The Worksheet Dilemma: Benefits of Play-Based Curricula

Sue Grossman, Ph.D.

It was three o'clock and preschool was over for the day. Four-year-old Jamaica, arms full of papers, called out to her mom. Jamaica's mother smiled and asked, "What's all this school work?" Jamaica nodded and handed the papers to her mother. Jamaica had spent a good part of the afternoon in her seat, pencil in hand, filling out worksheets. On one she had drawn lines from the letter "A" to the picture of an apple; from the letter "P" to the pear; and from the letter orange. On another sheet she made her pencil go from the dot on top line to the dot on bottom line, thus making the lower-case letter "l." Jamaica's lines were a bit shaky, and her teacher had written, "You can do better" on the page. Jamaica's mother was concerned when she saw the comment and worried that her daughter was not performing well. In fact, Jamaica's work was fine. Her teacher's expectations were the problem.

In many preschools, child care centers, and kindergartens, young children spend their time on worksheet paper and pencil tasks. Teachers who use worksheets believe they are demonstrating children's learning progress to parents. Unfortunately, for Jamaica and the other children in her class, worksheet activities are not developmentally appropriate and can cause many problems.

The Worksheet Dilemma

Worksheets typically have a "right answer." Jamaica is asked to circle the rhyming words or match the pictures of things that start with the letter "G." She may learn quickly that putting down a wrong answer is emotionally costly. Worksheet activities may make her feel ignorant and incompetent, so that she learns to stop taking risks or guessing.

Problem solving is an element of risk. If we want children to learn to solve problems we must create safe environments in which they feel confident taking risks, making mistakes, learning from them, and trying again (Katz & Anderson, 1992). In a play-based curriculum, each day provides opportunities to learn about reading, writing, and math through real, meaningful situations. For instance, children set the table for snack so each child has one napkin, one straw, and one box of milk. Children string beads to match the pattern on a card or wait their turn because there is room for only four children at the art table. Through these meaningful experiences children learn about number, quantity, size, and other mathematical concepts.

Early childhood education experts agree that the years from birth to age eight are a critical learning time for children (Bruce, 1992; Kostelnik, Soderman, & Whiren, 1993; Willis, 1995). During these years, children have many cognitive, emotional, physical, and social tasks to accomplish (Katz, 1989). While children may have the ability to perform a task, that does not mean that the task is appropriate and should be performed. Educators agree that learning to read, write, and compute are undeniably important skills for children to acquire. The question is how and when they should be learned.

Cognitive Development

Most preschool and kindergarten children are in what Piaget described as the preoperational stage of cognitive development. Letters and numerals typically mean little to the three- to four-year-olds in this stage. These children use concrete rather than abstract symbols to represent objects and ideas (Bodrova & Leong, 1996). Through pretending, children develop the ability mentally to represent the world (Bredekamp, 1987; Stone, 1995). Reading requires a child to look at symbols or representations (i.e., letters and words) and extract meaning from them. A play-based curriculum offers children opportunities throughout the day to develop the ability to think about by experiencing real objects using their senses (Bredekamp, 1987; Kostelnik, Soderman, & Whiren, 1993). Blocks can represent an airplane or a train. High heels can transform a preschooler into mother or princess. Blocks and high heels are three dimensional, tangible objects. Sufficient practice using concrete objects as symbols is a necessary prerequisite to the use and comprehension of print (Stone, 1995).

Mathematical understanding is more than recognizing numerals and shapes. Sorting, categorizing, putting items in a series, and problem solving are all important math concepts (Raines & Canady, 1990). The teacher may believe that Jamaica understands the concept of "four" if she circles four flowers on the worksheet. But unless Jamaica can transfer that learning to other situations, such as the number of places to set for four people, Jamaica does not truly understand what "four" means. Similarly, a child may be able to print the letters "R," "U," and "N" on a worksheet, but be unable to read the word "run" when she sees it in a book. The mere accomplishment of the worksheet task does not signify an ability to read or comprehend.

Emotional Development

In any group of young children asked to complete a pencil task, some will succeed and some will be less successful. The successful children may truly comprehend the task or may simply have guessed correctly. The less successful ones often learn to think of themselves as failures, and ultimately may give up on school and on themselves (Katz & Chard, 1989). These children may react to the stress and anxiety of giving the wrong answers by acting out their frustrations and becoming behavior problems or withdrawing and becoming reclusive (Charlesworth, 1996). Parents may report school phobic behaviors such as stomach aches in the morning or refusal to get into the car to go to preschool. These children have learned, at an early age, that school can be an emotionally painful place.

School should be a welcoming, peaceful place for children - an environment to which children come to see what challenging, stimulating, and fun activities are in store. Children know they may not succeed at everything they try, but also know they will be valued for who they are. Children's efforts should be rewarded, so that they will persevere and they will see themselves as learners (Kostelnik, Stein, Whiren, & Soderman, 1993).

Physical Development

Children are born with a need to move (Kostelnik, Soderman, & Whiren, 1993). They wiggle, toddle, run, and climb as naturally as they breathe. When we insist that children sit still and do what

for them may be a meaningless task, such as completing a workbook page, we force children into a situation incompatible with their developmental needs and abilities. When children cannot or will not do such a task, we may label them "immature" or "hyperactive." We may complain about their short attention span, or as in Jamaica's case, criticize her efforts. On the other hand, if we allow children to choose their own task from among appropriate offerings, we may see children as young as three and four years old spend 30 to 45 minutes completely engrossed in play with blocks, painting at the easel, or listening to stories. When we plan developmentally appropriate activities for children, they will attend to them, work hard, and learn (Bredekamp & Rosegrant, 1992).

Before a child can hold a pencil and make an accurate mark on paper, he must have a great deal of small motor control. He needs practice with various materials and objects that require grasping, holding, pinching, and squeezing. He must have ample opportunity to make his own marks with objects such as paint brushes, chalk, fat crayons, and felt-tip markers. Only later, when he has achieved the necessary finger and hand control, should he be asked to form words or numerals with a pencil. The timing of this accomplishment will vary across children. Some four-year-olds and most five-year-olds are ready to write a few letters, notably their own names. But, we must remember that each child develops on his or her own schedule, and some six-year-olds may be just starting this task. If they are encouraged, and not criticized, they will continue to learn and grow and feel confident.

Social Development
Teachers who require young children to perform on paper-and-pencil-like worksheets may be heard exhorting them, "Do your own work," "Use your own paper." There are few situations in the adult world in which we cannot ask a friend or colleague for help with a task, or for their ideas about a problem. In fact, leaders in business and industry say they need employees who can work in teams to solve problems. Yet we ask children to do what are often impossible tasks, and insist that they suffer through them alone.

The foundations for our social relationships are laid in the early years (Kostelnik, Stein, Whiren, & Soderman, 1993). This is the time when we discover the roles we may play, the rules for getting along in society, the consequences of not following rules, and how to make friends. The only way to learn these concepts is to engage actively with others. When we do not allow children enough time to accomplish fundamental social tasks, we set the stage for social problems later on. Middle schools today contend daily with antisocial behaviors that in some cases reach the point of violence. If we expect adolescents to know how to work and live with others, and solve problems peacefully, we would do well to begin the process when children are young.

Developmentally Appropriate Activities
There are many active, and far more interesting, ways for children to begin understanding words and numbers than via worksheets (Mason, 1986). A classroom with a developmentally appropriate curriculum is a print-rich environment. The walls are covered with signs naming objects, stories children have dictated, lists of words they have generated, pictures they have painted and labeled,

and charts of classroom jobs (such as feeding the pet and passing out napkins for snack). At the small motor activities table there may be sandpaper letters to feel and puzzles to complete. Creative activities may include squirting shaving cream onto the table and having children make designs and write their names. And always there are many books to explore, examine, wonder about, listen to, and love as they are read aloud. In these ways, children learn that reading and writing are useful skills, not simply tedious activities adults invent to make school boring. It takes a lot of experience with words and print for children to understand why it is good to be able to read.

What Can Blocks Teach? *by Nancy Thomas*
Block building offers opportunities to grapple with concepts such as comparing, sorting, categorizing (Hirsch, 1984). When children are storing blocks, should be clear where each shape belongs. Putting blocks away is like putting together a puzzle—a learning experience in its own right. This task becomes increasingly complicated when you add to the number of shapes.

Blocks are best stored in low, open shelving with the place for each shape block designated by a silhouette. Cut block silhouettes out of contact paper and affix them to the shelf. Church & Miller (1990) suggest that you store blocks in a "top-bottom, left-right, small-large pattern" as a prereading (sorting and classifying) activity.

References
Hirsch, E.S. (Ed.). (1984). The block book. Washington, DC: Natl. Assn. for the Education of Young Children. Church, E.B., & Miller, K. (1990). Learning through play blocks. New York, NY: Scholastic.

Demonstrating Progress
If we cannot demonstrate children's progress with worksheets, how do we provide evidence of learning? Here are several ways: Portfolios - A portfolio is a collection of a child's work. Portfolios can include the following:

- *Work Samples:* Keep copies of each child's drawings and writing, including invented spelling. Photographs of work of clay, wood, and other materials can also be included. Children should have a say in what is included in their own portfolio. Date each piece so that progress throughout the school year can be noted.
- *Observations:* Keep observational records of what children do in the class. There are many methods of recording children's behavior. Audio and video tape can capture them in action. Occasional anecdotal notes also help.
- *Checklists:* Record children's skill development on checklists. Progress in beginning letter recognition, name writing, and self-help skills, for example, can be listed and checked off as children master them.
- *Appropriate worksheets:* For example, children experimenting with objects to discover if they sink or float can record their observations on paper divided into a float column and a sink column. This shows that they are doing actual scientific experimentation and recording the data.

For more information on portfolios, see *"Why Portfolio-Based Assessment Works"* on page 20 of the January/ February 1996 issue of Early Childhood News.

Parent Newsletters - Teachers can send home periodic parent newsletters which explain the activities children are doing at school and the teacher's goals and objectives. When parents understand the value of developmentally appropriate activities they will feel confident that their children are learning and growing, not "just playing."

Center Labels - Signs in the classroom describing what children learn in the various learning centers help adults understand the value of children's work in the area. In the block corner, for example, children learn about weight, length, balance, volume, and shape, as well as problem solving, social role playing, and cooperation. At the art center, children learn to express themselves on paper and with other media, to solve problems, and to communicate with others. Signs help skeptics see what is really happening as children work at play.

Photographs - Photographs of daily activities in the classroom can be displayed around the room and in hallways. They provide graphic evidence to parents, administrators, and other teachers of children working and learning in a rich, engaging atmosphere.

Conclusion
There are two fundamental problems with worksheets. First, young children do not learn from them what teachers and parents believe they do (Kostelnik, Soderman, & Whiren, 1993). Second, children's time should be spent in more beneficial endeavors (Willis, 1995). The use of abstract numerals and letters, rather than concrete objects, puts too many young children at risk of school failure. This has implications for years to come. Worksheets and workbooks should be used in schools only when children are older and developmentally ready to profit from them (Bredekamp, S. & Rosegrant, T. 1992). Our challenge is to convince parents and others that in a play-based, developmentally appropriate curriculum children are learning important knowledge, skills, and attitudes that will help them be successful in school and later life.

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Other References

Charlesworth, R. & Radeloff, D. (Winter 1995). Mathematical problem solving and young children. Early Childhood Education Journal. (23) 2, 81-88.

Diffily, D. (January 1996). The project approach: A museum exhibit created by kindergartners. Young Children. 51(2), 72-75.

Freeman, E.B. (May 1990). Issues in kindergarten policy and practice. Young Children. (42) 4, 29-39.
Gandini, L. (March/April 1996). Teachers and children together: Constructing new learning. Child Care Information Exchange. 108, 43-46.
Isenberg, J.P. & Jalongo, M.R. (1993). Creative expression and play in early childhood curriculum. Englewood Cliffs, NJ: Prentice-Hall.
Raines, S.C. & Canady, R.J. (1990). The whole language kindergarten. New York: Teachers College, Columbia

University.

Stone, S.J. (September 1995). Wanted: Advocates for play in the primary grades. *Young Children.* (50) 6, 45-54.

Stroud, J.E. (Fall 1995). Block play: Building a foundation for literacy. *Early Childhood Education Journal.* (23) 1, 9-13.

VanHoorn, J.; Nourot, P.; Scales, B; & Alward, K. (1993). *Play at the center of the curriculum.* Englewood Cliffs, NJ: Prentice-Hall.

Wasserman, S. (1990). *Serious players in the primary classroom: Empowering children through active learning experiences.* New York: Teachers College Press.

References

Bee, H. (1992). *The developing child,* 6th Edition. New York: Harper Collins.

Bodrova, E. & Leong, D.J. (1996). *Tools of the mind: The Vygotskian approach to early childhood.* Columbus, OH: Prentice Hall/Merrill.

Bredekamp, S. (Ed.). (1987). *Developmentally appropriate practice in early childhood programs serving children from birth through age eight.* Washington, DC: Natl. Assn. for the Education of Young Children.

Bredekamp, S. & Rosegrant, T. (Eds.). (1992). *Reaching potentials: Appropriate curriculum and assessment for young children.* Washington, DC: Natl. Assn. for the Education Young Children.

Charlesworth, R. (1996). *Understanding child development: For adults who work with young children,* 4th ed. Albany, NY: Delmar.

Fordham, A.E. & Anderson, W.W. (1992). *Play, risk-taking, and the emergence of literacy. In Play's place in public education for young children,* edited by _____ 114. Washington, DC: National Education Association.

Katz, L. (1989). *What should children be doing? In Paciorek, K.M. & Munro, J.H. (Eds.). Annual Editions: Early Childhood Education,* 10th Edition. Guilford, CT.

Katz, L.G. & Chard, S.C. (1989). *Engaging children's minds: The project approach.* Norwood, NJ: Ablex.

Kostelnik, M.J.; Soderman, A.K. (1993). *Developmentally appropriate programs in early childhood education.* New York: Merrill.

Kostelnik, M.J.; Stein, L.C.; Whiren, A.P. & Soderman, A.K. (1993). *Guiding children's social development,* 2nd edition. Albany, NY: Delmar.

Mason, J.M. (1990). In Spodek, B., *Today's kindergarten: Exploring the knowledge base, expanding the curriculum.* New York: Teachers College Press.

Raines, S. & Canady, R.J. The whole language kindergarten. New York: Teachers College, Columbia Univeristy.

Stone, S.J. (1995, September). *Wanted: Advocates for play in the primary grades. Young Children.* 50 (6), 45-54.

Willis, S. (1995). *Teaching young children: Educators seek developmental appropriateness. In Paciorek, K.M., & Munro, J.H. Guilford, CT: Dushkin.

http://www.kidnkaboodle.net/noworksheet.html