of 20 randomly selected responses from teachers' pre-institute interviews. The first author met with the coders to discuss and resolve disagreements in coding between the coders and the researchers. Definitions were revised based on the discussions between the coders and the first author. The two coders coded a total of 30.59% of the teacher pre- and post-institute responses (n = 523). See Table 2 for reliability data.

Table 2
Reliability

Pre-Institute Average (mean, range)	Post-Institute Average (mean, range)
87.5% (85% - 90%)	88.75% (80%-95%)

Findings and Implications

Findings considered to be major were those that were voiced by three or more teachers. Four major findings related to the research questions emerged from the data regarding aspects of the Project Approach that teachers found helpful: (1) the impact of the Project Approach on diverse learners, (2) child outcomes and motivation, (3) the provision of real objects and materials, and (4) planning with children. Key findings and implications for professional development follow.

The Project Approach as an Effective Way to Teach Diverse Learners

Findings. Four of seven teachers reported that implementing the Project Approach increased their ability to include diverse learners. In this study, *diverse learners* encompassed children with special needs, children with challenging behaviors, or children who came from environments that put them at risk for academic failure. Participants' comments indicated that they found increased opportunities to adapt classroom activities, and consequently children with a range of abilities were able to participate in project work. For example, Fran had been teaching in the field for 4 years and had some experience with the Project Approach through college coursework and limited attempts at implementation. Fran stated that following the institute where she learned about the Project Approach, she was better able to plan meaningful instruction in response to data she gathered on children's individual interests and weaknesses:

> You're more able to collect information about what they like and what their interests are, and where you want to go from here…to move on to a new project or a new activity, you can pull out to work on maybe some of their weaker areas. [You can document] that they're able to achieve success through different methods.

Similarly, the teacher participants described positive changes in children's social development because of an increase in meaningful activities and materials to talk about as a result of project work. For example, Connie, who had 2 years of experience in the field and had no prior experience with the Project Approach, shared her observations about positive changes in children's self-esteem:

> I think for some of the children it actually helped them to be able to say, "Hey, this is something that I know a little bit about." And they almost took on the teacher role. And then, some of the children who were sometimes excluded or sometimes kind of played by themselves a little bit, they were able to actually find something that they know, and then their other classmates look up to them.

Four of the seven teachers also stated that the Project Approach increased the interest, motivation, and attention span of diverse learners in their classrooms. For example, Connie shared that engaging in a high-interest topic (buses) increased the attention of a child who typically had a short attention span: "He was interested for the longest time, just sitting down and saying, 'I made a school bus,' and 'I've been in one, and it does have four wheels, and it is yellow.'"

Some participants also described a reduced need for guidance techniques in response to challenging behavior as a result of implementing the Project Approach. For example, Anna, the teacher with the most previous experience in implementing the Project Approach explained, "When kids are interested in what they're doing, you're not going to have as many situations that you need to guide." Anna also reported that she had delighted in sharing the positive impact of the Project Approach on children's behavior with her classroom paraprofessional, therefore being able to "bring her into it." For example, when her paraprofessional expressed concern about the children using hammers and nails to build an airplane, Anna explained to her, "Oh we won't have behavior issues, because, can you imagine how engaged and excited they're going to be? And how focused they will be to be able to use those hammer and saws?"

Data from teachers participating in this study support research by Stipek, Feiler, Byler, Ryan, Milburn, and Salmon (1998) who found that children in preschool classrooms where teachers deemphasized direct instruction and basic skills and concentrated on a positive climate had a more positive affect and were less stressed, less dependent on adults, and more compliant than were children in classrooms that emphasized basic skills and direct instruction. Similarly, Smiley and Dweck (1994) found that, regardless of ability, 4- and 5-year-old children with a performance goal orientation (focused on documenting achievement of goals) were more likely to exhibit helplessness and think of themselves as "bad" when faced with a challenging task than were children with a learning goal orientation (focused on acquiring or improving their skills). Smiley and Dweck concluded that "children with performance goals who lack confidence may avoid many new learning situations in order to avoid feeling inadequate, restricting the opportunities they have to acquire new skills" (p. 1742). They emphasize that Ames' (1990) research with elementary school children demonstrates that "exposure to a classroom atmosphere that nurtures learning goals can lead to positive changes in…children's learning strategies, self-conceptions of ability and competence, and achievement motivation" (p. 1742). These findings indicate that challenging behaviors are reduced when classroom staff emphasize learning rather than performance goals.

Four participating teachers also indicated that they perceived the Project Approach as supporting diverse learners' academic learning as well as social development. For example, teachers reported that the Project Approach supported the language development of diverse learners, as children engaged in conversations about their investigations of a topic of study. For instance, Anna noted the new vocabulary acquired as part of a project on airplanes:

> The other day he was reading through a book and saying, "Look, Miss Anna, there's a propeller…. Look, Miss Anna, there's a propeller!" And he turned the page, and he'd go to the next airplane and say, "Look, Miss Anna, there's a propeller, there's a propeller." And just to see that he learned that word, that he got that, is awesome. So I think, especially the language blossoms a lot with the Project Approach.

This finding is in line with speculation by Odom and Wolery (2003) that inclusive settings "may provide a *developmental press* through a more cognitively, linguistically, and socially stimulating environment than occurs in nonintegrated special education settings" (p. 168). Reports from teachers in the current study indicate the belief that participating in project work in the context of inclusive preschool classrooms may increase opportunities for diverse learners to experience this developmental press as they engage with typically developing children.

Implications for Professional Development. Professional development focusing on the Project Approach may be beneficial for early childhood educators who are attempting to support the inclusion of diverse learners in classrooms with their more typically developing peers. For example, in the course of a project on buses, a special educator could take advantage of a child's interest in painting a large cardboard bus constructed by the children to embed practice with sign language (i.e., signing yellow, paint, help, more, lights, windows, etc.). Learning the approach as a cross-disciplinary team may help special educators and regular educators who work in inclusive settings realize ways to collaborate in embedding children's Individualized Education Plan (IEP) objectives throughout project work. Such collaboration can support a focus on children's interests, strengths, and needs as teachers motivate and engage diverse learners in project work. Teaching teachers to incorporate project work in their plans and providing mechanisms for embedding

goals and objectives for diverse learners within project work is also likely to help teachers support increased child participation.

Some participants commented that identifying diverse learners' interests helped them plan more effective instruction. Therefore, it may be beneficial to provide teachers with professional development experiences that sharpen their ability to recognize and capitalize on children's interests. Professional development in observation and documentation skills is likely to help teachers become more observant of individual children's interests and subsequently help them identify academic and social gains that result from children's participation in project work.

Social and Academic Outcomes as a Result of Child Motivation

Findings. Themes that emerged from the data related to children's development, interest, and motivation were often closely related. For example, teachers described how the motivation that resulted from project work helped children meet age-appropriate expectations, including the Illinois Early Learning Standards (IELS) (Illinois State Board of Education, 2002) and other readiness goals. As Anna put it, "I think you get so much more from them, and you're able to see so much more when they're engaged, and you're talking about a topic they're really interested in." Four of seven teachers described the Project Approach as helping children integrate math and social skills, build self-esteem, acquire new vocabulary, and develop scientific dispositions. For example, Anna, who had observed that children's vocabulary "blossoms," also reported gains in children's interest and motivation toward science learning and dispositions:

> Because you're teaching those dispositions—to be curious and to question, and to investigate, and to want to, just that urge to find out the answers to your questions, and that's basically what science is, is finding out the answers to questions and finding out how things work.

Additionally, after engaging in a post-institute project on cars, Fran was impressed with her students' ability to complete detailed representational drawings. Their interest in the topic motivated children to look closely and notice more. Instead of simple drawings from memory, their drawings included "little stickers that were on the windows of the cars and the numbers on the license plates, and…you know, the handles and the key locks and just very little details."

This view of children's development in response to the motivation and interest generated by project work is consistent with research by Marcon (2002), which demonstrated that preschoolers in classrooms that encouraged child-initiated learning performed better academically and socially later when they were observed at the 4th-grade level compared to preschoolers in teacher-directed classrooms. Also, the Home School Study (Dickinson & Tabors, 2001) demonstrated that preschoolers who had more opportunities to engage in conversations (using decontextualized language) with one another and with adults had greater academic success in kindergarten. Cognitively challenging conversation using decontextualized language "requires children to remember, reason, fantasize, imagine, problem solve, predict, and hypothesize" (Massey, Pence, Justice, & Bowles, 2008, p. 342). Project work supports conversations that include opportunities to remember, reason, imagine, problem solve, predict, and hypothesize. In addition to communication gains, teachers in the current study reported that the Project Approach supported social outcomes, a finding that is consistent with other research on the benefits of teaching diverse learners in natural settings (Kohler, Anthony, Steighner, & Hoyson, 2002; Kohler, Strain, Hoyson, & Jamieson, 1997; Odom, 2000; Odom et al., 1999). For example, Barbara, a teacher with no prior experience with the Project Approach, described her students' interest in a project on apples:

> They would see it [apples] everywhere. I'd be reading a book in the middle of the day, and they'd be like, "apples!" And they'd find it [the apple]. So they were really getting into it. Once we immersed them in it, they were really into it.

Implications for Professional Development. Participants in this study reported that when children were motivated and engaged in a project, teachers' ability to teach and document learning or child outcomes improved. It seems likely then that teachers may benefit from professional development focused on learning how to select high-interest topics for project investigations. In addition, professional development on the Project Approach that enables teachers to participate in a project simulation based on a high-interest topic may help inservice participants better understand (from firsthand experience) the interest and motivation that is likely to result from project work.

Benefits of Providing "Real Objects" and Materials in the Classroom

Findings. Six of the seven teachers who participated in the current study reported that bringing concrete "actual objects" or authentic materials related to the project topic into the classroom (e.g., objects typically found in the children's homes or in the topic context such as tools or machine parts) created heightened interest in classroom activities when compared to simplified replicas produced and marketed as preschool toys. These "real objects" related to the project topic helped engage children and facilitated the successful implementation of the Project Approach. Teachers believed that using real objects improved children's ability to make connections between classroom activities and the world outside of school. Introducing everyday materials such as cardboard boxes, containers, and various types of paper that children could use to represent their understanding of a topic also was perceived by the teachers as beneficial to inclusion. For example, Connie explained:

> We brought in more concrete materials for sure. Before we would have small blocks and all the little tubs of toys, but now it's more focused on their direct learning, as far as their interests. And we're interested in making [representations] of everything. And the cardboard boxes and stuff like that, we've got things that they've never seen in our classroom before, and now they're able to use [these materials] and build.

The shared perception of these teachers regarding children's interest in objects and materials is compatible with research by Dunst and his colleagues (2001), who found that young children with and without disabilities were more likely to learn when they were provided frequent opportunities to interact with objects of interest in natural settings (i.e., during classroom play). Other researchers have reported that children with and without disabilities are likely to participate in more advanced social interchanges when they are engaged in object-focused play (Pierce-Jordan & Lifter, 2005).

The ways in which teachers in the current study referred to play with objects and materials parallel a taxonomy of pretend play developed by Barton and Wolery (2008). Barton and Wolery define *functional play with pretense* as "nonliteral use of actual or miniature objects in the manner in which they were intended without the reality-based outcome" (p. 113). For example, a child engaged in functional play during a project on houses might put on a real tool belt and pretend to build a house. In the context of the current study, teachers reported that this type of object play took place when they brought real items into the classroom.

Participants also referred to children's use of real or recycled materials in their construction of representations. For example, one teacher described how her class had built a car out of cardboard packing boxes and pieces of lumber. This type of play, categorized by Barton and Wolery (2008) as *substitution play*, involves object substitution, imagining absent objects, and assigning attributes. *Substitution play* is considered to be a higher level of play than *functional play* because it requires children to pretend that one object is another. For example, a group of preschoolers might substitute a large cardboard box for the frame of the truck and substitute classroom chairs for the seats in the truck.

In their review of the literature on young children's object play, Barton and Wolery found that adult modeling and prompting helped increase children's level of pretend play. The process of investigating and representing findings in the context of a project provides many occasions for children to engage in functional and substitution play with objects and can create opportunities for teachers and peers to model and support children in moving from one level of play to another. For example, Anna stated that when she asked her students what they would like to do next, they said they would like to "build an airplane out of wood." At the time of her second interview, she was in the process of gathering wood so her students could "fully get it going" by constructing their own airplane. Anna also reported:

> And if they want to know how some things work together, I do bring resources from home. I'll bring in the cardboard boxes and everything and let them really figure out, through their hands-on play, how everything works, how everything fits together. That's changed a little bit from my prior teaching. More hands-on, now.

Implications for Professional Development. It may be useful for those who provide professional development in the Project Approach to emphasize the benefits of bringing real, topic-related objects into the classroom environment. Offering teachers examples of such objects and providing them with opportunities to brainstorm types of objects related to particular project topics may be a useful component of training in the Project Approach. Training in how to evaluate the play value of commercially available materials might enable teachers to become more critical consumers of commercially marketed products and to recognize additional possibilities for including real objects in their classrooms. Also, by communicating with their administrators about the benefits of using real objects, teachers may be able to access such materials more easily. It may also be beneficial during professional development to focus on identifying types of recyclable/reusable objects and materials for *substitution play* construction and representation (e.g., shoeboxes, large cardboard boxes, margarine tubs, egg cartons, bottle caps). Support for teachers' implementation of the Project Approach might also include identifying potential sources of recyclable/reusable materials (e.g., parents, other teachers, businesses, service organizations). Finally, beneficial professional development strategies are

likely to include sharing techniques for supporting the various levels of play within the context of project work (e.g., adult modeling or prompting more advanced play behaviors).

Learning to Plan with Children

Findings. Planning project-related activities with children was a positive experience for five of the seven teachers who participated in this study. They reported that when they shared control of planning project activities, children seemed more motivated and increased their participation in project work. Teachers also reported that their own ability to ask open-ended questions, elicit questions from children, engage in webbing, and identify children's interests increased over the course of planning projects with children. One teacher described her collaborations with children:

> I think I just probably tried to be consciously better at asking more open-ended questions and eliciting questions from them. I think I'm learning better how to figure out what they want to learn about, what things they're interested in, what kind of questions they have, and I'm learning how to get that out of them a little bit more, rather than just saying, "so what questions do you have?" I'm learning how to think, observe, and ask other questions to get to what they want to know, so I think that's probably a change.

According to Siraj-Blatchford and Sylva (2004), when young children were engaged in sustained thinking—where two or more individuals "work together in an intellectual way to solve a problem, clarify a concept, evaluate activities, or extend a narrative"—over time, more child-teacher and child-peer interactions were child-initiated (p. 718). The authors noted that for the benefits of sustained thinking to occur, it is necessary for both parties to be "involved," and if the resultant learning is to be worthwhile, the content must be "instructive" in some way (p. 720). Because projects typically last for several weeks, the increased opportunities for children to regularly plan and then discuss the progress of the project with peers and the teacher seem likely to result in increased child-initiated sustained shared thinking. For example, Fran, a teacher identified as having some experience with the Project Approach, described the evolution of a class project on cars:

> We did an initial web and said, "we're going to start learning about cars…what do you guys already know about cars?" We put cars in the middle [of the web] and then some of them told us parts they knew or where cars go. Like, "my mom drives a car to the store" and "if the police pulled you over you went too fast," and so they knew quite a few things about it, so we just went off of their original thoughts and asked them questions…. "Well what do you think you want to learn about cars?" We made some notes about what they wanted to learn, and one of the first days, I parked my car in the back of the parking lot, and we all went out with our clipboards, and they got to draw and ask questions about where I take my car, and [they made comments such as] "there's a dent in the hood" and "Why does it have it? Were you in an accident?"…We went from there and as they asked more questions we'd get more information.

Implications for Professional Development. Professional development about how to plan with children (e.g., learning to develop and use webs, elicit children's ideas, share control of classroom activities, encourage child-to-child conversations) may help teachers actively engage children in project work. Also, it seems likely that including professional development activities that focus on learning to ask open-ended questions will help teachers elicit and rephrase children's thoughts in order to scaffold children's involvement in the planning process.

Since children's interests and ideas are often expressed through nonverbal behaviors, professional development activities that help teachers identify children's interests and thoughts as they are expressed nonverbally also may be helpful. For example, a child who is interested in going shopping might spend time in the dramatic play area pretending to write shopping lists, packing a purse with play money, or filling a shopping bag with objects. Teachers who notice these communicative attempts can encourage children with a range of abilities to share their ideas with the group.

Providing examples of ways that the Project Approach can be incorporated into teachers' lesson plans and modeling techniques for webbing and for asking and eliciting questions may help teachers learn to better incorporate planning with children into their practice. Similarly, project simulations during professional development may help teachers better understand and implement the planning process; such simulations should include opportunities to discuss and web ideas with others and to share control of the direction of a project.

Implications for Those Who Help Others Learn the Project Approach

Findings from the current study reveal that the participating teachers had positive perceptions of the effectiveness of the Project Approach as a way to teach diverse learners. They believed that learning the approach helped them to better include diverse learners, to motivate children toward increased academic and social skills, to bring children into the project planning, and to enable children to interact with project-related "real objects" in the classroom. Therefore, it is important that future professional development efforts include these aspects of the Project Approach.

Such focused professional development is especially important for teachers who are in the initial stages of learning the Project Approach. Also, follow-up training is critical for teachers who have only had an initial introduction to the Project Approach if they are to become confident implementers. However, depending on the experience and training of a teacher, providing this professional development through workshops may not be the preferred vehicle.

While our findings suggest that the participants in this study seemed to have benefited from attending a Project Approach institute, research and theory suggest that other forms of professional development may be more helpful for teachers who are just beginning to implement the Project Approach. A number of scholars and researchers have suggested that professional development through focused support such as continuous coaching, mentoring, and consultation may be more helpful to less-experienced teachers than typical technique-oriented workshops (e.g., Katz, 1995; Pianta, 2006; Pianta, Mashburn, Downer, Hamre, & Justice, 2008; Ackerman, 2007).

It may be instructive to consider the format for professional development in systems where the Project Approach was successfully practiced on a large scale. For example, teachers in the British Infant Schools commonly used project work during the 1960s (Katz & Chard, 2000). A report of the Central Advisory Council for Education in England (1967), commonly referred to as the Plowden Report, describes a within-school system of ongoing professional development in which teachers were "guided but not dominated" (p. 335) by a head teacher who also had classroom duties. Professional development in the British Infant Schools during the years was supported by "advisory teachers who can work beside…young teachers in the classroom" (p. 356). These advisory teachers visited probationary teachers

> for a half day, a full day or even several consecutive days if this is needed…. Advisors or advisory teachers can arrange conferences, courses and visits for young teachers when they are sufficiently experienced to profit from them. Conferences and courses should be informal and provide opportunities for young teachers to meet one another to talk over common problems. (p. 356)

The emphasis on individual guidance and consultation in the British Infant Schools is similar to that of contemporary programs that utilize individually focused professional development through coaching, mentoring, and consultation practices. For example, the U.S. Department of Defense provides professional development to early childhood educators in its child development centers through a combination of one-size-fits-all modules and "as needed" individualized professional development delivered by an on-site Training and Curriculum Specialist (Ackerman, 2007). Also, early childhood centers in Reggio Emilia, Italy, have successfully implemented projects; the professional development in these centers relies heavily on coaching, mentoring, and consultation practices—a *pedagogista* or "teacher of teachers" meets regularly with teaching teams to discuss and reflect on their experiences and their professional development (Edwards, Gandini, & Forman, 1998).

A combination of formal workshop-based training and on-site individually tailored consultation may be the best way to deliver professional development on the Project Approach to early childhood teachers. Katz (1995) noted, when discussing the training needs of novice teachers, "training must be constantly and readily available from someone who knows both the trainee and her teaching situation well. The trainer should have enough time and flexibility to be on call as needed by the trainee" (p. 206).

Perhaps learning new strategies that are part of the Project Approach, such as planning with children or incorporating "real objects" into the classroom environment, poses a large enough shift for some teachers that it is akin to first-year teaching and subsequently requires a coaching, mentoring, and consultation approach.

Limitations and Future Research

While the current study provides insight into teachers' perceptions about implementing the Project Approach, which can be used to inform future professional development efforts on the Project Approach, it would have been helpful to have a larger and more diverse group of participants. Furthermore, a pre- and post-institute observational study focusing on implementation of the Project Approach could shed light on additional factors that support or inhibit implementation. Such an observational study could help identify future areas for professional development to enhance implementation of the Project Approach.

Future research on the relative effectiveness of a variety of supports for implementing the Project Approach with diverse learners may provide guidance to those who provide professional development (i.e., the use of consultants, professional development communities, ongoing inservice). Likewise, future research should focus on supports that are needed to train trainers in the Project Approach.

Finally, research is needed to critically explore the four themes identified by participants in this study: (1) including diverse learners, (2) social and academic growth as a result of child motivation, (3) providing authentic objects and materials in the classroom, and (4) planning with children. Research to determine effective professional development activities and materials related to each of the four themes is needed.

In summary, the Project Approach appears to be an effective way to support the learning of diverse learners. Professional development opportunities that emphasize characteristics of the Project Approach that other teachers have found helpful may be beneficial to teachers who are new to the approach. Listening to the voices of early childhood teachers who have learned about and attempted implementation of the Project Approach can move the field forward in designing professional development opportunities that represent recommended practice and support the learning and development of diverse groups of young children.

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Appendix A

Prekindergarten/Preschool for All Curriculum Criteria

- Alignment with the Illinois Early Learning Standards
- Inclusion of content to be taught with intentionality and integration
- Provision for child initiation and engagement
- Use of content based on research of how young children learn
- Provision for parent involvement, through meaningful communication with families
- Alignment with an authentic assessment tool that is ongoing and comprehensive
- Consideration of the child's linguistic and cultural background
- Consideration of the range of experience and qualifications of early childhood teachers
- Consideration of a wide range of children's abilities, including those of children with IEPs
- Provision of research evidence of the effectiveness of the curriculum

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Appendix B

Post-Training Interview Protocol

- What experience did you have with the Project Approach since the last time we met?
  - Did you try implementing it? If so, what happened?
  - What did you notice about the way it developed?
  - What, if anything, did you learn about the Project Approach that was new to you?
- How did you get started using the Project Approach?
  - What did you do first? How did the children respond?
  - Then second? How did the children respond?
  - Third? How did the children respond?
- Do you think the Project Approach impacted the way you teach? If so, how?
  - What looks different? What makes you think this?
  - What looks the same? What makes you think this?
- Do you think the Project Approach impacted the way children learn? If so, how?
  - What changed?
  - What looks different? What makes you think this?
  - How does it look the same? What makes you think this?
- How did the Project Approach work in combination with your
  - Environment?

- Daily and weekly schedule?
- Content?
- Parent involvement?
- Guidance techniques?
- Teaching style?

- Did the Project Approach impact the teaching strategies you currently use? If so, how?
  - If I were watching you use these strategies, what would I see? Please describe 2-3 scenarios.
  - How did teaching children who have differing abilities look when implementing the Project Approach?
  - How, if at all, did using the PA impact the way you help children meet the Illinois Early Learning Standards? Please describe.
  - How, if at all, did using the PA impact the way you manage challenging behaviors? Please describe.
- What are the **pros** of implementing the Project Approach?
  - How, if at all, did PA positively impact lesson planning?
    - Writing lesson plans?
    - Implementing lesson plans?
  - How, if at all, did the Project Approach positively impact inclusion of diverse learners?
- What are the **cons** or downsides of implementing the Project Approach?
  - How, if at all, did PA negatively impact lesson planning?
    - Writing lesson plans?
    - Implementing lesson plans?
  - How, if at all, did the Project Approach negatively impact including diverse learners?
- What kind of impact, if any, do you think using the Project Approach had on children's overall development?
  - Language skills? Examples?
  - Math skills? Examples?
  - Personal/Social skills? Examples?
- What do you think was most helpful to you in implementing the Project Approach with your selected curriculum?
  - Training received? How so?
  - Training materials? How so?
  - Colleagues? How so?
  - Support from your administrator? How so?
  - Curriculum coach? How so?
- Tell me about the curriculum you use in your Preschool for All classroom? (i.e., High/Scope, Creative Curriculum, or Scholastic)
  - What, if anything, do you like about this curriculum?
  - What, if anything, do you dislike about this curriculum?
  - How do you think this curriculum works in combination with the Project Approach?