Revisiting "Play": Analyzing and Articulating Acts of Inquiry

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The early childhood profession needs to establish a different discourse to describe what has been referred to as "play" in early childhood. The authors draw from literature on inquiry theory to provide a theoretical lens for discussion and offer a model for inquiry through the Project Approach for the early childhood setting. The authors posit that early childhood educators need to clarify and extend the definition of play by distinguishing between play that occurs outside of the classroom as opposed to play that occurs as part of classroom curriculum. Further, educators need to develop the language for analyzing acts of inquiry and articulating these processes to parents and the public. An examination of the inquiry process of one preschool learner offers one way to begin articulating classroom inquiry and demonstrates how each instance of inquiry is a complex, reflective, and semiotic act.

KEY WORDS: play; inquiry curriculum; transmediation; sign systems; Project Approach.

INTRODUCTION

Play, often interpreted as recreational activity, is widely accepted outside the school setting. The concept of "play" in early childhood education is highly valued because it contributes to the young child's cognitive, social, and psychological development (Johnson, Christie, & Yawkey, 1999; Saracho & Spodek, 1998; Spodek, 1993). However, using the same terminology as part of the early childhood curriculum subjects the profession to criticisms because the context of schooling imposes the need for a rigorous, educational curriculum, the application of which is seen as going beyond mere recreational activity.

We contend that the profession needs to establish a different discourse for play that occurs in the early childhood classroom to be interpreted especially by noneducators as educational, meaningful, theoretically driven, and curricularly worthwhile in the academic setting. We turn to literature on play and inquiry theory to provide a theoretical lens for our discussion. And to define play that is associated with academic learning, we describe each instance as an act of "inquiry." Inquiry, we believe, is a term that connotes critical and reflective thought and promotes the attainment of the intellectual capacity of every learner.

We argue further that early childhood educators need to develop the language for analyzing acts of inquiry and articulating these processes to parents and the public, so they may understand the complexities of and rigor in young children's inquiries as well as the implications for schooling and lifelong learning. We identify and analyze the process of one preschooler's inquiry on the topic of "space." Through this analysis, we offer one way to begin articulating classroom inquiry, illustrating how each instance of inquiry is a complex, reflective, and semiotic act.

PLAY AND CURRICULUM-AS-INQUIRY

Definitions of Play

Since the 1930s, multiple definitions of play have emerged, influenced by theoretical approaches and fo-

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cuses of research spanning across a broad spectrum (Saracho & Spodek, 1998; Sponseller, 1982). Researchers assert that play assumes several forms. One perspective describes play as an enjoyable, self-amusing activity, such as two children sitting in a sandbox pretending to make pies. Another perspective describes play as an activity, with an educational focus such as a child in a preschool environment investigating sharks as part of project work.

Sponseller (1982) posits that genuine play resides within the child, controlled by the child's acts, driven by the child's motivations, and based on the child's sense of reality. Once these factors are located externally, Sponseller argues, these acts are no longer considered play. Lillard (1998) argues further that children develop theories about their world through different play activities contributing to their theories of mind. It is with these numerous experiences of play that children develop the foundation for other forms of development connected to academic learning, such as emergent literacy into fictional story writing (Roskos & Neuman, 1998).

Curriculum-as-Inquiry

Parallel discussions on play have also occurred in literacy and curriculum theory literature for school-aged children. In their Curriculum-as-Inquiry model, Short and Harste (1996) posit that every instance of inquiry is rooted in the learner's personal and social knowing, which is explored through knowledge-system (science, social science, mathematics) and multiple-sign-system (visual art, music, dance, drama) perspectives. Learners proceed through a series of inquiry events in which they gain broader perspectives of their questions and share their knowledge with others. These systems are often expressed by children in their play.

While Short and Harste (1996) outline an inquiry process, they and other inquiry researchers argue that inquiry is more than a procedure or instructional technique. Rather, it is a theoretical stance that guides the way teachers view curriculum and learning (Berghoff, Egawa, Harste, & Hoonan, 2000; Pataray-Ching & Roberson, 2001; Short and Harste, 1996). Inquiry as theory is a way in which one views the world: rich with possibilities and an endless sea of questions. Inquiry requires us to think critically as well as to broaden one's thinking, to understand perspectives and experiences different than our own, to advance our world's thinking, to contribute new ideas, and to bring love and beauty to our world.

In this light, we view all definitions of play as forms of inquiry that occur both within and beyond edu-

cational settings. We agree with Sponseller (1982) that play must be intrinsically motivated and personally and socially meaningful to the learner. We also agree with Lillard (1998) that every act of play contributes to theories the learner is constructing, whether the activity involves children pretending to participate in a tea party using plastic child-sized tea cups and saucers or of children in a preschool setting wanting to know more about trains that pass through their local community.

However, play theory runs into criticism when its principles are placed within an educational context. Because the layperson's perspective of play tends to be defined as noneducational, using the same term in educational settings becomes problematic, subjecting the field to criticism. Thus, for the purposes of distinguishing between forms of play in this discussion, we refer to play that exists outside school settings as "play" and within the educational curriculum as "inquiry" to help laypersons understand the rigors of children's play within an educational context. One such context in which inquiry has been incorporated as part of its curriculum is the Project Approach.

Curriculum-as-Inquiry in Project Work

The Project Approach, well documented in the research literature, is an outgrowth of the work of the early childhood program in Reggio Emilia, Italy, and one of many progressive pedagogies in early childhood education that has incorporated play as part of its curriculum (Edwards, Gandini, & Forman, 1998; Edwards & Springate, 1993; Helm & Katz, 2001; Katz & Chard, 2000). Project Approach teachers recognize the importance of young children's play during project work and provide the space and time children need to play. Through center activity, children may engage in construction and investigation activities and dramatic play (Helm & Katz, 2001; Katz & Chard, 2000). They may express themselves through words, drawings, paintings, collages, sculptures, shadow play, and other creative endeavors (Edwards & Springate, 1993).

We learned that by referring to play in the early childhood curriculum as acts of inquiry, we were able to see children's potentials through more multifaceted ways-through their multiple ways of knowing and the multidisciplinary perspectives in which they approached their inquiries that would have been otherwise overlooked. Acts of inquiry, rather than acts of play, connote acts of involved learning that are educational, rigorous, and connected to schooling and a lifelong pursuit of knowing. By applying principles of inquiry theory to curriculum in the early childhood classroom, educators

are better positioned to establish an environment of inquiry in project work (Pataray-Ching & Roberson, 2002), to guide children's inquiries, and more importantly, articulate to parents and policymakers the critical educational implications of an inquiry curriculum in the early childhood classroom.

Equally essential to establishing an inquiry approach in project work is to examine the learning that takes place through inquiry, so that we may articulate the complexities of inquiry and justify its importance in the early childhood classroom. We begin by examining the inquiry process of one 4-year-old in Joan's early childhood program during a project investigation on "space." We analyze the complex thinking processes involved through inquiry as Marcus engages in project work. We contend that in order to educate parents and our society about good curriculum in early childhood programs, educators must have the tools to articulate what makes the learning process complex when young children engage in inquiry.

INVESTIGATING SPACE

What does inquiry within a multiple ways of knowing framework look like in project work? This is the question we grappled with while implementing this curriculum. As we have read, discussed, and thought about inquiry and theories of sign systems and transmediation, we have also had the opportunity to put these theories into practice in Joan's preschool program.

Through Joan's work with Carolyn Edwards, who has helped to bring to the United States the work of the early childhood program in Reggio Emilia, Italy (Edwards & Springate, 1993; Edwards et al., 1998), Joan is familiar with the Project Approach, making it the main focus of her preschool curriculum. Some of the projects the children in Joan's preschool explore are trains, sharks, bugs, health, and safety-all questions that emerge out of the children's inquiries. During an exploration of space, we apply the theories of multiple ways of knowing to examine the complex thinking processes involved in "play" as children engage in project work.

This analysis focuses on one child, Marcus; however, we want to emphasize that the other children also explore the concept of space through multiple perspectives. For example, Mallory, an "anthropologist," wonders, "How do astronauts live?" She decides to dictate a story about life in space. Dustin, the "artist," asks, "What might aliens look like?" He uses a variety of media to create renditions of aliens. Amos, our "naturalist" is most interested in researching questions about space

such as, "How many moons does each planet have?" making charts of his findings. And Max, the "actor" wants to know, "What is an astronaut?" He proceeds to engage in dramatic play to act like an astronaut. And while the children all investigate space in interesting ways, we find Marcus to be particularly engaged in the investigation topic.

Profile of Marcus and His Inquiry on Space

Marcus is 4-1/2 years old. He has well-developed spatial abilities as expressed through his constructions at the block area and use of patterns and symmetry. He has difficulty concentrating and can be easily distracted. His language skills are normal, although he often uses sound effects to express his ideas, for example, "This is a rocket that whoosh zings to that place there."

During the investigation of space, Marcus enthusiastically participates in nearly every activity. Through these activities, a process that Short and Harste (1996) describe as "wandering and wondering," Marcus poses an inquiry question, "*How* can we make a rocket?" To this end he explores his question relating to space, looking at and pointing out pictures of rockets in books, asking to view video images, and then expressing this knowledge by transmediating within various sign systems.

Multiple Sign Systems and Transmediation

Sign systems stem from theories in semiotics (Peirce, 1985). They are human-invented tools that we use to reinterpret meaning, to express felt meaning, and to construct new meaning. They may take the form of music, visual art, dance, language, mathematics, gesture, and drama, which we use to mediate our world (Eisner, 1994; Harste, 1994). Sign systems also support exploration of diverse perspectives when children approach a topic from the perspective of different disciplines (Kirby & Kuykendall, 1991). Children can inquire as an artist leading to the creation of new possibilities. They might inquire as an anthropologist who makes connections and perceives relationships. A naturalist might see details that make sense of relationships. In every discipline, the inquirer is open to possibilities, relating smaller details to larger contexts of understanding. Berghoff et al. (2000) maintain that the simultaneous use of sign systems supports the "semiotic process" learners engage in when they move from one sign system to another and back again. Through this semiotic process, learners transfer, or transmediate, the content and expression in one sign system to another (Harste, 1994; Suhor 1992).

Harste (1994) contends that transmediation is "a highly literate process" and the "key process" of literacy (p. 1226). He contends that "real growth" occurs when learners, unable to articulate themselves in one sign system, may clarify meaning in another (pp. 1226–1227). The more complex the meaning being made or expressed, the more likely that multiple sign systems will be used to communicate those meanings (Short & Burke, 1991).

Constructing Meaning Through Drama

Marcus's interest in rockets is stimulated initially by viewing the blast-off scene from the movie *Apollo 13*. He is fascinated by the rocket, the launch tower, and the fiery blast off. "How do they get the fire out?" he asks. During the video, Marcus does not sit still and simply watch; he engages in dramatic play imitating actions he observes on the video: he lies down in his "rocket ship" and "takes off" or "floats around" (Fig. 1). After watching the first video clip, Marcus spends nearly the entire day in role-play. He creates "space ships" in the drama corner by pushing furniture together to make an enclosed space. At one point the astronauts are in danger of crocodile attack! Over the next few days Marcus continues to explore his interest in space with dramatic play. While looking at a book, Marcus thinks like a "director," suggesting props that enhance his dramatic play: "We need a backpack like this. And we need tools like this. We can use the shovel and hoe from outside. We can clean them off. And we need all these things. And food. And a flag! We can make one."

Eisner (1994) describes three modes for treating sign systems, or what he refers to as forms of representation. He purports that the conventional mode comprises the cultural conventions that a given society agrees on as a standard interpretation of knowing. The mimetic mode "extract[s] the salient features of some aspect of the world and represent[s] them as an image within some medium" (p. 49). The expressive mode represents the "deep structure" of an object or event or "its expressive character" (p. 52).

Eisner's modes of representational forms are evident in Marcus's ongoing inquiry. About a week after viewing the video, a few children choose to watch it again. As a result of this second viewing, Marcus moves to a different medium to explore his observations and knowledge, transmediating his exploration of rockets from the sign system of drama to a new sign system. But inherent in this transmediation is Marcus's gradual shift from the surface, mimetic mode to a deeper, expressive mode of representation. This shift to deeper levels of understanding is significant because it teaches us that young children's engagement in project work is more than "play" or an amusing activity for self- or shared entertainment. It is an involved thinking process through which children's inquiries drive their learning to more complex and multifaceted ways of knowing.

Transmediating Meaning Through Construction and Architectural Design

Over the next few days, Marcus makes several attempts to construct a rocket and lift-off tower. He uses "little people" toy figures as astronauts, switching his dramatic play to building rocket structures with blocks (Fig.

Fig. 1. Marcus Inquires Through Drama After Viewing *Apollo 13*

Fig. 2. Marcus Constructs a Rocket and Lift-Off Tower with Blocks

2). He uses the sign system of drawing while simultaneously building with blocks, drawing simple rockets on paper with fuselage and fire coming out from the bottom. He continues to explore space books, with particular interest in pictures of rockets and space shuttles. With Joan's assistance, he reads the class's questions from the question board and provides his own answers.

During this time a box of junk construction materials is set out and children are invited to use them to create rockets. Surprisingly, Marcus shows little interest in this activity until he observes Jack building a rocket with the junk materials. Marcus builds his "junk" rocket based on the same model that he uses in his block constructions and drawings, thereby representing his conceptual understanding of rockets in a different way (Fig. 3).

Refining Conceptual Understandings

After the construction of his junk rocket, Marcus's drawings begin to take on a new complexity. He records many more details in his drawings (Fig. 4). He draws the tower structure and decals on the rocket itself. He takes considerable time, thinking through, and concentrating on a large rendition of his rocket on the dry erase board. He remains focused throughout this activity and requests that Joan photograph his drawing. (This is the way Joan helps the children preserve their work.) Marcus continues to build and draw, indicating he is still

Fig. 3. Marcus's Rocket Made from Junk Materials from the Construction Box
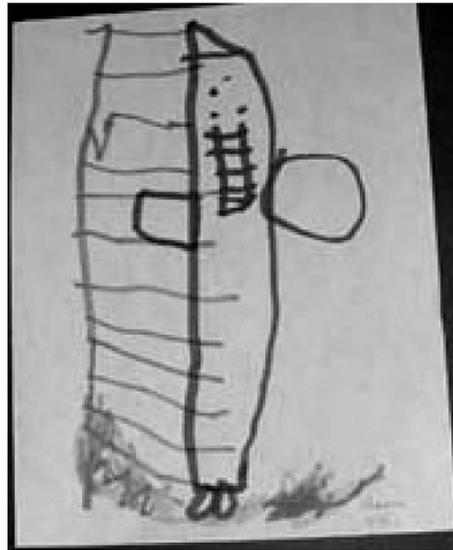
Fig. 4. Marcus's Drawing Showing Increasing Detail with Launch Tower and Fuselage Decal

thinking about rockets, trying to "know" rockets and understand their relationship to the launch tower. He transfers his understanding from one medium (blocks) to another (junk construction) to another (drawing) and back again. He also continues to engage in role-play with other children.

He reviews the video a third time and observes the space capsule's re-entry to Earth. He makes two more observations: (a) the space capsule is where the astronauts operate the rocket, and (b) the booster rockets are the source of the fire that shoot out from the rocket. With these newly formed discoveries, Marcus separates these items in his drawings, adding "fire" to the bottom of the fuselage, indicating its takeoff. He explains, "They blast off and then this part comes off and falls in the water." This demonstration teaches us that beyond understanding the rocket's form, Marcus is thinking about rocket function as it relates to the problem of lift off and landing.

One day, Marcus's Playschool class visits the Morrill Hall Natural History Museum located nearby on a university campus, and on display is a model of a space shuttle. From this moment, Marcus begins researching and drawing shuttle plans. He scours books for pictures of space shuttles. He identifies three main structures: the fuel tank, booster rockets, and shuttle. After completing initial work on his model, Marcus again transfers his understanding to a more complex drawing, which he designs with Dustin, stimulating much collaborative discussion. Dustin works on the astronaut and alien, while

Marcus draws the shuttle structures. Over the next few days Marcus shifts back and forth between drawing and modifying his model. He asks the teacher to cut open bay doors "for the satellite," adds parachutes to the booster rockets, and paints the structures.

After finding a blueprint of a space station, Marcus's inventor perspective identifies a problem, "how to build a space station," in which he uses the blueprint to build a new model. In collaboration with Amos, the "naturalist" who brings to the effort attention to detail, the two boys draw their half of the plan, then tape their individual plans together to create one complete plan (Fig. 5). As they work they ask questions and discuss further related topics about space, learning about solar cells and living spaces.

Their discussions lead them into using paper and foil to make solar cells. They connect the PVC pipes, tape on the solar cells, and use geocubes for other structures, such as a stairway. When the structure is complete Joan hangs it from the ceiling. But when Marcus revisits the book and notices an illustration with a meteor hitting the space station, he constructs an escape rocket for astronauts to use should such a catastrophe occur to his space station. It is interesting to note that his earliest inquiries in rockets involved a preference of one sign

Fig. 5. Marcus (on right) and Amos Make Their Blueprint of the Shuttle and Space Station

system at a time. However, as he engages in his inquiry over a period of time, he appears to move with greater ease among sign systems.

Reflection on Marcus's Inquiry

Marcus's series of inquiries within the Playschool's project work on space is involved, reflective, creative, intellectual, and semiotic. His initial inquiry question emerges from his observation of a space shuttle. Through this observation and a burning desire to know, Marcus's inquiry proceeds through a series of complex processes requiring his critical thinking, self-driven research, analysis, and synthesis. He embodies what it is like to be an astronaut through dramatic play, but then pushes his thinking further by constructing the world of astronauts using props and supplies. He steps outside his dramatic play to analyze space environments further, creating new ways to represent his understanding in deeper, more expressive modes.

His ability to step outside of his creative world enables him to transmediate his understanding of rockets from drama to architectural design. He continually reflects on what he knows, inquiring further and refining his understanding. Moreover, he makes observations, researches through books, adds more details, and opens himself to new lines of inquiry as he wonders about how to build a space shuttle and space station. His use of different sign systems gives his investigation of how to build space ships depth and meaning.

Helm and Katz (2001) describe the role of representational drawing in helping children make sense of their world during project investigations. However, we have learned that meaning-making is not just a function of drawing, but of all sign systems. Time is a factor, allowing children to both construct knowledge and explore this knowledge via different sign systems. Collaboration between children who inquire through different sign systems broadens their learning. The children in Joan's preschool also teach us that rather than detracting from language and literacy skills, their movement through multiple sign systems improves these skills quite naturally. Marcus's ability to use language to describe rocket structure and function as well as describe signs and labels he creates are examples of his improving language and literacy skills as he investigates rockets.

Certainly Marcus's drawings are a way through which we interpret his growing understanding, but this understanding does not come through nor is expressed by drawing alone. Without drama, block construction, junk construction, and language it is doubtful Marcus

would have been as successful as he is in developing his knowledge about spacecraft. This process has helped us to realize the importance of multiple sign systems for exploring, expressing, and assessing learning.

A MODEL FOR INQUIRY IN THE EARLY CHILDHOOD CLASSROOM

Based on Marcus's inquiry process, the observations of other children in Joan's Playschool, and drawing on the work of the curriculum-as-inquiry model put forth by Short and Harste (1996), we can construct a model (Fig. 6) for inquiry tailored for the early childhood classroom. The inquiry cycle for the early childhood classroom, although linear in appearance, represents cycles within cycles. That is, some children may move linearly through the inquiry cycle, while others may take detours and circle back several times within the cycle before progressing forward. Such is the case with Marcus, whose inquiries involve a series of sign and knowledge system explorations, analyses, and trans-

mediations before he can feel comfortable moving forward.

We present the inquiry cycle to early childhood educators to serve as a framework for what is possible in their programs or classrooms. The inquiry cycle helps educators recognize that what might at first appear as idle play, is really part of young children's inquiries through multiple-sign and knowledge systems. The process of children's inquiries involves much critical, reflective, and analytical thought-all essential to their development and growth. We also hope that the inquiry cycle can be used to assist educators in identifying evidence of learning and articulating to parents the complex thinking processes involved in the young child's inquiry process.

CONCLUSION

The inquiry early childhood classroom is an extension of the life inquiries that children have had since birth. Inquiry teachers understand that children's life in-
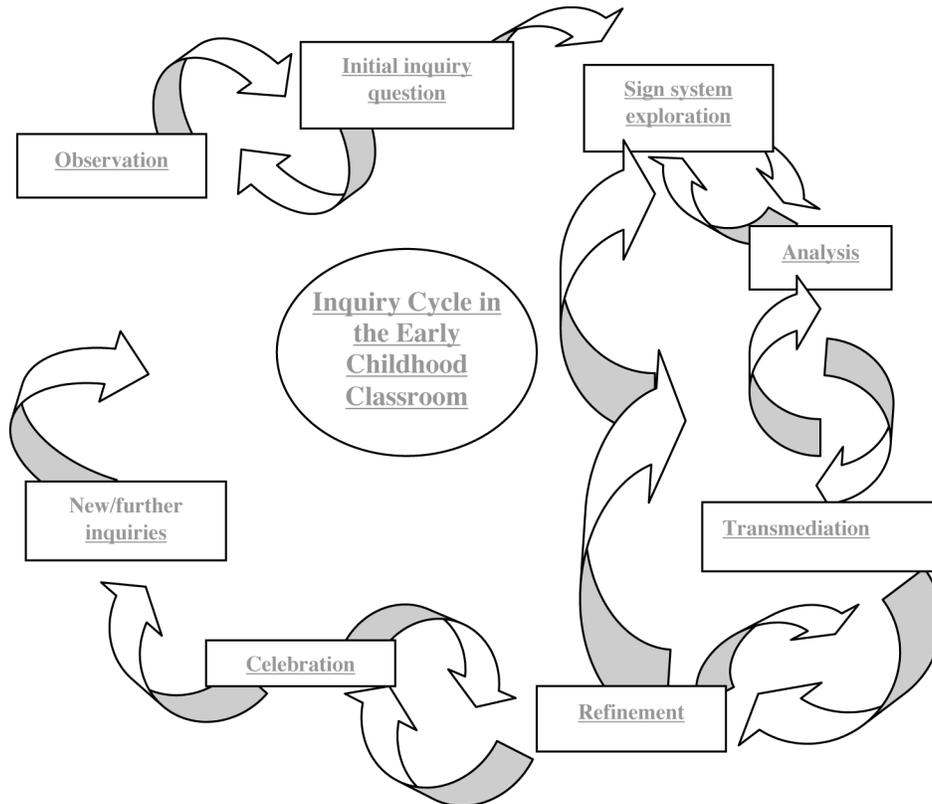

Fig. 6. Inquiry Model for the Early Childhood Classroom Adapted from Short and Harste, with Burke's, 1996 Curriculum-as-Inquiry Model

quiries, often termed "play," may be spontaneous and driven by children's need to understand their world. These inquiries are key in their lifelong development and, therefore, must be nurtured and cultivated. Further, it is important that early childhood educators discern between "play" and acts of inquiry to broaden their lens for approaching student learning in richer and meaningful ways. Thus, as teachers create inquiry curricula around students' interests and strengths, they also help children broaden the ways in which they think, question, and explore through transmediations across multiple sign systems. We are convinced that when educators critically identify and analyze acts of inquiry in the early childhood classroom, they are better positioned to articulate these instances to parents, policymakers, the community, and critics of our children's intellectual and creative potentials and possibilities.

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