Preface

Creative thought and artistic expression: What is the value of these processes and the resulting products for children and families, communities, and society at large? A feature article in *Newsweek* (P. Bronson & Merryman, 2010) asserts that we are in a “creativity crisis”; the authors cite the research of many leading experts who have seen a decline in creative products as support for their claim. Why should educators be concerned about such things at a time when tough talk about academic standards, teacher accountability, and international ranking on tests dominates the educational scene? As this book will demonstrate, the ability to think in innovative and productive ways is a survival skill in a world where we are inundated daily with information (K. Robinson, 2001). In the past, the educated person took pride in knowing something about many things and knowing a few things reasonably well. Today, knowing no longer suffices. Instant access to information has made it relatively easy for us to know, or at least to quickly find out, about virtually any topic. In fact, if the information explosion continues and artificial-intelligence technology advances, the children we work with today will have even less need for the rote memorization of basic content that has characterized traditional early and elementary education.

The audience for *Creative Thinking and Arts-Based Learning: Preschool Through Fourth Grade* needs only to look around to see that expectations for children, teachers, and teacher educators have changed dramatically. Contemporary children are immersed in a world of fleeting images and multiple symbol systems; their challenge is to negotiate the complexities of that increasingly chaotic context. Contemporary teachers are expected to teach for understanding to local, state, and national benchmarks for academic excellence. Today’s college and university faculty are expected by accrediting agencies to demonstrate that their teacher candidates have attained not only knowledge of pedagogy but also the professional dispositions of an effective early childhood or elementary teacher. Across all of these groups, the message is consistent: aim higher, achieve more, and contribute further to society. When the pressure is on, there is a tendency to discredit, disregard, or completely overlook the very thing that is most necessary in the preparation of students and their teachers. At the very time when we are most in need of creative responses in complicated situations, young children are being subjected to constant drill and practice of basic skills. We contend that creative thinking is necessary to survive and thrive in an uncertain future.

*New to This Edition*

We first dreamed of writing a text that would contribute to teachers’ understandings of and commitment to supporting children’s creative thinking back in the 1990s. Our purpose in writing *Creative Thinking and Arts-Based Learning*...
was, and continues to be, preparing teachers who recognize, respect, and nurture children’s creativity, as well as their own. As each edition of this book was produced, we have tried to make it more practical, interesting, research-based, replete with examples, and helpful for college students and their instructors. With this sixth edition, we have made six substantive revisions.

- **Technology Tie-Ins.** Today’s children and many new teachers are “digital natives”—they have never known a time without computers and advanced technologies and, to them, these things are as commonplace as a pencil is to a “digital immigrant” (Prensky, 2001). In response to this, we have carefully selected some free or widely available technology that children and their teachers can use to support creative expression. We then worked with doctoral candidates who are full-time teachers to develop a concise overview of the technology, a synthesis of the research, and collect sample responses (e.g., screen captures or photographs) of children’s work at the preschool, primary, and intermediate levels. These are included in the chapters on creativity, play, music and movement, drama, and assessment.

- **Current Children’s Literature.** One of the great resources for creative teaching is high-quality children’s books. Therefore, instead of merely mentioning a few titles, we decided to really invest in developing a helpful resource that would
  - focus on award-winning picture books recently published, that are aligned to the focus of the chapter;
  - supply a one-line synopsis of the book and relate it to other high-quality children’s books, both contemporary and classic;
  - recommend an age group of children for which the book would be most appropriate (Toddler, Preschool/Kindergarten, 1st/2nd, 3rd/4th); and
  - suggest a teaching activity to complement each cluster of children’s books in the annotated bibliography.

- **Assessment Tools.** Without a doubt, creativity and the arts have fallen on hard times since the passage of the No Child Left Behind Act that ties federal funding to test scores—primarily in reading and, to a lesser extent, in mathematics (Sabol, 2010). Creativity and the arts are aspects of human functioning that are sometimes perplexing, often controversial, and difficult to assess. To address this issue, we have not only revised the assessment chapter but also incorporated assessment ideas into the other chapters as appropriate.

- **There’s an App for That: Using Web 2.0 Tools.** Advances in technology that have made it more interactive and user friendly have also served to expand its potential as a tool for young children’s learning (Bers, 2007; Izumi-Taylor & Blake, 2009; Saracho & Spodek, 2006; Yelland, 2006). Free or inexpensive apps that can be accessed on mobile devices as well as high-quality Web sites are included in the chapters on creativity, play, art, and music, movement, and dance. Early childhood educators will
Preface

find that these resources provide opportunities to enhance their teaching and children’s learning in creativity and the arts.

- **Updated and Reconfigured Figures and Tables.** In the interest of making the book even more current and visually appealing, we located new sources of research support for figures and tables; we also used graphic organizer software to make them more visually appealing.

- **Updated Chapter Content and Resources.** In each chapter we have responded to reviewers’ requests for new content. For example, in Chapter 2 we have added a new section on play and developmentally appropriate practice and, in Chapter 4 on music and movement, we added the latest research on the benefits of physical activity and movement to children’s health and well-being. We have selected end-of-chapter resources to further illustrate ways to use creative thinking and arts-based learning in the classroom. The chapter summary, discussion questions, assessment tools, and children’s literature have been carefully designed to illustrate and support the content and pedagogy described in each chapter. In addition, we have used boldface type for key terms and phrases in each chapter and included those terms in the glossary. Appended materials have been updated to reflect the latest trends, including an entirely new resource on evaluating media for children.

Collectively, these changes constitute at least a 30 percent change in the overall content.

**Purpose**

The first edition of this book was published in 1993. It was the first co-authored textbook for both of us, and, as is the case with many textbooks, we wrote it because we could not find a suitable book for the classes we were teaching in creative expression and play. Through this text, we have attempted to distill the essential research-based perspectives that can guide classroom teachers in promoting creativity, play, art, music, movement, dance, and drama for all children. *Creative Thinking and Arts-Based Learning,* Sixth Edition, also delineates the teacher’s role from a philosophical, pedagogical, and curricular stance by addressing key components, including the classroom environment, materials and resources, behavior management, assessment, and culturally responsive teaching.

There is little question that most educators’ backgrounds in nurturing children’s creativity and promoting learning through the arts are inadequate. For many teachers, preparation for educating students to become creative, critical thinkers and communicate through the arts consists of a single college course. If teachers are expected to function as change agents and advocates of developmentally appropriate practices then they must first understand creativity and the arts:

Let’s consider how young children learn: they learn through the senses and with their brains, bodies, and emotions all working together. They learn by exploring and testing, trial and error, by taking risks—learning by getting it wrong first, so they can get it right next time. They learn imaginatively through
creative leaps and humour, playing with juxtaposition. They learn from everybody around, including peers and playmates, television, the people they see and meet, their surroundings; through copying and social interaction, discovering the external world together; through the worlds of social relationships and personal feelings and expression. They scaffold new learning on what they already know. Above all, they learn through play and artistry of play—musical, linguistic, visual and design, dance, and dramatic play. (O’Toole, 2009, p. 5)

**Audience**

This book is grounded in decades of successful teaching of college courses on children’s creativity and the arts. Because the book has a sound theory and research base, it is well suited for students seeking initial licensure or certification, whether they are enrolled in a community college, a four-year teacher-preparation program, or in a program for students pursuing additional certification or a master’s degree in early childhood or elementary education. *Creative Thinking and Arts-Based Learning: Preschool Through Fourth Grade* is equally appropriate for practicing professionals in early childhood and elementary at various stages in their careers. The book’s universal message of fostering creative and artistic expression is important to professionals who work with children not only in the United States but also throughout the world.

**Our Vision for This Book**

Our vision for this book is that it will equip practitioners in the fields of early childhood and elementary education to counteract stereotypes that run rampant about the contributions of children’s creative thinking; to educate professional colleagues and the general public about creativity and the arts; and to influence schools and communities to regard the creative processes and artistic products of children’s minds with new appreciation and respect. Although many college-level textbooks use the words *creativity* or *art* in their titles, many of these “creative activities” books make minimal contributions to teachers’ creative growth, much less children’s. We contend that any book that claims to center on children’s creative thinking must begin with respect for the child’s intellect. Effective teachers acknowledge children’s ability to construct their own understandings about their world and to express their ideas in original, inventive ways (Eckhoff, 2013). We resent the condescending message of materials that presume to give young children patterns to copy, lines to color inside, and activities that are completely initiated and directed by adults. We decided to write a book that would do a better job of enabling teachers and caregivers to articulate a more enlightened view of children’s creative and artistic growth to families, colleagues, and administrative personnel.

As Karen Gallas (2003) points out, children:

... are open to joy, curiosity, wonder, intuition, experimentation, and exploration. ... But somehow, for most of us and for our children, those things fade into the background as the years pass. School and life become hard, filled with drudgery, repetition, and “have-to’s.” Joy, curiosity, wonder, intuition,
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experimentation, and exploration are shunted aside as the educational process moves forward. We are told that that is the way the process is meant to work: Our children must leave behind childish things like play, performance, invention, and wonder and redirect their attention toward organization, detail, and conformity to archaic concepts of work and the workplace. (p. 169)

Few people possess an understanding of creative thought and artistic expression that is not woefully outdated. They are uninformed or misinformed about decades of research in cognitive psychology, on the human brain, and on the contributions of the arts to cognitive functioning (Wasserman & Zambo, in press). Their ideas about creativity and the arts emphasize natural talent, inspiration, and art as a curricular “frill,” when the research supports instead the importance of training and practice, materials and opportunities, and the arts as a genuine basic (Jalongo, 2003). Our goal for the text is to change the misconceptions and taken-for-granted ways of thinking that disregard children’s natural playfulness, curiosity, and creativity.

Overview of the Book’s Contents

The book is organized into the following four parts:

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<th>Foundations of creative thought</th>
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<tr>
<td>• Creative thought and expression</td>
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<td>• Play, games, and inventions</td>
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<th>The creative arts</th>
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<tr>
<td>• Art</td>
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<td>• Music/movement/dance</td>
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<td>• Dramatic arts</td>
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<th>Creative teaching and assessment</th>
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<td>• Diverse families and communities</td>
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<th>Environments that support creativity and arts-based learning</th>
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<tr>
<td>• Environmental design</td>
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<td>• Materials and resources</td>
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The book begins with two chapters that form the foundation for the remaining chapters. Chapter 1 discusses creative thought: how it is defined, how it develops, and what adults can do to foster its growth. Chapter 2 examines children’s play, games, and inventions and how these modes of inquiry support children’s learning across the disciplines. After establishing this base, Part 2 (Chapters 3 through 5) addresses the subject areas that are traditionally associated with the creative arts (art; music, movement, and dance; and
the dramatic arts). Chapters 6 through 8 (Part 3) delve into the teacher’s role—supporting creative expression and play, assessing creative processes and products, and working with diverse families and communities. Part 4 (Chapters 9 and 10) focuses on the effective design and use of environments, materials, and resources.

The chapters include the following features that make them more practical, readable, and helpful:

- **Classroom Perspectives** consist of scenarios from preschool through kindergarten, first through second grade, and third through fourth grade—presented at the beginning of each chapter to serve as the basis for class discussion.
- **Teachers’ Reflections** share the voices of our students as they gained insight into the contributions of creative thinking and arts-based learning to their teaching effectiveness.
- **Frequently Asked Questions** dispel misconceptions about creativity and the arts by supplying research-based responses.
- **Meeting Standards**, a compilation of guidelines from various organizations and states, demonstrate how learning experiences in each of the creative arts and play align with expectations for teachers.
- **Differentiating Instruction: Accommodations for Diverse Learners** sections, included in some chapters, begin with general suggestions and then offer practical ideas for including children with emotional and intellectual, visual, hearing, and orthopedic impairments in creative thinking and arts-based learning.
- **Integrating the Curriculum** sections, included in some chapters, present a teaching theme that is suitable for each group—toddlers, preschool, primary, intermediate—and include communication (literacy, language arts, and technology), the sciences (mathematics/science), and social studies (social studies, health, and safety).

**Expanded Ancillary Package**

The sixth edition includes an expanded ancillary package. Please note that material from the fourth edition Companion Web site has been moved to the *Instructor’s Manual* and *Test Bank*. The *Test Bank* includes test questions with responses, and the *Instructor’s Manual* lists outstanding children’s literature to accompany the content-area chapters, as well as a suggested Interview and a Write-to-Learn activity. Another technology-based support for the instructor is a complete set of color PowerPoint® slides that highlight key concepts from the chapters. PowerPoint® slides can be used as provided in an onscreen show using a computer and projector. All instructor ancillary products are available online and can be downloaded from the Educators section at www.pearsonhighered.com by educators who adopt the text. Finally, many Learning Management Systems versions of the *Test Bank* are also available for downloading.
Preface

Acknowledgments

We are deeply indebted to the many people who contributed to the development of this book. First and foremost, we would like to thank the colleagues and doctoral advisees who helped us expand the book’s scope to include the elementary years. Their names are listed in the table of contents, but we also wish to acknowledge their contributions here. Laurie Nicholson Stamp, faculty member and Dean’s Associate at Indiana University of Pennsylvania, contributed to an earlier version of Chapter 4 on music, movement, and dance. Marilyn J. Narey, faculty member at Carlow University and former art teacher, contributed to an earlier version of the art and assessment chapters. Shana Barr and Karen Curtis, former graduate assistants, assisted with the dramatic arts and environment chapters. Doctoral candidates who worked on the Technology Tie-Ins were Brianna Carney, Megan Cicconi, Colleen DiBuono, Josh DeSantis, and Jennifer Thorp. We wish to acknowledge the graduate and undergraduate students at George Mason University and Indiana University of Pennsylvania for their cooperation in field-testing this book and for providing us with many of the rich classroom examples that appear throughout these chapters. Our former graduate assistants Natalie Conrad Barnyak, currently a faculty member at University of Pittsburgh Johnstown, and Norah Hooper, now a faculty member at Mary Washington University, merit special recognition for their work on past editions of the Instructor’s Manual and Test Bank. We thank Angela Eckoff of Old Dominion for her work on the IM that accompanies the sixth edition of the text and Rekha Rajan for her updates to the current Test Bank. Mary Grace Stutzman and Nicole Olbrish, doctoral candidates at Indiana University of Pennsylvania, contributed the scenario-type test items for each chapter to the Test Bank. Elizabeth Silvia and Jennifer Durham worked on the Differentiating Instruction and Adapting Curriculum for Diverse Learners text features. We are also grateful to the many teachers, parents, and children whose photographs, art material, and stories are an integral part of this text. Thanks, too, to our many colleagues who helped us further clarify our thinking about children’s creative thought and artistic expression.

We want to thank our editor for this edition, Julie Peters, who offered unflagging guidance and support. We are also grateful to the rest of the staff at Pearson who made the publication of this book possible, particularly our former editor, Ann Davis. They are a fine group of professionals and have been a pleasure to work with throughout the book’s production. In addition, we appreciate the valuable input from those who reviewed the book: Michelle Bauml, Texas Christian University; Dan Corbett, University of Minnesota Duluth; and Rekha Rajan, Arts Education Consultant.

Finally, we wish to acknowledge the continuous support of our families and close friends. We are especially grateful for their encouragement, understanding, and willingness to listen through each phase of the development of the book from the first to the sixth edition.

A Final Word

In education, there are three common misconceptions about teaching and learning—that it is all content, that it is all process, and that there is one best
curriculum for all children (Eisner, 1990, 1998). Fortunately, any instructor who would choose our book for a course would also be likely to avoid these three monumental errors. When it is approached with an open mind, the study of children’s creative thought and artistic expression is a powerful reminder that content coverage, aimless wanderings, and a search for panaceas will not work. Rather, effective teachers must differentiate instruction in order to engage students in meaningful learning experiences and create learning communities in an increasingly diverse society and global village. When these perspectives are brought to teaching, teachers and teacher educators become more effective, intentional, and reflective practitioners.

It has been gratifying to see the book that began as hopeful dreaming evolve into print. It has been humbling to realize, with each edition of the work, the amount of information we need to master in order to remain current in a rapidly changing and multidisciplinary field. It also has been encouraging to watch our collaborative efforts endure in the fiercely competitive college textbook market for 20 years. As authors, we have been privileged to revisit our work and refashion it—each time, we trust, into a college-level text that better meets the needs of contemporary children, educators, and teacher educators.

Joan Packer Isenberg
Fairfax, Virginia

Mary Renck Jalongo
Indiana, Pennsylvania
PART 1
FOUNDATIONS OF
CREATIVE THOUGHT

Chapter 1 Understanding Children’s Creative Thought and Expression

Chapter 2 Supporting Children’s Play, Games, and Inventions
Chapter 1

Understanding Children’s Creative Thought and Expression

Mary Renck Jalongo and Marilyn J. Narey
Chapter 1  Understanding Children’s Creative Thought and Expression

Creativity stands at the center of educating children who will be scientists, inventors, artists, musicians, dramatists, innovators, and problem solvers of the future.

Kristen M. Kemple and Shari A. Nissenberg, 2000, p. 67

LEARNING OUTCOMES

After reading this chapter and completing the activities throughout, you will be able to:

- Define creative thought, describe the creative process, and list the components of creative thinking
- Describe the development of creative thought and expression in young children
- Identify the characteristics of creative processes and products
- Explain the strategies that early childhood educators can use to support creative thought and expression in young children
- List ways of using technology as a tool for supporting young children’s creativity and imagination
- Understand and identify families’ and teachers’ roles in promoting creativity

CLASSROOM PERSPECTIVES ON CREATIVITY

Preschool–Kindergarten

Two 4-year-old boys balance empty margarine tubs on their heads, hum loudly, and play imaginary instruments, as if they were in a marching band. The teacher tells them that the plastic tubs are for holding puzzle pieces and directs them to put everything away. The boys comply with her request, but a few moments later they disrupt play in the family living center and are reprimanded for misbehavior.

First Grade–Second Grade

A group of kindergarten and first-grade children are playing house. Their teacher is surprised by some of the gender roles and themes reflected in their dialogue:

Girl 1:  (speaking to a boy while running a toy sweeper) Get out; you’re making a mess!
Boy: I didn’t do anything wrong. I’m playing by myself.
Part 1  Foundations of Creative Thought

Girl 2: Don’t, Honey. I already swept the floor; now I’ll have to do it again. (sweeps the floor, picks up a doll, and speaks to the boy) You’re her daddy. Our little girl needs to see you. You’re her daddy.

Boy: No, I'm not. I have 10 brothers and we are going to see a movie that’s rated PG.

Girl 1: Daddy, Dad, come here.

Boy: This is stupid. I didn’t do anything bad. Let’s play. (moves a wooden ramp across the entrance to the housekeeping area) Honey, pretend this is a jail and I can’t get out. See, I got on handcuffs. (puts wrists together)

Girl 1: I can get you out. See, I just did.

Girl 2: Daddy, Daddy. I want to be the baby.

Girl 1: No, you will not be the baby.

Girl 2: I am the baby—goo, goo, ga, ga. (grabs baby bottle and crawls on the floor with it in her mouth)

Girl 1: Then who’s going to be the father?

Boy: Not me; I’m going to work.

Third Grade–Fourth Grade

Children who are at least one year below grade level in reading are enrolled in summer school and their district’s program emphasizes using literacy to accomplish important community goals. Today, the students are presented with a challenge: The local animal shelter is full to capacity with homeless dogs and cats and the director asks them to help. The children form small groups to plan their strategy. One group does research on the Internet to find innovative ideas that promote pet adoption. Another group helps implement the idea of posting videos of the animals on the shelter’s Web site. A third group uses digital photos to design posters advertising an “adoptathon” at the local pet store chain. As they work on these projects, the students use their research skills, creative thinking, interpersonal skills, and literacy skills to save animals and make a contribution to their community.

These vignettes raise many questions about creativity, including what creative thought is, how children’s creative thinking is distinct from that of adults, and what adults do to help or hinder children’s creative growth. In this chapter, we explore the role of creative thought and expression in children’s lives and its rightful place in the curriculum.

DEFINING CREATIVE THOUGHT

Ideas about creativity are full of contradictions and misconceptions. People may, for example,

- Say that creativity is an asset, but have difficulty explaining it or identifying it (Jalongo & Hirsh, 2012; McDaniel & Thorn, 1997)
CREATIVITY: Anna’s Story

As you read this description of Anna’s behavior in kindergarten, think about how children use their imaginations in ways that are distinctive from that of adults.

This is Anna’s self-portrait made on the first day of kindergarten. When asked to complete the sentence “On the first day of school, I felt . . .” she wrote skarb (scared).

Ever since Anna could talk, she has been entertaining her family with stories about her adventures with her imaginary friends, who are a dentist named Doctors and a dental hygienist named Debbie (Debbie is sometimes a dental hygienist and, at other times, she is a dentist). These are the images she painted of them with watercolors.
Part 1 Foundations of Creative Thought

Anna has a cat and wants to get a dog too; she loves the series of popular movies about a St. Bernard named *Beethoven* and also the movie *Hotel for Dogs*. She has a large collection of stuffed animals that she has many adventures with and she gets upset if anyone says that they aren’t real. Anna used her imagination during play with a small plastic toy dog that she named Boy as a way to pretend that she had a dog. She often keeps him perched on her shoulder; note that he is wearing an Elizabethan collar Anna made; it is used by veterinarians to keep dogs from taking out their stitches!
This is her explanation about Boy:

*I found Boy at a pet store. He needed an owner because he was just a little puppy, and he kept getting stomped on by the big dogs in the cage. So he squeezed out of the bars of the cage into my hands. So that’s why I bought him, to take care of him. Then one day he fell out of the bed I made for him on my nightstand out of covers. He rolled onto the floor and he hurt his neck. I picked him up real gentle and gave him a kiss, and told him I would take care of him. So I took him to the vet with Debbie and Doctors, and the vet said they didn’t have a cone big enough for him. So we went home and Debbie and Doctors made him one out of plastic. We have to keep the cone on for a while, at least 1 or 2 days, at least, and give him lots of love!*

Anna will be starting first grade this fall. She visited a real doctor to get a checkup and the office staff was mortified when a mouse went running through the waiting room. Anna’s first question when she saw the doctor was, “What is your mouse’s name?”

While she is waiting for and dreaming about getting a dog, she enjoys meeting her friends at the park so that she and her little sister Ava can take a friend’s two dogs for a walk. Anna said, “I only ever walked my grandma’s dog before; it weighs three pounds.” When the owner calculated that she was now walking over 100 pounds of dog, Anna said, “Wait until I tell my friends—they’re going to be shocked!”

On the first day of school, Anna decided to bring Boy for show and tell; she said that he “pretended to be a toy” so that she could take him along and show him to her classmates, teacher, and principal.
Part 1 Foundations of Creative Thought

- Claim that everyone is creative, yet think that only people who are wealthy and “cultured” are entitled to participate in the arts (Kerka, 2002)
- Recognize the importance of creativity, both for the individual and society, yet continue to think of creative pursuits as frivolous activities that take away time from more serious, academic study (Horibe, 2001; K. Robinson, 2011)
- Admire creative behavior in adults, yet fail to recognize or respect it in children (Rooks, 2010)
- View creativity as inspired where inventions and technological advances are concerned, yet say that creative individuals are impractical or socially maladjusted (R. E. Peterson, 2001/2002)

The word create comes from the Latin word creare, which means “to make a thing which has not been made before; to bring into being” (Barnhart & Barnhart, 1983). Based on these origins, the word create is used in contemporary society to mean to invent, or produce; to approach the realm of art (imaginative, artistic, literary); and to produce something useful or worthwhile (constructive, purposeful). In addition, because creative thought can be put to negative or destructive ends, positive intentions must underlie creativity (Craft, 2006; Gino & Ariely, 2012). To summarize, the creative process consists of “the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context” (Plucker & Beghetto, 2004, p. 90).

Over the years, originality has been a constant factor in discussions of creative processes and products but being different is not enough (Runco & Jaeger, 2012). It would surely be different for a college student to decide to dress in a gorilla costume and sit on the roof of the tallest building on campus to eat lunch; however, this is merely bizarre behavior. The creative response

![Image of children playing in a sandbox]

*Children need social support to develop their potential for creative thought.*
Chapter 1  Understanding Children’s Creative Thought and Expression

or product must also be effective, defined as relevant to the issue at stake and capable of offering some type of genuine solution (A. J. Cropley, 2001).

A first step in clearing up the confusion about creativity is to treat creativity as a mental and social process (Carlo, 2009) and a form of intelligence (Nusbaum & Silvia, 2011). Creativity is essential to learning because it enables the learner to make connections:

Underlying learning is the process of thinking. We go through the process of thinking to create meaning. We create meaning by making a connection between the new information and what we already know so that the new information “makes sense.” . . . If we are respectful enough of all of a child’s connection making, the chances are that he will be a daring connection-maker. . . . He will also be a very good learner. (Prince & Logan, 2005, pp. 155, 158)

Creativity is a key component in Sternberg’s (2008) triarchic theory of intelligence, which combines three interrelated ways of thinking:

1. Creative thought, which includes creating, designing, imagining, and supposing
2. Analytical thought, which includes analyzing, comparing/contrasting, evaluating, and explaining
3. Practical thought, which includes using, applying, and implementing

As Sternberg (2008) explains, “We need creative abilities to generate ideas, analytical abilities to determine whether they are good ideas, and practical abilities to implement the ideas and to convince others of the value of our ideas. Most people who are successfully intelligent are not equal in these three areas, but they find ways of making the three abilities work harmoniously together” (p. 153).

Creativity is both a cognitive (thinking) and affective (feeling) process (Blake & Giannangelo, 2012; Feldhusen, 2001; Russ, 2011). Table 1.1 is an overview of the cognitive and affective dimensions of creative thought.

The children described in the vignettes that introduced this chapter demonstrated this cognitive–affective connection as they referred to their previous experiences (an absent father), responded to objects (making margarine tubs into band hats), used symbols (hands joined to represent handcuffs), discussed ideas (a PG-rated movie), collaborated with other people (animal shelter personnel), and responded to situations (homeless animals).

Does this mean that everyone is creative to some extent? Yes. While there are different dimensions and levels of creativity, every child is creative if given the chance to be; “everyone has creative potential but developing it requires a balance between skill and control and the freedom to experiment and take risks” (K. Robinson, 2001, p. 445). This does not mean that all of us will produce a remarkable invention, perform on stage, or see our art displayed in a gallery. A teacher who designs an engaging learning activity for the students is being creative. A mother who provides nutritious, tasty meals on a very limited food budget is being creative. A child who fashions an animal out of clay is being creative. When we meet life’s challenges and resolve problems, we are being creative (Richard, 2010; Ripple, 1989; Runco & Cayirdag, 2012; R. K. Sawyer, 2012). There is an important distinction between creative potential and creative behavior. Creative potential refers to an individual’s

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**Creative potential**
A person’s overall capacity to think in fluent, flexible, original, and effective ways.
capacity for behaving in creative ways; it includes the cognitive abilities, processes, and individual dispositions that facilitate creative behavior (Ivcevic, 2009). Creative behavior, on the other hand, is a manifestation of creativity—it refers to actions, communicated ideas, or products that result from the interaction between individual potential and situational or cultural influences (Ivcevic, 2009).

According to the classic theory of creativity, the creative process consists of four stages (Wallas, 1926). The stages are recursive, meaning that a person may move back and forth between and among them, rather than following

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<tr>
<th>Table 1.1 Dimensions of Creativity</th>
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<tbody>
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<td><strong>Four Cognitive Dimensions</strong> <em>Creativity as a Thinking Process</em></td>
</tr>
<tr>
<td>1. Fluency</td>
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<tr>
<td>- Generating a large quantity of relevant responses</td>
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<tr>
<td>- Following a train of thought</td>
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<tr>
<td>- Building up collections of related ideas</td>
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<tr>
<td>2. Flexibility/Adaptability</td>
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<tr>
<td>- Approaching things in alternative ways</td>
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<td>- Changing categories as appropriate</td>
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<td>- Viewing the problem from a different perspective</td>
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<td>3. Originality</td>
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<tr>
<td>- Producing unusual, novel, unique, or clever ideas</td>
</tr>
<tr>
<td>- Combining known ideas into some new form and connecting the seemingly unconnected</td>
</tr>
<tr>
<td>4. Elaboration</td>
</tr>
<tr>
<td>- Filling out ideas and adding interesting details</td>
</tr>
<tr>
<td>- Stretching or expanding on an idea</td>
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<table>
<thead>
<tr>
<th><strong>Four Affective Dimensions</strong> <em>Creativity as a Feeling Process</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Curiosity</td>
</tr>
<tr>
<td>- Wondering, puzzling about something</td>
</tr>
<tr>
<td>- Playing with ideas</td>
</tr>
<tr>
<td>- Following intuition to see what happens</td>
</tr>
<tr>
<td>2. Complexity</td>
</tr>
<tr>
<td>- Feeling challenged to do things in detailed ways</td>
</tr>
<tr>
<td>- Seeking many different alternatives</td>
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<tr>
<td>- Bringing order out of chaos</td>
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<tr>
<td>- Seeing missing parts and sensing how to move between what is and what could be</td>
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<tr>
<td>3. Risk-Taking</td>
</tr>
<tr>
<td>- A willingness to express ideas to others</td>
</tr>
<tr>
<td>- The courage to expose self to criticism or failure</td>
</tr>
<tr>
<td>- The confidence to follow a hunch and “invest” in a humble idea</td>
</tr>
<tr>
<td>4. Imagination and Fantasy</td>
</tr>
<tr>
<td>- The ability to form rich and varied mental images (“what if”/“as if”)</td>
</tr>
<tr>
<td>- The ability to put oneself in another place, time, or person’s shoes</td>
</tr>
<tr>
<td>- An intuitive sense of what might be or what something might become</td>
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</tbody>
</table>

*Sources: Data from A. J. Cohen (2011); Guilford (1984); Sternberg (2006a).*
them in an invariant sequence from first to last. These stages in the creative process are summarized in Figure 1.1. As you look at the stages, reflect on how they relate to the process that you use to come up with an original idea and carry it through to completion.

Creative thinking in children is both alike and different from that of adults. It is alike in that children “have experiences that are similar in complexity, challenge, and creativity to those of creative experts” (Caine & Caine, 1999, p. 117). It is different in terms of experience and style. Mature individuals’ creative processes and products emphasize expertise, which involves the technical skill, artistic ability, talent, or knowledge of useful All children display creative behaviors at various times or in particular situations.

**Figure 1.1  Stages in the Creative Process**

<table>
<thead>
<tr>
<th>Preparation/Brainstorming (accessing information)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The thinker applies knowledge, skill, and understanding to materials, objects, problems, or combinations of these things. Creative individuals “engage” with the materials, objects, or problems with a playful or experimental attitude. Engagement with the ideas may be deliberate or accidental.</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Incubation (processing information internally)</th>
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<tbody>
<tr>
<td>The mind begins to formulate and work on a problem, often through images and associations.</td>
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</table>

<table>
<thead>
<tr>
<th>Illumination/Inspiration (arriving at a solution)</th>
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<tbody>
<tr>
<td>The thinker selects some ideas and rejects others; this is an evaluative phase.</td>
</tr>
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<thead>
<tr>
<th>Verification/Communication (evaluating the solution, communicating it to others, and validating its contributions)</th>
</tr>
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<tbody>
<tr>
<td>The thinker tests the product of creative thought in terms of usefulness, completeness, and correctness. This testing may occur at three different levels (Glover, 1980): the individual level (a personal consideration of the work’s originally and purpose), the peer level (soliciting the evaluation of peers), or the social level (assessing the contributions of the work to society at large).</td>
</tr>
</tbody>
</table>

*Sources: Data from A. Cropley (1997); Glover (1980); Runco (1997); Wallas (1926).*
Part 1  Foundations of Creative Thought

information that they bring to whatever they produce (Simonton, 2010). Adult creativity also depends on work habits, which include work style, concentration and persistence, the ability to generate new possibilities, openness to new ideas, and willingness to challenge commonly held assumptions (Amabile, 1983; Simonton, 2010). In comparison to most adults, young children have fewer experiences, less expertise, and less well-developed work habits and styles. But whatever children may lack in these areas they more than compensate for in their unique ways of thinking and approaching a task.

Possibility thinking is a term that characterizes creative thought processes; it occurs when children engage with everyday problems at a deep level and pose “what if?” questions (Craft, 2001, 2002). Imagination is the ability to form rich and varied mental images or concepts of people, places, things, and situations that are not present. Imagination is the source of “flexibility and originality in human thinking” (Egan, 2006, p. 200). Fantasy occurs when a person uses the imagination to create particularly vivid mental images or concepts that are make-believe, impossible, or at least not yet possible (Weininger, 1988). When children gain more experience with possibility thinking and are encouraged to seek novel and unusual solutions they become more adept with it, more confident in their ability to problem solve, and eventually acquire the habit of thinking creatively (Sternberg, 2006a). Conversely, in the absence of possibility thinking opportunities, creative potential can be squelched. Imagination is possibility thinking. Experts on creativity have long believed that, for most human beings, imagination and fantasy are very active during early childhood. Howard Gardner (1993a) observed that “the child is not bothered by inconsistencies, departures from convention, nonliteralness . . . which often results in unusual and appealing juxtapositions and associations” (p. 228).

Kindergartner Mallory’s drawings in Figure 1.2 offer a good example of possibility thinking at work. She is intrigued by flowers—not just ordinary flowers, but flowers that exist only in her mind’s eye. As she imagines what she calls “an acrobatic flower” and “a flower with pineapple teeth,” Mallory has combined apparently unrelated elements in her drawings to produce several things (flexibility) that are new (originality).

Figure 1.2  Mallory’s Flowers
Chapter 1  Understanding Children’s Creative Thought and Expression

THEORETICAL AND RESEARCH BASE: SOCIAL CAPITAL THEORY

Think about some of the popular talent shows that give people an opportunity to share their accomplishments and further develop their potential, such as So You Think You Can Dance, American Idol, Dancing with the Stars, The Voice, or America’s Got Talent. Now think about what happens during childhood that makes it possible for two children who begin life with comparable levels of innate ability to perform at dramatically different levels in the arts. This points out the important difference between creative potential and creative behavior (Brown, O’Toole, MacIntyre, & Sallis, 2009).

One theory that attempts to explain such differences is social capital theory. In every person’s life there are resources that are intellectual, economic, cultural, and institutional in nature (Li, 2004; McLaughlin, 2001). These resources are referred to as capital because, like personal wealth, they are not equally distributed and allocated. Use of the resources depends on an individual’s circumstances in society, access to resources, and ability to elicit appropriate support. According to social capital theory, bringing creativity to fruition requires more than personal ability or even individual determination; it requires social support (Gruber & Wallace, 1999; Zimmerman & Zimmerman, 2000). As Ferrari (2004) explains, “impressive artistic and creative achievements result when students’ ideals correspond with what is valued in a culture and when they have the means (e.g., social upbringing, practice, and innate ability) that enable them to excel” (p. 226). Cultural capital “is a product of individual social history but is often misrecognized as inborn talent . . . we should not underestimate the extent to which dedicated training and masterful teaching contribute to producing ‘stars’ in a particular cultural field” (Ferrari, 2004, p. 233). Thus, whether the work in question is a technological breakthrough, a paradigm-shifting scientific theory, an aspiring singer’s first CD, or an elementary school child’s drawing, successful innovation requires some access to social capital. According to social capital theory, all individuals and groups are capable of making contributions to society and human potential merits the same investment as a country’s natural resources or financial resources (Sternberg, 2012).

Lev Vygotsky (1933), a Russian theorist, contended that learning is fundamentally cultural and interactive in nature. Through social interaction, children internalize the cultural tools that the world of others presents to them and draw on both their imaginative and literal thought processes (J. Davis & Gardner, 1992; Eckhoff & Urbach, 2008; Gajdamaschko, 2005; Smolucha & Smolucha, 2012). For example, if we examine the drawings by a Japanese child or a child from the Inuit tribe, we will see that their early representational drawings resemble the art from the culture they know; their style has been influenced by the art that they have experienced in their societies.

A basic concept in Vygotsky’s theory is the zone of proximal development (ZPD), the level at which the child feels reasonably confident in pursuing
Part 1 Foundations of Creative Thought

an activity, yet not bored by it; the level at which the child feels challenged intellectually, yet not frustrated. The ZPD is one reason that giving children printed pictures to color or cut out while sitting quietly at their seats—a common activity in American schools—is not recommended. True, this activity keeps children occupied, but it does nothing to challenge them intellectually, undermines creative thought, and offers no social support. Such an activity creates no feeling of functioning in a community of learners; it is simply busywork performed in quiet isolation. Figure 1.3 is an overview of the theoretical perspectives and theorists that have contributed to an understanding of creative thought.

It is a common misconception that creative thought exists only inside the individual when, actually, it is understood and built by society (A. L. Miller, 2012; Sinclair, Jeanneret, Swainston, & Watkins, 2009). “All human achievements are influenced by and produced in a cultural context that defines high ability and excellence and determines its relative value in society” (Dorn, Madeja, & Sabol, 2004, p. 81). Think about how the definition of “creative” differs from one academic department to another at your college. If you interviewed education, drama, science, business, or music majors their definitions of creativity would differ somewhat, depending on their field of study—and this is all at the same institution in the same location. Ideas of creativity differ even more dramatically when the cultural background differs. This is why contemporary experts view creativity as a socially constructed trait. The experience of 6-year-old Theran shows what this means. Theran’s grandfather sings in the church choir and often takes his grandson along to practice. The boy is enthralled by the music and, now that he is learning to read, he tries to follow along by identifying some of the words that he knows. Theran also sings along with his grandpa as he practices in the car. This first grader’s behavior illustrates four key points about the way that creativity develops (Faulkner, Coates, Craft, & Duffy, 2006; Sawyer, R. K., 2012):

1. There are important relationships between creativity and the child’s culture during the early years. If Theran did not have this experience with church music, his life would be different. As he enjoys the singing of the choir and gains insight into the practice required, Theran begins to regard it as a significant part of his family’s and community’s life.

2. Creativity emerges through interactions with other people and with the environment. Theran is not just hearing about his grandfather’s participation in the choir or even enjoying it on Sunday; rather, he is immersed in it and begins to think about joining the choir someday.

3. Creative development is mediated by physical and symbolic artifacts within specific domains. Every type of creative endeavor has particular physical contexts and artifacts—in the case of the choir, the church is the setting and sheet music is an artifact that captures Theran’s imagination. The spirituality conveyed by the music is symbolic.

4. The culture of children differs from that of adults. Although the child barely notices it, his grandfather is concentrating on the director, his individual performance, and the overall sound of the group. Theran, on the other hand, is applying
### Chapter 1  Understanding Children's Creative Thought and Expression

#### Figure 1.3  Theories of Creativity

<table>
<thead>
<tr>
<th>Contemporary Theories</th>
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<tbody>
<tr>
<td><strong>Multiple Intelligences Theory</strong></td>
</tr>
<tr>
<td>• Howard Gardner: <em>Creativity consists of a constellation of nine different intelligences.</em></td>
</tr>
<tr>
<td><strong>Implications:</strong> Every young child possesses at least nine distinctive ways of knowing that must be considered and valued when planning any curriculum that claims to meet individual needs.</td>
</tr>
<tr>
<td><strong>Triarchic Theory of Creativity</strong></td>
</tr>
<tr>
<td>• Robert J. Sternberg: <em>Creativity is a cluster of three types of abilities: synthesizing, analyzing, and practicing.</em></td>
</tr>
<tr>
<td><strong>Implications:</strong> Children need to have role models of creativity, raise questions, have time to use trial-and-error, take sensible risks, define and pursue their own problems, puzzle over ideas, overcome obstacles, earn support for their ideas, and be evaluated in ways that respect creativity.</td>
</tr>
<tr>
<td><strong>Optimal Experience or “Flow” Theory</strong></td>
</tr>
<tr>
<td>• Mihalyi Csikszentmihalyi: <em>Creative individuals acquire competence in a domain of interest and pursue that interest with passion and enjoyment.</em></td>
</tr>
<tr>
<td><strong>Implications:</strong> Throughout the world, young children will play spontaneously and persist at their play even though no one is directing it or reinforcing them. In studies of eminently creative adults, one consistent finding is that the lines between play and work are blurred and they tend to approach their work playfully.</td>
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<tr>
<th>Classical Theories</th>
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<tbody>
<tr>
<td><strong>Theory: Humanistic</strong></td>
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<tr>
<td>• Carl Rogers: <em>The creative person is fully functioning.</em></td>
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<tr>
<td><strong>Implications:</strong> If the young child’s natural curiosity, passion for learning, and active imagination are deadened by adults, the child becomes less rather than more capable from a creative standpoint.</td>
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<tr>
<td>• Abraham Maslow: <em>The creative person is self-actualized.</em></td>
</tr>
<tr>
<td><strong>Implications:</strong> When schedules are rigid and tasks are predetermined, children do not have an opportunity to make choices or solve interesting problems. Over time, they learn to depend on others for ideas rather than trusting their own ideas.</td>
</tr>
<tr>
<td>• Rollo May: <em>Being creative is courageous.</em></td>
</tr>
<tr>
<td><strong>Implications:</strong> Young children’s ideas often seem outrageous or silly to adults who seek large amounts of predictability and control. Yet children need permission to pursue their unorthodox ideas so that they can “dare to be different” throughout life.</td>
</tr>
<tr>
<td><strong>Theory: Psychoanalytic</strong></td>
</tr>
<tr>
<td>• Alfred Adler: <em>Creativity is a way of compensating for perceived physical or psychological inferiority.</em></td>
</tr>
<tr>
<td><strong>Implications:</strong> Different outlets for creative expression give people ways of forming a more positive self image.</td>
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<tr>
<td>• Carl Jung: <em>Creative ideas emanate from a deeper source, from the “collective unconscious.”</em></td>
</tr>
<tr>
<td><strong>Implications:</strong> It is essential that children become familiar with the creative processes and products of other times, cultures, ethnic groups, and races so that they can make personal connections with the sum of human creativity.</td>
</tr>
<tr>
<td><strong>Theory: Constructivist</strong></td>
</tr>
<tr>
<td>• Jean Piaget: <em>Creativity is a type of problem solving that depends on the child’s thinking processes.</em></td>
</tr>
<tr>
<td><strong>Implications:</strong> Developing the young child’s problem-solving processes gives children the time and opportunity to explore materials and use hands-on approaches in pursuing interesting challenges.</td>
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</table>
new things he has learned at each practice. For example, he was very excited when he could use a letter and number to “look up” the selections that the group would sing all by himself. He also discovered that the musical notation on each page is a different kind of symbol system used to direct the group’s efforts.

**TEACHERS’ REFLECTIONS ON CREATIVITY**

Consider these preservice and inservice teachers’ reflections as they completed a course on creativity:

**Preservice Teachers**

“My knowledge of creativity was really limited. I knew that it was beneficial, but I didn’t really have any facts to back it up—just a vague feeling that it’s basically good. Now I have reasons why creative thinking benefits the whole child in all areas of development.”

*Imagination and fantasy are the great creative assets of early childhood.*
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Inservice Teachers

“I have always believed that creative expression was important to children’s development, but I think I only considered the content—art, music, dance, etc. I think I viewed these subjects as something to be appreciated rather than in terms of the many ways they can support children’s learning.”

Your Reflections

• How do these teachers think about creativity in their students?
• What are your assumptions and understandings about creative thought?
• What role might creative thought play in learning and teaching?

![HOW CHILDREN LEARN TO THINK CREATIVELY](image)

To illustrate children’s creative behavior, consider what Scott’s mother had to say about her son’s imaginary companion:

My son, who just turned 4, became fascinated by deer. This happened, I think, because while we were visiting friends out in the country, a doe and her fawn came into the yard. Now Scott has created a pretend friend named “Fawnbelly.” His bedroom window faces the front porch, and that, according to my son, is where she sleeps. He feeds her by putting a plastic apple on the windowsill and, in return, she protects him at night. When he talks about Fawnbelly, I can picture this gentle, expectant doe with huge brown eyes keeping watch over our house.

This mother obviously values her son’s vivid imagination and rich fantasy life, and rightly so. Innovation and resourcefulness are essential to survival (Craft, 2003a, 2003b, 2006). Most of the problems we encounter throughout life are complex, “unscripted” ones. Resolving them depends on two sets of internal psychological conditions: psychological safety and psychological freedom (Rogers, 1991). Psychological safety is external; it depends on a low-risk environment in which people treat one another with respect. Psychological freedom is internal; it is what enables us to play with ideas, be open to experience, and acquire ego strength—the ability to rely more on self-evaluation than the evaluations of others (Runco, 2004). A mother described her son’s play as follows:

Lance [age 5] loves farming and he has lots of toy farm equipment that once belonged to his dad. One day he was playing farmer and took his toy manure spreader into the kitchen, filled it up with coffee grounds, and began spreading “manure” on his land, which just happens to be the kitchen floor!

Lance’s mother knew that her son was completely wrapped up in his farm fantasy and that his intentions were good, even if the outcomes were messy. She
did insist that Lance help her clean up the coffee grounds, yet she did not punish him or make him feel ashamed of his desire to really “test out” his farm equipment. By taking this approach, she supported both psychological safety and psychological freedom.

Adults share responsibility for developing the rich resources of imagination, creativity, curiosity, and playfulness that characterize childhood (Cobb, 1977; Martindale, 2001). To fulfill that responsibility, they first have to recognize creative behavior when they see it. In a study of more than 1,000 teachers’ ideas about children’s creative behavior, only about half of the teachers realized that divergent thinking—thinking “outside the box”—is a key element of creative thought (Fryer, 2003). Figure 1.4 describes how to recognize children’s creative thinking in action.

**Figure 1.4 Observable Characteristics of Children’s Creative Thought Process**

<table>
<thead>
<tr>
<th>Observable Characteristics of Children’s Creative Thought Processes</th>
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<tbody>
<tr>
<td>• Playful, persistent, and intrinsically motivated</td>
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<tr>
<td>• Become intensely absorbed in activities, persist at work or play, and concentrate on a single task for a relatively long period of time</td>
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<tr>
<td>• Explore, experiment, manipulate, play, ask questions, make guesses, and discuss findings</td>
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<tr>
<td>• Use imaginative role play, language play, storytelling, and artwork to solve problems and make sense of their world</td>
</tr>
<tr>
<td>• Perceptive and curious</td>
</tr>
<tr>
<td>• Are curious and ask many questions</td>
</tr>
<tr>
<td>• Are capable of tolerating ambiguity as they explore alternatives</td>
</tr>
<tr>
<td>• Are curious and ask strongly intuitive and perceptive</td>
</tr>
<tr>
<td>• Enjoy thinking and working independently</td>
</tr>
<tr>
<td>• Resourceful, nonconforming, and adventuresome</td>
</tr>
<tr>
<td>• Tend to challenge assumptions or authorities based on well-reasoned differences of opinion</td>
</tr>
<tr>
<td>• Formulate hypotheses and conduct trials to test their ideas</td>
</tr>
<tr>
<td>• Try to bring order out of chaos by organizing their environment</td>
</tr>
<tr>
<td>• Do something new with the old and familiar and display interest in new ideas</td>
</tr>
<tr>
<td>• Use repetition as an opportunity to learn more from an experience rather than becoming bored with it</td>
</tr>
</tbody>
</table>

Sources: Data from G. Davis & Rimm (1994); Healy (1996); Maxim (1989); McAlpine (1996).

One of the ways in which children learn to engage in possibility thinking is through activities with high-quality picture books. This annotated list identifies recently published, award-winning children’s literature for children at various listening or reading levels and suggests learning experiences related to each title.

The recommended grade levels are included:

*Toddler (T), Preschool/Kindergarten (P/K), Primary (1st/2nd), Intermediate (3rd/4th)*

**Current Children’s Books and Creative Thinking**


When his brothers brag about their stamp and coin collections, Max decides to follow suit; he also can do something more with his collections by creating a story. This book is a great introduction to the joys of collecting and classroom visits from collectors. Have children choose an out-of-this-world category for an imaginary collection and give reasons for their choices (e.g., stars, fairies, unicorns). (P/K; 1st/2nd)
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A young girl follows her dreams and does what nobody else has ever done before. This book invites children to discuss and write about their dreams and how they plan on achieving them. For older students, consider I Can Be Anything (Spinelli, 2010). (3rd/4th)

What if you had a raincoat that made your wishes come true—and your mother gave it away after you complained about the color? Pair this book with other titles about magical objects, such as the wordless book, Un-Brella (Franson, 2007) in which a magical umbrella transforms winter into a summer day at the beach, or classic tales such as “The Goose That Laid the Golden Egg” or “The Midas Touch.” (1st/2nd)

Bright colors convey a timeless message about outside-the-box thinking. (1st/2nd, 3rd/4th)

Thunder storms—from the perspective of one worried raindrop—take children on a fantastic journey from the clouds to the earth and back again. Connect this book to others that emphasize the importance of rain, such as the classic Bringing the Rain to Kapiti Plain (Aardema, 1992) and Come On, Rain! (Hesse, 1999) (1st/2nd). For older students, teach the water cycle through All the Water in the World (Lyon, 2011) and have children create water cycle diagrams or flow charts of the water treatment process using computer software. (3rd/4th)

A personified doughnut is determined to be a true original instead of just another pastry; pair this book with others about surprising protagonists, such as Diary of a Worm (Cronin, 2003). (1st/2nd, 3rd/4th)

Imagination runs wild as the main character envisions behavioral expectations for various animals. Relate this to other books about manners, such as How Do Dinosaurs Say Goodnight? (Yolen, 2000) and What Do You Say, Dear? (Joslin, 1986). Have children work in groups to create original picture books about each animal’s spin on politeness. Relate it to the story of an exceptionally polite bear who goes on a quest to locate his missing hat (I Want My Hat Back by Klassen, 2011). Ask children to imagine the challenges faced by other creatures (Even Monsters Need Haircuts by McElligott, 2010). (1st/2nd, 3rd/4th)

This lovely science book invites children to imagine the animals that are in their natural habitats beneath the snow. Consider linking it to other books that inspire daydreaming about animals preparing for winter such as The Busy Little Squirrel (Tafuri, 2007) and surviving during winter (Chipmunk Song by Ryder, 1992) and Bear Snores On by Wilson & Chapman, 2002. Have children produce collages with found natural objects and construction paper that depict various animals in hibernation mode. (P/K, 1st/2nd)

An elephant discovers a big red umbrella and engages in many humorous attempts to figure out what the item is supposed to do—keep him and his friends dry! To simulate the elephant in the story’s experience with a puzzling object, bring some items to school that probably are unfamiliar to students such as kitchen gadgets (e.g., an apple corer/peeler, a melon baller, a hardboiled egg slicer) and office items (e.g., a staple remover, a three-hole punch, a magnetic paper clip holder). Ask them to figure out the object’s use and then begin supplying them with clues until they arrive at the answer. Show the children how to use the object and then begin supplying them with clues until they arrive at the answer. Show the children how to use the object. Invite them to be more observant and find other “thingamabobs” in their environments. Have them create a story about an animal discovering it and figuring out how to use it (P/K, 1st/2nd)

Who wouldn’t want an imaginary companion as accommodating as Bear? Five small stories introduce us to their special relationship. Use it to spark discussions about pretend friends that exist only in the imagination. (P/K, 1st/2nd)

(Continued)

This Aesop fable engages readers in a delightful story about an act of kindness with the moral of this story being that anyone can help no matter their size. Use this story to compare/contrast with other Aesop fables. (All ages)


This nearly wordless book presents the same story with three different outcomes. Invite children to do likewise as they work in small groups on a picture book. (P/K, 1st/2nd)


A great introduction to the concept of transformation, this book begins with nature and then shifts into human imaginative processes that convert paint into a picture and words into a story. (P/K, 1st/2nd, 3rd/4th)


Day after day, Mr. McGee had the same routine of visiting his animal friends at the zoo so, when he comes down with a cold, his zoo friends are there for him. This story of friendship could be partnered with *Help! A Story of Friendship* (Keller, 2007) to discuss the theme of friendship. Children could create a list of things they enjoy doing with their friends and then talk about those special things. (P/K, 1st/2nd)


This entertaining colorful picture book will captivate its audience by its bright exotic illustrations and interesting information. It can be used with *Birds* (Henkes, 2009) to help children see the different body parts of a bird. Children can use brightly colored construction paper to make birds and perhaps label the body parts on the reverse. (P/K, 1st/2nd)

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**DEVELOPMENTAL SEQUENCE FOR CHILDREN’S CREATIVE GROWTH**

Consider these activities of children at different ages and stages:

- **Jessica**, a 30-month-old, has wrapped a block in a blanket that she now refers to as “baby”; she is using an object to symbolize something else.
- **Sydney**, age 3, paints a mandala (a shape that looks like the sun); it is new to her even though adults have seen this in children’s drawings many times.
- **Arwen**, age 5, is painting at the easel in response to a dream he had the night before in which he could fly; he is using his imagination.
- **Miguel**, a gifted third grader, is designing an interactive Web site; he is applying his skills in technology to accomplish a goal.

As the behaviors of these children suggest, creativity is novel behavior with a purpose (Peterson, 2001/2002). When children are thinking creatively, they use play and imagination to go beyond obvious or literal interpretations (Burnard et al., 2006; Claxton, Pannells, & Rhoads, 2005; Harding, 2010). Even infants learn not only through imitation but also through experimentation (Gopnik, 2010). Thus, play is a major avenue for the development of creative thinking in young children (Connery, John-Steiner, & Marjanovic-Shane, 2010; Rushton, Juola-Rushton, & Larkin, 2010). One way of glimpsing creativity in action is to listen and watch while children talk and draw (Coates & Coates, 2006). Here is what
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Caitlin, a 3 1/2-year-old, says out loud as she draws a picture. Notice Caitlin’s vivid imagination as well as her lack of inhibition about revealing her thoughts:

I’m makin’ a butterfly. This is grass, this green stuff is grass. I’m making a bridge this time. The butterfly’s gonna go over the bridge—under the bridge, I mean . . . Now I’ll make myself. I need some pink. Hmm, no pink. (she chooses a red crayon) I’ll just have to color light if I want to make some pink. There, that’s my honker (nose). This is my hair. I’m going to make some hair. There I am! (she smiles) I want black. Purple will do. I have some blush on—there! Ha-ha! I’ll have to make a sidewalk here. Those are drains (drains), like little logs. (in a singsong voice) I need a blue log log, blue log, blue log log. Can you make a flower, Caitlin? Blue will do it! Blue water. See, this is a log. I forgot to make the sunshine. I’ll pretend this is Rudolph (the Red-Nosed Reindeer). Sunshine. There! Now I’m going to make an elephant.

As Caitlin’s talk while she draws suggests, children excel at three characteristics thought to be related to creative genius: responsiveness to internal and external stimuli, lack of inhibition, and the ability to become completely absorbed in an activity (Holden, 1987). For both children and adults, creativity is a paradox because it is serious and playful at the same time (Rea, 2001).

Marina, a 3-year-old, is a good example of a child with responsiveness to stimuli. The bishop of her Greek Orthodox church was visiting and all of the adults were quiet and reserved. Marina walked right up to the bishop and asked, “Do you know how to color? Would you like to draw pictures with me?” Marina seemed to sense that others felt ill-at-ease so she applied her strategy for making a friend in a way that the entire congregation still remembers fondly.

Five-year-old Lauren exemplifies the child’s spontaneity and lack of inhibition. She has created an imaginary friend named “Mousie,” and before her

Schools that nurture creativity support children’s experimentation and problem-solving efforts.
family travels anywhere, she lifts the gas tank door and puts her hand, palm up, next to the opening so that Mousie can crawl inside. Lauren talks aloud to her imaginary pet and gives him instructions on how to behave, completely unconcerned that anyone might overhear her.

As fourth-grader Kevin settles in for a cross-country airplane ride, his play with an electronic game demonstrates complete absorption in an activity. He is determined to move to the next level and has been working with a friend to invent an idea for a similar game that peers would like to play. As the behaviors of Marina, Lauren, and Kevin illustrate, children can become totally absorbed in pretending. They surprise us by their perceptivity, spontaneity, and playfulness. Because they are newer to the world, their sensory impressions are particularly keen. These characteristics lead us to seek careers working with young children and endear them to us as adults.

**INTEGRATING THE CURRICULUM: USING GRAPHIC ORGANIZERS**

One way that teachers promote creativity is by teaching children to use tools for thinking. Graphic organizers are a widely recognized strategy for integrating thinking across subject areas.

**What Is A Graphic Organizer?**

Graphic organizers are tools for making things more visible; they are also referred to as concept maps or webs. Graphic organizers structure information and arrange important aspects of a concept or topic into a visual pattern that is labeled with words (Mosco, 2005). The most common graphic organizers are concept maps (with a main vocabulary word/idea and details radiating out from the center), sequence charts (that show a process in step-by-step fashion), compare/contrast diagrams (such as the Venn diagram), and cause-and-effect diagrams. Free software downloads such as Mindmeister (www.mindmeister.com for older students) and Bubbl.us (bubbl.us/ for younger students) enable users to include pictures, Web sites, and more into their concept maps. Such programs typically rely on a free download of Adobe Flash Player.

**Why Use Graphic Organizers?**

A large body of research suggests that graphic organizers support learning across subject areas (Baxendell, 2003; Gallenstein, 2005; A. Kim, Vaughn, Wanzek, & Wei, 2004). When children work with concepts in a more organized fashion, it helps them to construct mental models of ideas and their interrelationships.

**Why Are Graphic Organizers Particularly Suitable for Children with Special Needs?**

Visually displaying information can assist children’s ability to organize and remember information; therefore, graphic organizers appear to be a particularly
strong form of support for diverse learners. It is not enough, however, to use graphic organizers in a haphazard, occasional way. They are most effective when they are consistent (teachers select a few models and use them often); coherent (deal with a limited number of concepts and clearly label the inter-relationships among them); and creative (teachers use them at the beginning, middle, and end of lessons; use them for homework or review; pair pictures with words; use them across subject areas; and incorporate them into partner or cooperative group work) (Baxendell, 2003). An example of a graphic organizer is creating a web for a work of art. At the center of the web might be a print or photograph of the work. Radiating out from the center might be categories such as works of similar type (such as other sculptures), works with a similar subject or theme (such as animals), works by the same artist (such as Winslow Homer), works of similar style (such as picture books that use collage), and so forth. In this way, children are using literacy and art together. Figure 1.5 offers practical ideas on how to integrate graphic organizers into the curriculum.

**TEACHERS’ ROLES AND RESPONSIBILITIES IN PROMOTING CREATIVITY**

Try to picture a creative child in your mind’s eye. If you are like most people, you will envision a “little professor” child with thick glasses, a child with encyclopedic knowledge of a particular topic (e.g., dinosaurs), a child who is precocious (i.e., can perform academic tasks well in advance of peers), or perhaps a child who seems to be an eccentric loner (Kerr & Cohn, 2001; Piirto, 1998). Such views, however, tend to link creativity to superior academic skills or to social maladjustment and result in harmful stereotypes about creativity. Creative behavior often is misinterpreted in a negative way by uninformed or insensitive adults. The child who is playful, energetic, excitable (Tieso, 2007), and intrinsically motivated could be labeled as “hyperactive”; the child who is independent, perceptive, and confident as a “smart aleck”; and the child who is original, nonconforming, and adventurous as “strange” or “stubborn.” Most adults prefer children who are subdued, compliant, quiet, neat, and polite and who fit in easily with peers. As Sak (2004) concludes:

Students displaying creative behaviors tend to be unappealing to teachers. This claim is very important for the future of human advancement. When teachers do not know what creativity is, how it manifests and how it is important, they may ignore teaching for creativity; thereafter, loss of creative talent is reflected in scientific and artistic advancements in particular, and in human civilization in general. (p. 216)

This is one reason why it is so important for teachers to understand and appreciate children’s creativity (Hope, 2010). When teachers are misinformed or uniformed about creativity, it can damage children’s self-esteem and thwart creative growth (Lee & Seo, 2006; McWilliam & Dawson, 2008).
Toddler Theme: Caring for the Young

- **Communication:** Literacy, Language Arts, and Technology
  - Share books about parents caring for their offspring such as *Over in the Meadow* (Keats, 1971) and *It’s Time to Sleep, My Love* (Tillman, 2011). Use computer clip art to make a song chart that depicts animal mothers caring for their offspring.

- **The Sciences:** Mathematics/Science
  - Teach one-to-one correspondence. Use a collection of large and small stuffed animals and ask children to match mothers with babies; watch a nature film about animal parents caring for babies; create a photo collage of animal parents and babies.

- **Social Studies:** Social Studies/Health and Safety
  - Set up a baby bath time outdoors. Provide tub, water, plastic dolls, no-tears soap and shampoo, towels, diaper, clothing, and baby blanket so that children can enact familiar caregiving rituals.

Preschool Theme: Using Symbols to Represent Ideas

- **Communication:** Literacy, Language Arts, and Technology
  - Choose a story with a simple, one-line plot, such as *Rosie’s Walk* (Hutchins, 1987) and have children create a story map on the floor or on the computer.

- **The Sciences:** Mathematics/Science
  - Lay two hula hoops or circles of yarn on the floor as in a Venn diagram. Use attribute blocks and pose questions (“If the blocks on this side are red, and the blocks on this side are big, what could we put in the middle that is both big and red?”).

- **Social Studies:** Social Studies/Health and Safety
  - Share the classic book *The Listening Walk* (Showers, 1993), then take a walk outdoors and make a list of the sounds that the children heard. Use the free software, Bubbl.us (bubbl.us/) to produce a concept web or map to categorize the sounds by their source (e.g., made by people, animals, machines, etc.).

Primary Theme: Favorite Songs

- **Communication:** Literacy, Language Arts, and Technology
  - Have children compare three versions of the same basic song, such as *Six Little Ducks* and make an Alike/Different chart using Mindmeister (www.mindmeister.com).

- **The Sciences:** Mathematics/Science
  - Use a big book to sing a counting song such as *Five Little Monkeys Jumping on the Bed* (Christelow, 2006). Use clip art to represent each verse of the song and make cue cards.

- **Social Studies:** Social Studies/Health and Safety
  - Invite family members with different cultural backgrounds to share the folk songs that they learned in childhood. Use the free software, Our Story (www.ourstory.com) to archive these presentations.

Intermediate Theme: Intellectual Property

- **Communication:** Literacy, Language Arts, and Technology
  - Share the book *Boys of Steel* (Nobleman, 2008) about the originators of Superman and how they were cheated of the credit for their invention. Point out the credits and copyright information in several books. Have children work as writer/illustrator teams to produce an original picture story book. Include a brief bio for each child and a copyright page. Try the free trial of software such as FlashFlipBook 3-D.

- **The Sciences:** Mathematics/Science
  - Visit the United States copyright information center online and determine the basic rules for copyright of ideas. Look at several pieces of software for copyright information and discuss the steps that are taken to keep intellectual property secure. Create a timeline of intellectual property legislation using Dipity (www.dipity.com).

- **Social Studies:** Social Studies/Health and Safety
  - Invite a local inventor to the class to discuss the process of obtaining copyright. Have children create a sequence diagram for the copyright process based on their interview. Use the free student/teacher version of Prezi, software that is designed to visually represent concepts.
Chapter 1 Understanding Children’s Creative Thought and Expression

Creativity is a complex developmental system that is shaped by at least seven influences: (1) cognitive processes; (2) social and emotional processes; (3) family aspects, both while growing up and current; (4) education and preparation, both informal and formal; (5) characteristics of the domain and field; (6) sociocultural contextual aspects; and (7) historical forces, events, and trends (Feldman, 1999, pp. 171–172). We know that “the professional skill of the teacher is important in sustaining . . . creative effort, because creativity is easily extinguished” (Peterson, 2001/2002, p. 8).

Teachers succeed in promoting children’s creativity when they:

1. Understand what it means to be a creative teacher. The first and most important way to be a creative teacher is having a deep and abiding respect for children (Sinclair, 2009). You are not just playing the role of teacher, you are bringing yourself as a genuine, caring, and compassionate human being into the classroom (Reid, 2009). A second key element is recognizing what constitutes a creative activity. Too often, teachers assume that “creative activities” are all about them when, in reality, the worth of creative activities is evaluated by the quality of the children’s responses (McWilliam & Dawson, 2008). Genuinely creative activities are not something that teachers do for children, such as designing “cute” games for them to play. To develop possibility thinking and problem finding, children need “playful teachers who constantly invent teaching strategies to surprise their students” (Pitri, 2001, p. 48). Teaching creatively activates children’s potential rather than requiring teachers to perform in the arts (Egan, Stout, & Takaya, 2007). This should be good news for teachers who worry about their singing voices, their inability to draw, their clumsiness at dance, their inexperience with drama, or the fact that they never learned to play a musical instrument. Teaching creatively means that you know how to bring out children’s best thinking; in other words, you are teaching for creativity (Brinkman, 2010).

2. Offer support for possibility thinking. Possibility thinking happens when children engage with everyday problems at a deeper level and pose “what if” questions (Craft, 2001, 2002). Researchers in the field of creativity have argued that the creative individual engages, to a considerable extent, not merely in problem solving but in problem finding (Dorn et al., 2004). Problem-finding patterns of thinking forge connections among creative thought (such as outside-the-box thinking), values (such as decisions about what is effective, elegant, ethical), and intrinsic motivation (that is, self-directed to pursue a goal). Teachers might begin with a concrete object to stimulate creative thought, such as carpet squares used as “magic” carpets. Unusual situations are another avenue for developing possibility thinking. Pitri (2001) introduced a princess puppet and began with a story about her waking up in a forest when it suddenly started to rain. The children were given the task of creating something that would protect the princess from the rain. Note that this activity engages children in predicting events, reasoning about cause and effect, and arriving at conclusions. Picture books are a vital resource in promoting possibility thinking.
3. **Value the process as well as the product.** Studies of creativity reveal that quantity affects the quality of work (Simonton, 2003). In other words, highly creative individuals need to accumulate considerable practice and often generate numerous unsatisfactory attempts before they arrive at a satisfying outcome. Therefore, children should be encouraged to play with ideas and explore solutions rather than being pushed into premature conclusions. When children are pressured to dash off something to meet someone else’s schedule, they are not afforded the “luxury” of seeking many alternatives and refining the most promising ones their skill in self-evaluation is undermined (Amabile, 1989).

4. **Treat creativity as a way of knowing.** Set aside the antiquated notion that creativity is nonessential; recognize that it plays a fundamental role in helping children make sense of their worlds (J. M. Burton, 2009). Keep in mind that creativity is foundational to interpreting experience:

   - Sounds and the things we make sounds with—we shape into music
   - Movement and our bodies—we shape into dance
   - The images we see, and the media we use to make them—we shape into visual, plastic, and media arts
   - Words and utterances that we call language—we shape into stories and poetry
   - Words and gestures, and imagination—we shape into drama and theater
   - The multiple senses we call upon and the multimedia tools we use—we shape into integrated art projects (R. Brown, O'Toole, Macintyre, & Sallis, 2009, p. 232)

5. **Provide the right amount of structure.** Research suggests that either too much or too little structure can interfere with the development of creative expression (L. McLeod, 1997). If a classroom is regimented, there is too much structure. On the other hand, if a classroom is “anything goes,” there is too little structure to provide proper guidance. One way to create more flexibility is to relax the schedule for activities in which children are deeply absorbed. That way, children begin to appreciate intrinsic motivation and the “labor of love” satisfactions of creative pursuits (Amabile, 1986; Webster, Campbell, & Jane, 2006). Figure 1.6 summarizes strategies that teachers use to promote creativity.

6. **Establish mechanisms for peer support.** Children are encouraged to share ideas, not only with the teacher but also with one another. One of the ways that children begin to regard themselves as creative is in their reflected selves—in others’ responses to them and their ideas. Therefore, it is important for children to give and receive supportive feedback, not only from adults but also from peers. Strategies for making curriculum accommodations for diverse learners so that all children are included in creative thinking are discussed in the next section.

7. **Minimize competition and external rewards.** Creativity is promoted when teachers enjoy experiences along with children rather than singling out particular products for praise or rewards. When children are informed that there will be
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Figure 1.6 What Teachers Do to Promote Creativity in Students

<table>
<thead>
<tr>
<th>Classroom Environment, Materials, and Climate</th>
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<tbody>
<tr>
<td>• Create organizational and structural conditions that allow open and flexible distribution of roles, themes, problems, and activities</td>
</tr>
<tr>
<td>• Provide challenging and stimulating learning materials</td>
</tr>
<tr>
<td>• Offer opportunities to work with varied materials under different conditions</td>
</tr>
<tr>
<td>• Establish a classroom climate that permits alternative solutions</td>
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<table>
<thead>
<tr>
<th>Professional Attitudes and Values</th>
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</thead>
<tbody>
<tr>
<td>• Provide support and positive feedback for problem finding, not just problem solving</td>
</tr>
<tr>
<td>• Serve as a model of creative thought</td>
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<tr>
<td>• Tolerate ambiguity, accept alternative solutions</td>
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<tr>
<td>• Allow for humor and playfulness</td>
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<tr>
<th>Social Support for Creativity</th>
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<tbody>
<tr>
<td>• Have a cooperative, socially integrative style of teaching</td>
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<td>• Enable children to participate in joint projects with self-selected partners</td>
</tr>
<tr>
<td>• Surprise students with recognition for creative processes and products</td>
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<td>• Extend mastery of factual knowledge through collaboration</td>
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<tr>
<th>Recognition of and Respect for Children’s Creativity</th>
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<tbody>
<tr>
<td>• Enable self-directed work that allows for a high degree of initiative, spontaneity, and experimentation</td>
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<tr>
<td>• Encourage and accept constructive nonconformist behavior</td>
</tr>
<tr>
<td>• Take children’s questions seriously and tolerate “sensible” or bold errors</td>
</tr>
<tr>
<td>• Help students learn to cope with frustration and failure</td>
</tr>
<tr>
<td>• Reward courage as much as being right</td>
</tr>
<tr>
<td>• Actively teach creative strategies</td>
</tr>
<tr>
<td>• Foster intense concentration and task commitment through high motivation and interest in self-selected topics</td>
</tr>
<tr>
<td>• Increase autonomy of learning by recognition and self-evaluation of progress</td>
</tr>
</tbody>
</table>

Sources: Data from C. Clark (1996); A. J. Cropley (2001); Urban (1996).

A contest, that some will win a tangible reward and others will lose, three things happen. First, they become more cautious and tend to “play it safe”; second, they feel pressured to please someone else and lose their intrinsic motivation; and third, they tend to rush to get the reward. All of these things result in less spontaneous, less complex, and less varied products; in other words, less creative responses.

8. Encourage rather than praise. In praise, the teacher passes judgment on the quality of the child’s work (“You did a very good job on your story”); encouragement acknowledges the child’s efforts (“I noticed that you worked very hard to revise your story until it was ready to be published online”). Effusive praise can suppress children’s creativity. Suppose that a child paints an orange pumpkin with black triangle eyes and nose and a toothy grin. If adults shower the child with praise, saying, “Oh, that’s so wonderful! It’s just the cutest little pumpkin!” the child may get “stalled” at this stage because he or
Figure 1.7  Responses to Children’s Work

- How did you get the idea for this work?
- This makes me feel . . .
- I like the way you used _____ because . . .
- This reminds me of . . .
- What were you trying to do?
- It looks like you combined . . .
- This interests me because . . .
- How does this work compare with other work you have created?
- I wonder what would happen if . . .
- I notice that you . . .
- I’d like to know more about . . .
- You used some powerful ideas such as . . .
- The part where you explained . . .
- This is like your . . .
- You are really good at . . .

Sources: Data from Cecil & Lauritzen (1994); E. P. Cohen & Gainer (1995).

She is trying to please the adult. It is better to show genuine, personal interest and comment specifically on the child’s work (“Carla, that pumpkin looks really happy”) or ask questions about it (“How did you figure out how to make the stem?”). Sheets (2006) describes, for example, how an African American child who had the freedom to invent a jack-o-lantern decided to make it more like herself with elaborate braids and eyelashes; the teacher followed up with the book Meet Danitra Brown (Grimes, 1994) as a way to encourage the child’s creative choices. Figure 1.7 suggests appropriate comments about children’s creative work.

A first-grade teacher helps illustrate how these principles are put into practice. Ms. Kastenbaum uses a four-phase strategy that begins with awareness, then moves to exploration, next to inquiry, and finally to utilization (Copple & Bredekamp, 2009). She builds the children’s awareness by asking, “What is a robot? How are robots made? What is special about robots? What robots have you seen?” Krish says that robots are “sort of like people, only they’re machines.” Taro mentions R2-D2 from Star Wars, and Joelle expresses a wish for a toy robot. Exploration begins as the children share and discuss a collection of robot pictures and the teacher summarizes by asking, “What have you learned about robots? What questions do you still have about robots?” Now Ms. Kastenbaum moves the group into inquiry as she invites them to examine a wide array of recycled materials and invent a robot puppet. One child begins with an old sock, another with a cardboard box; one child uses Styrofoam egg carton cups for “buggy eyes,” while another chooses aluminum foil and cardboard tubes for arms. All of the children experiment with different fixatives such as glue, staples, tape, and sewing. The activity turns to utilization as the children’s finished robot puppets move to electronic music. Figure 1.8 is a summary of ways to teach for creativity.
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Figure 1.8  What Goes into Teaching for Creativity?

DIFFERENTIATING INSTRUCTION: ACCOMMODATIONS FOR DIVERSE LEARNERS

When young children have a disability it is common for people to approach it as a “problem” and to become preoccupied with the things the child cannot do (Whitehurst & Howells, 2006). Effective teachers take a positive approach. They unlock the creative potential in children with disabilities through a persistent focus on children’s strengths and capabilities (Carpenter & Shevlin, 2004). The teacher’s goal is to include rather than exclude: “Inclusion is about much more than the type of school that children attend: it is about the quality of their...
Technology is an important tool for promoting creative thought (Fowler, 2012). Brianna Carney-Strahler (2011) is a classroom teacher from the Butler Area School District who has used wikis and blogs extensively with her students. She offers the following information and advice to fellow teachers.

**What Are Wikis and Blogs?**

Wikis and blogs are similar tools that support collaboration and social interaction among students. On a wiki or blog page, multiple learners share a blank work space in which they can create, edit, and publish content online. Wikis and blogs allow students to add text, graphics, media, links, and files to their Web documents. One important advantage of these tools is that they offer secure sites suitable for educational purposes because accounts are password protected and can be blocked to public users. To ensure student accountability, contributions and changes to wiki and blog documents are recorded and stored through the page history. Free software to produce wikis and blogs includes Zoho, Blogster, Debategraph, and Wikispaces. Teachers will want to use secure sites such as PBWiki (pbwiki.com) and KidBlog (kidblog.org) that provide resources and access to technology for teachers and students at no cost. These free technology resources support teachers in developing authentic learning communities.

**What Are the Benefits of Wikis and Blogs?**

Wiki and blog technology provides a shared learning space in which students work toward common goals and support the active construction of knowledge through real-world experiences (DeWitt & Siraji, 2010; Kissel, Hathaway, & Wood, 2010; Ruth & Houghton, 2009). Activities completed through a wiki or blog are often more meaningful and engaging because students are posting content for a real audience (Boling, Castek, Zawilinski, Barton, & Nierlich, 2008). These experiences foster cooperation, respect, and sharing through social interaction; this application of technology may be particularly useful for students who are less confident in face-to-face exchanges with peers. Another important advantage of wikis and blogs is that they support the development of higher-order thinking and problem-solving skills (Matthew, Felvegi, & Callaway, 2009a, 2009b) and enable students to integrate newly learned content with prior knowledge (Therrien & Hughes, 2008). Carefully designed wiki and blog activities can deepen students’ thought processes and thereby foster more meaningful learning experiences.

**What Are Appropriate Uses of These Technologies?**

Wikis and blogs can be used somewhat differently because blogs typically are produced by single authors while wikis are created by multiple users. Posts made to blogs are individual entries that are best used to support personal communication, such as journal writing. In blogs, the entries of individual students are displayed in reverse chronological order. In contrast, the content of wikis tends to be factual material that is collectively determined by the students; thus, wikis lend themselves to learning in various content areas, such as science, mathematics, and social studies. Table 1.2 provides examples of how these innovative technologies can be effectively integrated into a preschool, primary, or intermediate classroom.
## Chapter 1  Understanding Children’s Creative Thought and Expression

### TABLE 1.2  Using Wikis and Blogs

<table>
<thead>
<tr>
<th></th>
<th>Preschool</th>
<th>Primary</th>
<th>Intermediate</th>
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<tbody>
<tr>
<td><strong>Wikis</strong></td>
<td>✓ For children who are not yet reading or writing, wikis can be used to upload a variety of digital images. For example, in a unit on shapes, preschool children used a wiki page to upload pictures of shapes they found in their everyday lives.</td>
<td>✓ Primary students used wiki technology to create a virtual zoo. Each student posted a picture and a piece of information about an animal he or she wished to include in the class wiki zoo.</td>
<td>✓ Learners who are reading and writing can use a wiki to design a classroom newsletter or a newspaper to share events occurring in their school community.</td>
</tr>
<tr>
<td><strong>Blogs</strong></td>
<td>✓ Younger students could create “Our Favorites” blogs describing their favorite people, animals, places, and things throughout the school year.</td>
<td>✓ Blogs can be used for correspondence with distant readers, such as e-pals in Costa Rica.</td>
<td>✓ Students in intermediate grades could use blogs to record and upload original puppet plays, musical performances, news broadcasts, or skits.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Students in primary grades could use blogs to make collaborative lists such as tips for growing a garden, how to be a good friend, or ways to improve reading.</td>
<td>✓ After reading a book, intermediate learners could write a brief book talk and post their work onto their blog. Then each student could read the book talks and respond to their peers.</td>
</tr>
</tbody>
</table>

Source: Carney-Strahler (2011).

experience; how they are helped to learn, achieve, and participate fully in the life of the school” (Roberts, 2006, p. 25).

### Tips to Support Creativity in an Inclusive Classroom

Teachers can use the following tips to ensure greater inclusivity in their classrooms:

- Support possibility thinking that relies on “what if?” questions, open-ended activities, and experiences in solving unstructured problems
- Provide models for children, not to copy but to stimulate thinking
- Use cooperative groups that include children with different talents and strengths
- Provide a variety of tools for creative expression and demonstrate how to use them
Part 1  Foundations of Creative Thought

- Anticipate conditions that contribute to boredom (e.g., stop an activity before children become tired of it)
- Encourage students to take initiative and make use of unscheduled time (e.g., provide independent activities at centers in the classroom so that children have creative outlets)
- Seek professional development in creativity (Strom & Strom, 2002)
- Pursue partnerships with outside agencies (e.g., museums) and individuals (e.g., artists) who support young children’s growth in creativity

There are many different resources for locating high-quality software and mobile applications (apps) that accommodate to children’s special needs. Some recommended sources are featured in There’s an App for That.

THERE’S AN APP FOR THAT

Using Web 2.0 Tools to Support Creative Thinking

Create a Multimedia Timeline
*Our Story*
(*Ages 5 to 10*)

Children can collaborate to produce (and save) timelines that include annotations, photos, and videos. The timelines can be printed as a book or sent as a postcard. Consider using this during a lesson on sequence or, with older students, have them create a historical timeline or make timeline postcards during a unit on letter writing.

Design a Thinking Guide
*Exploratree*
(*Ages 7 to 10*)

This British site offers guides for exploring, analyzing, solving problems, and mapping ideas that can be filled in online or printed.

Host a Virtual Party
*Toca Tea Party*
(*Ages 3 to 6*)

[www.tocaboca.com](http://www.tocaboca.com)

This free app enables a child to have a virtual tea party. The tablet becomes a wooden table that the child sets with china, food, utensils, and sound effects—there’s even a cloth to wipe up spills. When the pastries are gone and the party’s over, a tilt of the table puts everything away until next time. Another app, *Toca Kitchen*, puts children in charge as they prepare various foods and serve them to satisfied customers. Follow up with similar items in the play area of the classroom and have children suggest different types of celebrations.
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Make a Mind Map
*Bubbl.us and Mindmeister*  
(*Ages 5 to 10*)

These sites offer brainstorming tools for younger (Bubbl.us) and older or gifted students (Mindmeister). Both enable a group of children to take stock of what they know, collaborate, and identify questions.

Simulate Time Travel
*CBC 4Kids*  
(*Age 5 and older*)
*discovery.com*

This online time machine for children enables them to explore such things as Cleopatra’s castle or a space station. This is a good link with literature and film about the concept of time travel that can lead to children’s original storytelling or writing.

Invent a Pet
*Neopets*  
(*Ages 3 to 10*)
*www.neopets.com*

At this site, children can assemble a pet, determine its requirements, and take care of it. Have the whole class work at the site, then share their creations in a virtual zoo and write about each one.

Make a Comic Strip
*Professor Garfield Comics Lab*  
(*Ages 6 to 10*)
*www.professorgarfield.org*

This free, easy-to-use Web site enables children to produce a professional-looking cartoon strip, complete with their original text.

**Specific Suggestions**

**Students with Emotional and Intellectual Challenges**

- Remember that “the arts are often the one area in which students who are challenged by academic content can first succeed” (Bafumo, 2005a, p. 1). Children with a variety of intellectual and emotional challenges such as cognitive disabilities, attention deficit/hyperactivity disorder (ADHD) (Healey & Rucklidge, 2005), or bipolar disorder (Simeonova, Chang, Strong, & Ketter, 2005) can express themselves creatively.
- Pair a child with attentional or intellectual challenges with a typically developing child and use the talking drawings strategy. In this approach, children draw their understanding of a nonfiction concept (e.g., the Statue of Liberty), then listen to an information book read aloud, and finally redraw and label the parts of their drawing now that
Part 1 Foundations of Creative Thought

they have obtained additional information from listening or reading (Fello, Paquette, & Jalongo, 2006/2007).

- Use a big book with a definite rhyme pattern, such as *Down by the Cool of the Pool* (Mitton, 2002) and practice until the children can recite (or read) the story aloud with expression. Engage children in creating sound effects or soft musical backgrounds for their performance of the book.
- Realize that children with autism spectrum disorder (ASD) may be highly creative in a specific domain, particularly if the tasks do not rely on interpersonal or language skills that often represent a challenge for children with pervasive developmental disorders (Pring, Ryder, Crane, & Hermelin, 2012).

**Students with Visual Impairments**

- A child with a visual disability may not be able to use crayons to produce a drawing that is pleasing to the eye, but that child can use fabrics to create a texture collage that is pleasing to the touch.
- To support children with visual impairments in enjoying picture books, record the text of the story and “narrate” the pictures as well, describing each illustration (Isbell, Sobel, Lindauer, & Lowrance, 2004).
- Give children with visual impairments opportunities to explore various story listening and story producing media—cassette tapes, DVDs, CDs, and text-to-speech and speech-to-text software (Cassell, 2004).

**Students with Hearing Impairments**

- Drawing and writing are important tools for self-expression, particularly for children with hearing impairments (Heath & Wolf, 2005).
- Children with hearing impairments often are very capable at expressing ideas through gesture and pantomime (Roush, 2005). Use picture books that invite physical participation to involve children with hearing impairments (Nespeca, 2005).
- Experience books, in which the child dictates or writes an account of a personal experience and then illustrates it with digital photos or drawings, are a means for creative self-expression (Pakulsky & Kadavarek, 2004).
- Teach all children in the class some simple sign language to facilitate the ability to communicate with a child with hearing impairments (see Murray, 2007).
- Opportunities for pretend play are an important way of supporting vocabulary growth in children with (and without) hearing disabilities. Make collections of puppets and other props that focus on a particular theme (e.g., The Little Red Hen), label the storage containers with pictures, and store them so that children can access them easily.
- Make word walls of vocabulary that enable children to express themselves creatively—lists of the names of imaginary creatures (e.g., unicorn, fairy), lists of verbs (gallop, fly), and lists of descriptive words (flowing mane, glittery wings).
- Use video technology, such as captioned stories, to support understanding for the child with hearing impairments.
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Students with Orthopedic Impairments

- Adapt the physical environment so that wheelchairs, walkers, and other orthopedic equipment can be accommodated and children can participate in pretend play (Doctoroff, 2001).
- The child whose physical condition affects fine motor skills for sculpting or painting at an easel may be able to mold large objects with clay or use hand and arm movements to fingerpaint. Think of ways to make art materials accessible to the child with orthopedic impairments.
- Investigate group games that have been adapted to include children with various disabilities (Torbert, 2005).

MEETING STANDARDS FOR CREATIVE ACTIVITIES

For a behavior to be creative, it must meet four basic criteria (Guilford, 1984; Jackson & Messick, 1965; Jalongo & Hirsh, 2012). These criteria are described next using examples of young children’s behavior.

1. Criterion 1: Creative behavior is original; it has a low probability of occurrence. Two-year-old Adam attended a college hockey game with his father, and the toddler now wants to be a hockey player. When Adam asked for hockey equipment, his parents told him he was too little and that it was too expensive, so Adam invented his own. He used a wooden spoon for a hockey stick, his
sister’s empty lip gloss container for a puck, socks for hockey gloves, and the open door to a closet as the goal net. Now “playing goalie” while his dad or older brother do the sports commentary is Adam’s favorite game. Adam’s behavior is unusual and surprising rather than typical and predictable. Thus it has a low probability of occurrence, and it is original.

2. Criterion 2: Creative behavior is appropriate and relevant. Six-year-old twins Becky and Belinda both love Hans Christian Andersen’s story “The Little Mermaid.” They want to look like mermaids and need to create long, flowing hair, so Becky suggests using scarves attached with bobby pins. To create a tail, Belinda has the idea of using a sock. Their mother helps out and gives them an old pair of socks to use. Belinda cuts off the foot portion and stretches the ankle part over both of her ankles, turning her feet outward to represent “fins.” The twins’ behavior is a good illustration of appropriateness. In order for behavior to be creative, it needs to be relevant to the goals of the person who produced it.

3. Criterion 3: Creative behavior is fluent; it results in many new, meaningful forms. Six-year-old Louie likes to invent things and does so frequently. One day he “invented a wind tunnel” with his dad’s help. Louie attached a small sheet to the sides of a large box fan with duct tape. Then his dad plugged in and turned on the fan and the fabric billowed out. Louie could sit inside and read. Fluency in creativity is comparable to fluency in language; it means that the child can generate one idea after another with apparent ease.

4. Criterion 4: Creative behavior is flexible; it explores and uses nontraditional approaches to problem solving. Lucia is seated next to Tomas, a fellow first grader who is disassembling a grease pencil. He pulls the string and unwraps the paper coiled around the lead. Lucia watches as Tomas throws the curls of paper in the trash can, and then she retrieves them. She cuts two pieces of curled paper, glues them on her drawing, and attaches a piece of string to each one. “There,” she says aloud. “The windows of my house have shades just like this.” The teacher comments on Lucia’s picture, saying, “And the shades on the windows you drew really roll up and down, too! This looks like a very special picture—will you choose it for your portfolio?” Lucia’s behavior is a good example of flexibility. She wanted to make her drawing three-dimensional, and she used a different method that involved materials that others considered useless. As the behaviors of these children suggest, children’s thinking is creative when it is original, appropriate, fluent, and flexible.

Three basic intellectual functions support creative expression and arts-based learning: finding out how existing things work, finding out what has happened, and producing new or unique things (Dorn et al., 2004; Hope, 1991). As you review the following examples, refer to Figure 1.9.

Preschool: Finding Out How Existing Things Work

In a classroom for 3- to 5-year-olds, the food preparation gadgets in the cooking center have captured the children’s imaginations. Among the children’s
Chapter 1  Understanding Children’s Creative Thought and Expression

Figure 1.9  Features of Creative Experiences and Activities

Activities stimulate creative thought and problem solving when they:
• Are relevant to the learner, meaning that they are developmentally appropriate, understandable to the learner, and have “real world” applications
• Meet the needs of children at different levels of development because the challenges have multiple answers (rather than one right answer)
• Enable students to engage in long-term, open-ended projects and pursue a narrower range of ideas and materials in greater depth
• Capitalize on children’s interests, curiosities, and passions and allow the child to set the pace and take the lead
• Support children as they use the processes of exploring, selecting, combining, and refining a form
• Are framed by teachers and students, with teachers structuring or limiting as necessary
• Give the students something practical and worthwhile to do that engages thoughts and feelings, mind and body
• Encourage children to look for models and make connections, emphasizing the influence and the works of others
• Use a variety of perspectives (such as critic, philosopher, inventor)
• Help students develop a set of standards for evaluating their performance and peers’ performance that goes beyond “good” or “bad” and carefully analyzes the dimensions of a work
• Expand opportunities for learning and lead to new, interesting challenges

Source: Data from Felton & Stoessiger (1987); Jalongo & Stamp (1997); Lindström (1997).

favorites are the hard-boiled egg slicer, the melon baller, a manual orange juicer, an ice cream scoop, and an apple corer.

Primary: Finding Out What Has Happened

A teacher’s observations of her second graders on the playground reveal that many of the students from low-income homes are much more adept at inventing games and playing cooperatively than the children who come from economically advantaged homes. Rather than allowing this important strength to go unnoticed, the teacher asks the children to show the class some of their games, which involve syncopated hand clapping and original jump rope chants. When the other children try to participate in the games these students have created, they gain a new appreciation for their classmates’ skills. The teacher further supports and extends the children’s activity by sharing several books of jump rope jingles, inviting each child to discuss favorite childhood games with various family members, giving children the opportunity to share what they learned from their interviews, inviting parents to come in to demonstrate favorite childhood games, and teaching the children new games from other eras and lands. Some picture books that are particularly intriguing to the children are *Hopscotch Around the World* and *Jump Rope Around the World*. As a result of this second-grade teacher’s interest and encouragement, all of the students now recognize that outdoor play can be remarkable in its resourcefulness, reliance on cooperation, and capacity for representing the culture of childhood and the community.
Intermediate: Producing New or Unique Things

A wide array of strategies to promote creative thinking have been designed and implemented over the years (see A. J. Cropley [2001] for a review). What follows are some of the most well-known strategies that are used to facilitate creative thinking in older children and a description of how teachers might put them to use in a classroom. Brainstorming is a technique that is used to capitalize on the creative-thought and problem-solving capacities of a group. Feldhusen (2001) offers the following guidelines for brainstorming:

1. Make sure that students understand the task dimensions.
2. Indicate that generating many ideas or responses is the goal.
3. State that there will be no evaluation or judgment of responses while ideas are being produced.
4. Assure students that they should feel free to suggest unusual and original ideas.
5. Urge students to strive to connect, relate, or alter their own and others’ ideas.
6. Suggest that students be brief in responding; lengthy statements should be avoided. (p. 12)

A creative-thinking technique that is used to stimulate thinking uses the acronym SCAMPER. The letters stand for different mental operations that can be performed on something: substitute, combine, adapt, modify/minify/magnify, put to another use, eliminate, or reverse/rearrange (see Barnes, 2002).

Although it is sad to think that education is in any way responsible for thwarting the child’s creative potential, it evidently is (Imagine Nation, 2008; Sternberg, 2006a). As children mature, their creative thinking tends to decline (Claxton et al., 2005; Dacey, 1989; Olson, 2006) and often is “stalled” by age 5 (Tysome, 2003). For example, in case studies of children 3 to 7 years of age, young children’s art often went unappreciated by teachers and they tended to create their own “studios” at home to pursue drawing; however, these activities tended to fall away as they grew older (Anning, 2003; Anning & Ring, 2004).

By ages 9 to 10, there is a tendency throughout the world for children to become very conventional and conforming (Craft, 2005). Then, as children approach adolescence, many begin to think of themselves as “ordinary” and therefore inferior in creative thinking. By the time most people reach adulthood, they start to see innovation and artistic expression as avenues open only to those who are officially recognized as having exceptional talent (Kerka, 2002). Are school personnel deliberately suppressing children’s creativity? Actually, it is more often the case that adults, including teachers, have misconceptions about creativity and act on those erroneous beliefs (Sharp, 2004; W. M. Williams, Brigockas, & Sternberg, 1997).

In general, educators seem to lack two types of knowledge. The first is how to recognize creative behavior in children and the second, how to promote
Chapter 1  Understanding Children's Creative Thought and Expression

creativity in the classroom. Following are four common mistakes that teachers make with respect to creative thinking:

1. **Confusing measures of intelligence with measures of creativity.** When asked to identify creative students, teachers tend to mention those with high test scores or grades (Nicholson & Moran, 1986). Although creative thinking is a form of intelligence, it is not the type usually emphasized in elementary schools, where the focus is on basic skills in reading and mathematics (Gardner, 2009). Furthermore, a person might be a creative genius in one specific area, such as composing music, but not be particularly creative in another related area, such as choreography.

2. **Being overly influenced by socially desirable behavior.** Academic environments are not always accepting of children who “dare to be different” (Fleith, 2000). History is full of examples of people who were called “daydreamers,” “underachievers,” or “troublemakers” during childhood only to become highly creative or even creative geniuses in later life. Examples include the British politician Sir Winston Churchill, the actor Sara Bernhardt, the scientist Albert Einstein, the inventor Alexander Graham Bell, and the dancer Isadora Duncan.

3. **Being overly influenced by the child’s rate of development.** Adults react more readily and more favorably to children’s uncommon (advanced) behavior than to children’s unconventional (creative) behavior (Nicholson & Moran, 1986). To illustrate, think about two 3-year-old boys, Aaron and Matt. Aaron’s parents have taught him to identify several reading words printed on flashcards. Matt’s parents encourage independence and creative problem solving. In fact, one of Matt’s favorite expressions is “I have an idea. We could. . . .” Matt is learning to problem solve while Aaron is being conditioned to imitate adult behavior as rapidly as possible. Aaron may be precocious (i.e., capable of doing something in advance of most peers), but his responses are not creative.

4. **Associating creativity with socioeconomic privilege.** Studies have shown that teachers—even teachers in gifted/talented programs—tend to overlook the influence of cultural background, social circumstances, and the individual situations that affect creativity (Lee & Seo, 2006). Some teachers associate creativity with economic privilege and fail to notice it in students who are not engaged in the fine arts (Torrance, 2003). The disturbing outcome of such attitudes is that when children from low-income backgrounds demonstrate creative behavior, their abilities often are overlooked or even actively discouraged by teachers. A review of 62 studies concluded that arts education has particular advantages for students from economically disadvantaged backgrounds, yet this population is least likely to have extensive opportunities and a wide variety of materials (Manzo, 2002). Many traits commonly displayed by African American children—a low tolerance for boredom; excitement and involvement with new designs, music, or ideas; language rich in imagery, humor, symbolism, and persuasion; and high divergent thinking ability—are associated with creative thinking. However, research suggests that some teachers treat it as misbehavior or disrespect (Baldwin, 2001).
Frequently Asked Questions About Creativity

Is it true that children have active imaginations?
Even when wide awake, children experience more frequent theta wave activity, a daydream-like state that mature adults experience primarily as their minds hover between being awake and falling asleep (M. Diamond & Hopson, 1999). Theta wave brain activity is more relaxed, freewheeling, and receptive to fleeting mental images and the period following deep sleep appears to “prime” the brain to make associations (Cai, Mednick, Harrison, Kanady, & Mednick, 2009). Eminent creative individuals in various fields report a host of techniques to capture these moments (Goleman & Kaufman, 1992; Runco & Pritzker, 1999). Evidently, children are adept at forming varied and unusual images while adults tend to have the advantage when it comes to storing and retrieving information, drawing on experience, and making judgments about what is appropriate and effective. So children may not be “more” imaginative, but they certainly do have active imaginations.

Are children more or less creative than adults?
Children are differently creative than adults (Adams & Chen, 2012; Glăveanu, 2009). Children have unique ideas but may not yet have the ability to execute them well or communicate them clearly to others. Originality in children “reflects their lack of inhibitions rather than their intentional and meta-cognitive efforts” (Runco, 2004, p. 22). Evidently the creative assets of childhood include a tolerance for ambiguity, a propensity for nonlinear thinking, and receptivity to ideas that might be quickly discarded by an adult as too fanciful to merit further consideration. The line of demarcation between fantasy and reality is not as firmly drawn for children as it is for adults, so ideas from one realm slip through easily into another. This may enable children to respond in ways that are nonstereotypic—a trait that many adults, particularly those in the arts, find enviable (Kinkade, 2002).

Is being creative valued mainly because it provides an emotional release?
Creativity is more than “letting off steam.” There are important differences between making noise and making music and between jumping around and dancing, for example. The artist's behaviors are planned, controlled, and practiced. This tendency to treat the arts as emotional outlets distances creative work not only from the cognitive and physical processes used to attain excellence, but also from the cultural contexts in which creative works are produced. Creativity is much more than an emotional outlet; it is an expression of values, a source of national pride, and a way of promoting intercultural understanding.

How can teachers support the creative expression of all children?
“Creativity killers” include such things as inflexible schedules, intense competition, reliance on extrinsic rewards, lack of free time, and the absence of social support (Amabile, 1986; Sternberg & Kaufman, 2010). Early childhood educators bear major responsibility as advocates for children’s creative thought and expression (Beghetto et al., 2012). Fulfilling this important role often involves unlearning common assumptions and replacing them with more enlightened perspectives.
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CONCLUSION

Effective teachers optimize the creative potential in their students in three basic ways: (1) by teaching the skills and attitudes of creative thinking to students, (2) by orienting students to the creative methods of various disciplines, and (3) by creating a “problem-friendly” classroom in which lines of inquiry with relevance for learners can be pursued through multidisciplinary methods (Starko, 2001). To function at full creative capacity, children need the freedom to pursue questions that captivate them and work in learning environments that offer a blend of high support and high expectations (Rea, 2001). As Sheridan-Rabideau (2010) points out, “If the challenge of twenty-first-century education is to prepare future generations to address the complexities of a world they are certain to inherit, our task as educators is to create a pedagogy that empowers our students to see themselves as agents of change equipped to address the most pressing problems around the globe and down the street” (p. 54).

CHAPTER SUMMARY

1. Creativity is a behavior characterized by originality, relevance, fluency, and flexibility.
2. Children’s thinking is different from adults’ thinking because, generally speaking, children are highly sensitive to stimuli, are less inhibited, and can become completely absorbed in imagination (“as if”) and pretend (“what if”).
3. If teachers regard the dimensions of children’s creative behavior—originality, appropriateness, relevance, fluency, and flexibility—they can further develop children’s creative potential. Creativity, imagination, and fantasy are all interrelated types of thinking that largely depend on the ability to use symbols in inventive ways. Literal thought and imaginative thought are distinctive, yet complementary.
4. Theories that attempt to explain the desire to create may be categorized as humanistic, psychoanalytic, and constructivist.
5. The creative process can be described in four stages: preparation, incubation, illumination, and verification/communication.
6. Some ways that classroom environments support creativity include providing psychological safety by reducing stress and anxiety, valuing process over product, removing time limits, valuing self-expression, encouraging peer interaction, and minimizing competition and external rewards.
7. Active, child-initiated experiences give the child authentic opportunities for creative expression and build the child’s inner sense of psychological freedom or ego strength. When teachers provide a classroom environment in which children feel safe to experiment, to take the risks associated with learning something new, and to learn from their mistakes as an accepted part of the learning process, the condition of psychological safety has been met.
8. Teachers and parents play a crucial role in fostering the creative process in children. One recommended teaching strategy is to begin by building children’s awareness, then move to exploration, next to inquiry, and finally to utilization.

9. All children are creative. If all children are to develop their creative potential to the fullest extent, every classroom must provide a wide range of opportunities for creative expression. This means that teachers will need to respect children’s ethnic and cultural diversity, acknowledge the role of multiple intelligences, adapt materials to each child’s needs, and encourage authentic self-expression.

Discuss: Perspectives on Creative Expression

1. Watch Sir Ken Robinson’s speech at the 2010 Technology, Entertainment, Design (TED) conference, Bring on the Learning Revolution! at www.ted.html. Do you agree that education is responsible for thwarting creativity? Why or why not? What might teachers do (or fail to do) that would undermine young children’s creative expression? Sometimes children’s creativity is mistaken for misbehavior. Were you ever punished as a child for creative thinking?

2. Within your small group, locate a lesson plan online and critique it using the criteria in Figure 1.9.

3. Cite several current examples of imagination and creativity at work in various fields (medical research, business, new inventions, film, music). How would an education that fosters creativity and artistic expression prepare children for the workplace of the future?

Assess: Children’s Creative Work

1. With parent or guardian and child’s permission, collect several examples of a child’s schoolwork that he or she has brought home. Use the criteria in Table 1.1 as a checklist—what evidence do you see (or fail to see) of fluency, flexibility, originality, and elaboration? If possible, ask the child to talk about the work. Did the activity: allow the child to make choices? build on the child’s interests and curiosity? promote originality?

2. Conduct a real or virtual observation in a classroom setting such as a TeacherTube video. TeacherTube is similar to YouTube except that the materials posted are submitted by teachers for use by other teachers. Use Figures 1.4 and 1.6 to assess the support for creativity in the lesson or activity you observed online.

3. With parent or guardian and child’s permission, interview a child (in person or online) about an original work (e.g., drawing, painting, story, book, etc.) that he or she is particularly proud of. Use the principles in Figure 1.7 as appropriate to discuss the work with the child.
Chapter 2

Supporting Children’s Play, Games, and Inventions
Ample evidence points to the enormous health and professional benefits of laughter, games, and humor. In the Conceptual Age, in work and life, we all need to play.

Daniel Pink, 2006, p. 66

**LEARNING OUTCOMES**

After reading this chapter and completing the activities throughout, you will be able to:

- Describe the theoretical and research base of play
- Discuss the importance of play in fostering a child’s learning and development
- Explain how each type of play develops
- Use technology to support children’s play
- Adapt play to meet the needs of all learners across all disciplines
- Consider the teacher’s roles and responsibilities in children’s play
- Differentiate instruction and integrate the curriculum using games

**CLASSROOM PERSPECTIVES ON PLAY, GAMES, AND INVENTIONS**

**Preschool–Kindergarten**

Preschoolers Jonah, Dylan, and Sarena recently heard books about restaurants such as *Today Is Monday* by Eric Carle (1993) and *Dim Sum for Everyone* (Lin, 2001). Now they are in the dramatic play center re-creating restaurant play based on the books by pretending to be different restaurant workers; talking about their roles as cook, server, and cashier; and spontaneously developing a familiar restaurant theme. At one point, Jonah announces, “I think we should make this a restaurant,” and initiates the restaurant play episode with Sarena and Dylan. Dylan becomes the cook, who makes dim sum. They check their own imaginative play against the reality of restaurants when they decide to “make dim sum . . . lock up the store . . . clean up the kitchen . . . and put the dishes away.” Their words, actions, and gestures show their understanding of what a restaurant needs based on their experiences, the media, and the play context.

**First Grade–Second Grade**

Ms. Lee’s first graders have been doing a range of science experiments after reading the book *Oobleck, Slime, & Dancing Spaghetti: Twenty Terrific at Home Science*
Chapter 2  Supporting Children’s Play, Games, and Inventions

Experiences Inspired by Favorite Children’s Books (Williams, 1999). Some children ask Ms. Lee if they can make oobleck, so she provides some cornstarch, water, and red food coloring. The children explore the cornstarch—feeling, smelling, and tasting the white powder—and then mix it with water and red food coloring to produce red goo. Then they explore the mixture—squeezing it, talking about it, shaping it into balls, describing it as soft and gushy, and calling it such names as “mushy mess.” They laugh when they make it drip. Some add more water to see what happens; others add more cornstarch to see what happens.

Third Grade–Fourth Grade

Fourth-graders Eli and Maya are playing chess in the classroom game area. During the game, they use such terms as jeopardy, capture, check, and checkmate; they also remind each other of the ways the different pieces can move. Their faces, body language, and conversation show how they use different thinking processes needed to protect their king piece. Eli and Maya’s choice of this game shows their high level of cognitive activity, social competence, and autonomy.

Each of these perspectives shows the importance of children’s play, games, and inventions. They provide information about the children’s knowledge and ways of thinking as they play, create, imagine, invent, figure things out, and make things work. This chapter explores the essential role of play, games, and inventions in helping all children learn, develop, and create.

THEORETICAL AND RESEARCH BASE: WHAT IS PLAY?

Over the years, both theory and research have documented that play is children’s optimal vehicle for learning and development. It also suggests that the absence of play is often an obstacle to developing healthy, competent, and creative individuals. Although experts who study play do not agree on its definition, there is agreement on characteristics that distinguish play from other types of human behavior (Fromberg & Bergen, 2006; Frost, Wortham, & Reifel, 2012; J. Johnson, Christie, & Wardle, 2005).

Characteristics of Play

There are at least five essential characteristics of play. Each was illustrated in at least one of the opening scenarios.

1. Play is voluntary and intrinsically motivated. In play, children freely choose the content and direction of their activity. The play is self-satisfying because it does not respond to external demands or expectations. Recall how Jonah, Dylan, and Sarena chose how to play out the roles of restaurant workers.
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2. *Play is symbolic, meaningful, and transformational.* Play helps children connect their past experiences with their current world. It empowers them to transform themselves into others’ roles as they switch back and forth and in and out of different situations. By pretending to be others, they assume a “what if” or “as if” attitude. When Dylan imagined himself as a cook making alphabet soup, he assumed a “what if” attitude by imagining what a cook might say or do. When Jonah pretended to be a cook, he assumed an “as if” attitude by transforming himself into a cook and imagining cooking, stirring, and serving soup, like a cook. It is the “as if” attitude (the play) that facilitates more ideas.

3. *Play is active.* In play, children experiment, explore, investigate, and inquire with people, objects, or events. Notice how the first graders making “oobleck” explored what different proportions and combinations of cornstarch, water, and food coloring would do to it—making it drier, wetter, or mushier, depending on the amounts used. They also used language such as “mushy mess” to describe their experiences. Active play experiences increase children’s awareness of what materials can do and what children can do with materials while at the same time increasing their skills of observation and description.

4. *Play is rule-bound.* Either explicit or implicit rules govern children’s play. Younger children both create and change rules in play that apply to particular role behavior and object use. Older children accept predetermined rules to guide the play. In the restaurant scenario, the preschoolers created their own rules for paying, cooking, and cleaning up; in the chess scenario, the children used the appropriate language and moves for the individual pieces.

5. *Play is pleasurable.* Children play for the sheer pleasure it brings—not for an extrinsic reward. In each of the opening classroom perspectives, the children you read about were playing because they chose to play as they wished and played with total concentration on what they were doing. Clearly, these children were pursuing their play because it made sense to them.

Play supports children’s learning in two main ways. First, it helps children learn knowledge, skills, and dispositions—such as problem solving, perseverance, and self-regulation—that are essential for learning and school success. Second, play serves as a vehicle for learning other skills such as language, literacy, and social skills. In play, children are empowered to do things by themselves, to feel in control, and to test out and practice their skills (Copple & Bredekamp, 2009; J. Johnson et al., 2005; Wassermann, 2000).

These five characteristics describe what play is. Yet, it is equally important to consider what play is not. Table 2.1 provides a continuum of behaviors from play to nonplay and relates them to the type of learning that each generates.

**Changing Views of Play in the Curriculum**

If we could travel back in time and interview three educational leaders about the value of play, what would they say? John Dewey, Patty Smith Hill, and Susan Isaacs all strongly promoted play in the classroom. Dewey (1916, 1938) advocated that play was a major way all children learn about themselves and
their world. While children build on what they know in their play, their play continually changes by their experiences. For Dewey, play becomes a recurring cycle of learning that is essential to what children know and can do. Through active learning, meaningful, experiences with concrete materials coupled with opportunities to think and talk about these experiences, children build understanding. The peer interactions and the negotiations that inevitably occur during play enhance children’s social competence. Dewey’s ideas about active learning continue to permeate today’s curriculum.

Patty Smith Hill (1923), strongly influenced by Dewey’s ideas, also recognized the importance of play for children’s learning. She designed child-centered activities and curriculum based on children’s development and needs and used large classroom spaces to enhance children’s learning through play. In her work-play period, kindergarten children freely explored the objects and materials in their environment, initiated and carried out their own ideas, and engaged in cooperative learning groups with their peers.

Susan Isaacs (1933), another leader in children’s play, believed that play contributes to all aspects of children’s development. Her work was especially useful to teachers as they helped children develop mastery of their emotions.
### Table 2.1 Continuum of Behavior from Play to Nonplay and Types of Learning

<table>
<thead>
<tr>
<th>Focus of play</th>
<th>Child-Initiated Play</th>
<th>Facilitative Play</th>
<th>Directed Play</th>
<th>Work Disguised as Play</th>
<th>Work (Nonplay)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child has greatest degree of control over situation, event, or other players. Can freely interact and choose.</td>
<td>Child plays within a flexible environment of social rules, requiring players to attend to externally imposed control. Adults monitor play and often redirect, challenge, and add materials.</td>
<td>Adults impose play elements and often lead the play. Child does not usually choose whether, what, how, or when to play.</td>
<td>Task oriented activities that are not inherently playful but can be transformed into directed or guided play activities if the potential for internal control, motivation, and reality can be tapped.</td>
<td>Activities designed to reach an externally defined goal and for which motivation is external. No opportunity to bend reality. Adult’s expectations are central and often evaluated.</td>
<td></td>
</tr>
<tr>
<td>Example</td>
<td>Child freely chooses when, how, what, and with whom to play. High levels of social and pretend play occur.</td>
<td>Child may have a limited number of choices or be expected to engage in a specified number of play activities within a particular time period.</td>
<td>Group games, finger plays, directed story reenactment.</td>
<td>Rote memory activities such as singing ABC songs, spelling games, addition facts races.</td>
<td>Adults decide when, how, where, or on what to work. Goal-oriented tasks, such as worksheets, dittos, and other drill-and-practice activities.</td>
</tr>
<tr>
<td>Type of learning</td>
<td>Discovery learning</td>
<td>Guided, discovery learning</td>
<td>Receptive learning</td>
<td>Rote learning</td>
<td>Repetitive learning</td>
</tr>
</tbody>
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*Source: Data from Bergen (1987); Christie (2001); and Frost, Worhant, & Reifel (2012).*
Chapter 2  Supporting Children’s Play, Games, and Inventions

Isaacs ardently defended children’s right to play and challenged parents to support play, which she viewed as children’s natural resource for learning.

Prior to the large-scale societal and educational reforms beginning in the 1960s, most early childhood practitioners recognized the importance of play as central to the curriculum. They believed that play reflects children’s experiences, is meaningful and relevant, and is a rich resource for learning. The translation of Piaget’s (1962) work in the 1960s emphasized play’s cognitive significance, the way individual children use play to practice known information and construct understanding. Piaget’s work began to find support for the idea that children of all ages are active learners. Additionally, Vygotsky’s (1967, 1978) work emphasized how children use play for social and cultural learning and the development of the social tool called language.

At the same time, other researchers documented the importance of the early years for influencing intellectual development (B. Bloom, 1964; Bruner, 1966; J. M. Hunt, 1961). Educators began putting these research ideas into practice to improve the academic skills of “disadvantaged” children (M. B. Bronson, 2006), but did so in inappropriate ways. Curriculum designers believed that earlier is better. Thus, academic skills and a “back to basics” philosophy replaced play as central to the early childhood curriculum, to the grave concern of many educators.

Since the 1990s, new research in neuroscience (how the brain functions), the rediscovery of inquiry learning (the process of asking and answering questions, as taught in the schools of Reggio Emilia), and the reemergence of the importance of teaching the whole child influenced the way educators viewed early learning and play in particular. We define whole child as the belief that all

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cognitive
Having to do with knowledge, understanding, and intellectual growth.

neuroscience
The scientific study of how the brain functions.

inquiry learning
The process of asking and answering questions, as taught in the schools of Reggio Emilia.

whole child
The belief that all the domains of children’s development—physical, cognitive, social, emotional, and creative—are fundamental to children’s well-being.
the domains of children’s development, physical, cognitive, social, emotional, and creative are fundamental to children’s well-being. This research supports children’s need for many opportunities to learn spontaneously, to engage in constructive social relationships, and to think about the consequences of their actions (Hirsh-Pasek & Golinkoff, 2003; Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009; E. Jensen, 2000). Opportunities for children to learn through play were slowly reintegrated into the early childhood curriculum.

Unfortunately, the educational climate is once again changing and influencing views of play. Policies and legislation, such as the No Child Left Behind (NCLB) Act passed in 2001 and new K–12 standards as part of the Race to the Top program (2012), have increased expectations for children and more teacher accountability that has led to using more scripted, rote lessons. The emphasis on annual testing has increased the pressure on teachers “to teach to the test” while denying children the opportunities to learn through play and other developmentally appropriate ways. As children are pressured more and more to participate in high-stakes, fast-paced, teacher-directed, formal lessons, there is little, if any, time to learn through play. Even though many teachers believe that play experiences should be the centerpiece of their curricula, they feel obligated to justify the use of play with the phrase “Play is children’s work,” which implies that work is serious and play is trivial. This misconception equates “real” school with a narrow view of learning that focuses on isolated facts and skills rather than making information one’s own.

In contrast to this narrow view, educational leaders and the business community are calling for schools to teach the necessary skills and develop the abilities that will be required of future workers, and are raising questions about the unbalanced focus on rote learning (National Center on Education and the Economy, 2007). Schools and curricula at all levels must be refashioned to develop children’s initiative and inventiveness by fostering their problem-solving ability, divergent thinking, and social skills.

WHY CHILDREN PLAY

No theory of play adequately explains why children play. Some suggest that children play because they feel physically safe during play (the house is not really burning, so they can escape). Others suggest that children play because they feel emotionally safe (playing out events after a natural disaster provides a way for children to face the realities of their environment). Still others suggest that play helps children take in new information and make it their own, such as creating a new flying machine as part of a unit on space or using invented spelling to write a message. Collectively, however, these theories represent a belief in the power of play in children’s development. These theories can be categorized as classical theories (theories prominent in the 19th century through World War I) and modern theories (theories prominent after World War I) (Frost et al., 2012; Scarlett & New, 2007).
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Classical Theories

Classical theories sought to explain the causes and purposes of play through theories of surplus energy, recreation/relaxation, practice, and recapitulation (M. J. Ellis, 1973). We can see influences of these theories in how today’s teachers view children’s behaviors in the classroom.

**Surplus-energy theory** suggests that humans have some energy to be used for survival. Energy not used for survival is spent on play and becomes surplus energy. When children have limited opportunities to move around, they seem to have bursts of energy that relieve stress and tension so they can settle down again. Teachers’ views about “getting rid of excess energy on the playground” or “getting the wiggles out” support this theoretical perspective.

**Recreation/relaxation theory**, in contrast to surplus-energy theory, suggests that play restores energy used in work. The influence of this theory is evident in early childhood classrooms where children alternate between quiet and active activities and in elementary classrooms where children have daily opportunities for recess and physical activity to provide balance in their daily lives.

**Practice theory**, also called instinct theory, proposes that play prepares children for the future roles and responsibilities needed to survive in their culture. When young children pretend to be a mother, father, or teacher and invent ways to use available materials to represent adult tools and then create play episodes, they are practicing the behaviors and characteristics of significant adults in their lives. When elementary children play board games, they practice such essential life skills as strategic thinking, reasoning, and self-regulation.

**Recapitulation theory** also focuses on instincts. In contrast to practice theory, it posits that play allows children to revisit developmental stages observed in their ancestors and shed any negative behaviors. Play is seen as developing in stages and is a vehicle for learning to live in today’s world. Popular games of chase and pursuit can be categorized within recapitulation theory for all ages.

Modern Theories

Modern theories of play emphasize the outcomes of play for the child (Frost et al., 2012; Scarlett & New, 2007). Three major modern theories are psychoanalytic, supporting emotional development; cognitive-developmental, supporting mental development; and sociocultural, focusing on social development.

**Psychoanalytic theory** views play as important for emotional release (Freud, 1958) and for developing self-esteem as children gain mastery of their thoughts, bodies, objects, and social behaviors (Erikson, 1963). Play helps children enact feelings, without pressure, by being able to relive experiences and master them in reality. Moreover, it provides adults with clues to children’s individual needs. After the birth of a new baby, it is not uncommon to hear a preschool brother or sister at play saying to a doll, “I’m taking you back to the hospital.” Expressing resentment through play enables children to gain control of it in real situations.
Cognitive-developmental theory examines play as a mirror of children’s developing mental abilities (Bruner, 1966; Piaget, 1962; Sutton-Smith, 1986). Piaget proposes that children create their own knowledge about the world through their interactions with people and materials. They use known information to consolidate new information and skills, to test new ideas against their experiences, and to construct new knowledge about people, objects, and situations.

Bruner (1966) and Sutton-Smith (1986) interpret play as flexible thinking and creative problem solving in action. By focusing on the process of play, children engage in multiple combinations of ideas and solutions that they use to solve relevant life problems. For Bruner, play allows children to discover ideas for themselves and to view children as “knowers” even before we explicitly teach them.

Sociocultural theory emphasizes the centrality of the social and cultural contexts in development (Vygotsky, 1967, 1978). Vygotsky (1978) believed that play is a “leading factor in development” (p. 101) and that “in play a child behaves beyond his average, above his daily behavior; in play it is as though he were a head taller than himself” (p. 102). Because children first encounter knowledge in their social world that later becomes the source of their conceptual understandings, play acts as a mental support so that children can think through and solve problems in new ways. This zone of proximal development, referred to in Chapter 1 (Vygotsky, 1978), gives children the freedom to bend reality and do things in play that they are often unable to do on their own outside the play setting. For example, Ms. Rodriguez’s fourth graders have a weekly time for playing their invented games, variations of common board games they create in pairs or small groups such as bingo or Clue that often contain the content they are studying, such as questions about the properties of liquids, constants and variables, and vocabulary words such as volume, weight, and graduated cylinder. Notice that Ms. Rodriguez provides the context for her fourth graders to understand these properties first in a social setting (pairs or small groups) and then as individuals in constructing their knowledge.

Each of these theorists supports the essential role of play for children’s optimal development. They illustrate the many ways play can support children’s learning in meaningful and authentic ways. Table 2.2 lists the major theories, theorists, and purposes of play. Collectively, these theories provide teachers with a framework for supporting children’s play and play skills in the classroom.

Play, Developmentally Appropriate Practice, and the Creative Arts

Early childhood educators have long respected play as the primary way children learn. As stated in principle 10 of the National Association for the Education of Young Children’s (NAEYC) 2009 position statement on developmentally appropriate practice (Copple & Bredekamp, 2009), “play is an important vehicle for developing self-regulation as well as for promoting language, cognition, and social competence” (p. 14). In addition, the position paper highlights how
play supports children’s learning, development, and well-being across the ages. Through play, all children discover what they can do, test their physical and mental abilities, and compare these with those of their peers. Specifically, play provides children with a developmentally appropriate context to:

- Engage in playful language activities that allow children to experiment and practice the new vocabulary and language skills they need to become proficient readers and writers
- Build understanding of abstract mathematical and scientific concepts so necessary to success in school and in life (Elkind, 2007)
- Acquire strong social-emotional skills by interacting in a variety of social situations and learning to regulate their behavior (Riley & Jones, 2007)

<table>
<thead>
<tr>
<th>Theories</th>
<th>Theorists</th>
<th>Purpose of Play</th>
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<tbody>
<tr>
<td>Classical</td>
<td></td>
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<tr>
<td>Surplus-energy</td>
<td>Schiller and Spencer</td>
<td>Expend excess energy to survive</td>
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<tr>
<td>Recreation/relaxation</td>
<td>Lazarus</td>
<td>Restore energy used in work</td>
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<tr>
<td>Practice/instinct</td>
<td>Groos</td>
<td>Practice future survival skills</td>
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<tr>
<td>Recapitulation</td>
<td>Hall</td>
<td>Reenact ancient activities</td>
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<tr>
<td>Modern</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoanalytic</td>
<td>Freud</td>
<td>Master unpleasant experiences</td>
</tr>
<tr>
<td></td>
<td>Erikson</td>
<td>Master physical and social skills to build self-esteem; express wishes and needs</td>
</tr>
<tr>
<td>Cognitive</td>
<td>Piaget</td>
<td>Practice and consolidate known information and skills through different types of play:</td>
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<tr>
<td></td>
<td></td>
<td>Functional play (repeated motions)</td>
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<tr>
<td></td>
<td></td>
<td>Symbolic play (make-believe)</td>
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<td></td>
<td></td>
<td>Games with rules (predetermined rules)</td>
</tr>
<tr>
<td>Sociocultural</td>
<td>Vygotsky</td>
<td>Foster abstract thinking and self-regulation through symbolic play. Contribute to potential development (performance with a more capable peer or an adult or the zone of proximal development). Enable child to grapple with unrealizable desires.</td>
</tr>
<tr>
<td>Other</td>
<td>Bateson</td>
<td>Operate on two levels at the same time. On one level, children are engrossed in pretending; on another level, they are aware of their true identities.</td>
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</tbody>
</table>
Similarly, the creative arts are central to supporting children’s learning through play. By the *creative arts* we refer to art, music, movement, dance, drama, and storytelling that are also foundational to children’s learning and development. Even though the arts and play have often been downplayed in the curriculum, their essential role in 21st-century learning is well documented (Partnership for 21st Century Skills, 2012; Pink, 2006). Because the arts are a natural vehicle for playful learning and exploration, they are an important way for children to express themselves, to integrate the subject matter disciplines (Soundy & Qui, 2007), and to have the common language of imagination to communicate with others (Copple & Bredekamp, 2009; Eberle, 2011; Gardner, 2000, 2006).

As the next section details, play is what childhood is all about. First, read what teachers have to say about play and then think about your own reflections.

**TEACHERS’ REFLECTIONS ON PLAY, GAMES, AND INVENTIONS**

**Preservice Teachers**

“I never realized that there was so much to learn about play and games. I’ve learned some reasons why so many people do not believe that play is important.”

“I used to think of play and games as things to take up time with the children. Now I realize that play and games are excellent tools for learning, not just something children do to keep busy.”

**Inservice Teachers**

“I realized I needed play in my classroom when the children began complaining of headaches and I was having no fun. I haven’t changed any of my curriculum objectives; I’ve just looked for better ways to make learning meaningful for children.”

“I never thought that the absence of play could be detrimental to children’s development. As an experienced elementary school teacher, I struggle with my own philosophy of teaching that keeps swinging back and forth between a play-centered curriculum and a teacher-directed one.”

**Your Reflections**

- What role do you think play, games, and inventions should have in the curriculum?
- Can you envision different types of play in the curriculum?
- How might your beliefs about play, games, and inventions enhance or inhibit children’s learning and development?
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HOW CHILDREN LEARN THROUGH PLAY

Guidelines from the Association for Childhood Education International (ACEI) and the NAEYC, two respected professional associations, affirm that play is essential for all children’s healthy development and learning across ages, domains, and cultures. Play does the following:

- Enables children to make sense of their world
- Develops social and cultural understandings
- Allows children to express their thoughts and feelings
- Fosters flexible and divergent thinking
- Provides opportunities to meet and solve real problems
- Develops language and literacy skills and concepts
- Promotes motor skills through physical exercise (Copple & Bredekamp, 2009; Frost et al., 2012; Gronlund, 2006; Isenberg & Quisenberry, 2002)

In the following vignettes, consider how play contributes to children’s cognitive, language, literacy, social-emotional, physical, and creative development.

Play and Cognitive Development

Ellen, Taralyn, and Jasmine are first graders. On this day early in the school year, they come into their classroom, hang up their backpacks, and then choose to play school at the board. Ellen decides that Jasmine and Taralyn should get a chair and bring it up to the board. They each also find a yardstick.

Ellen:  We better have two chairs.
Taralyn:  (writing on the board) Today is . . .
Jasmine:  I need to check the size. (using the yardstick, begins to measure herself while sitting down) I am the big teacher. My size is up to here. (pointing to where she measured herself)
Ellen:  (gets up from the chair acting like a teacher) I will write it. You sit down.
Jasmine: Today is what? (gets up) I want to be the teacher.
Ellen:  It’s my turn first. You can be the teacher next.
(As Ellen looks at the calendar to find the words she wants to use, Taralyn measures herself with the yardstick.)
Taralyn:  Today is January 8, 2013.
Jasmine:  Ellen, can I write, too?
Ellen:  After I am finished. (Taralyn and Jasmine begin giving Ellen weather words to write.)
Taralyn:  Read the calendar sentence. Hey, you forgot the 7.
Ellen:  Yeah. (She goes back and inserts the number 7. Then she writes Tody and wet.)
Taralyn:  What is the weather? It’s my turn.
Ellen: Raise your hand for the weather.
Taralyn: Today the weather is sunny.
Ellen: (Writing on the board, she asks Taralyn for help.) What comes after s-u-n?
Taralyn: n-y.

These first graders are using play as a tool for cognitive development, how children make sense of their world. They do this by building on what they already know to interpret new experiences. In their play, Ellen, Taralyn, and Jasmine demonstrate the following four essential elements of cognitive development (Perkins, 1984):

1. **Problem solving.** When Jasmine uses the yardstick to measure herself sitting down and standing up, she figures out the concept of size.
2. **Mental planning.** As Ellen comes to the board area, tells Taralyn and Jasmine to get two chairs, sits down in front, and stands at the board to write, she clearly plans to play school. Mental planning also occurs when Ellen states she will be the teacher first.
3. **Self-monitoring.** We see Ellen checking her own spelling skills when she asks Taralyn for help spelling the rest of the word sunny.
4. **Evaluation.** When Taralyn is reading the calendar sentence and notices that Ellen forgot the 7, she demonstrates her understanding of writing the date.

Much of the research on play shows its relationship to the development of children’s thinking and more sophisticated classification skills (Frost et al., 2012; Perkins, 1984; Piaget, 1952) and the ability to use what they already know to construct new knowledge. In this case, these first graders are building on what they already know (the routines of school, specific teacher behaviors, and basic literacy concepts and skills) and extending it through playful interactions. Their play with words and letters tests the spelling of weather words and the way to record the day and date.

The cognitive skills children use in pretend play are essential for school success (Saracho, 2012b; Smilansky & Shefatya, 1990). All subjects and problems include cognitive skills children use to pretend, yet many subjects, such as social studies, are those with which children have limited experience. To illustrate, after a teacher shares books about the Chinese New Year, such as *A New Year’s Reunion* (Yu, 2011) or *Lion Dancer* (Waters & Slovenz-Low, 1990), children’s imaginations are stimulated. During play you might notice the children imagining a Chinese New Year celebration with its special dances to ward off evil spirits, colorful dragons and decorations, and special Chinese festival foods because they are using their make-believe ability to play. In this way, real and pretend become complementary as children use make-believe to enhance their cognitive understanding (J. Johnson et al., 2005; Paley, 2004; Smilansky & Shefatya, 1990).

**Play and Language Development**

Rosa, Jack, and Anna are preparing a birthday celebration for their aunt in the housekeeping area of their Head Start classroom. When they realize they need
a present, Anna says, “We can make a birthday basket.” This is a reference to the book *A Birthday Basket for Tia* by Pat Mora (1992), in which Little Cecelia and her cat, Chica, plan a surprise birthday party for her “Tia’s” 90th birthday. In the story, Cecelia and Chica make a birthday basket that contains a favorite book, a mixing bowl, a flowerpot, and other items that Cecelia and her “Tia” like to share. Then, Cecelia surprises her “Tia” with a birthday basket full of special objects. After locating the book in the library area, Rosa, Jack, and Anna take on roles of Cecelia and her cat as they search for the perfect objects for the birthday basket and plan a party. When they finish the celebration for Cecelia’s “Tia,” they plan another celebration for their pretend Mama. The book has become the content for role-playing, trying out different intonations that might sound like Cecelia, her cat, “Tia,” and Mama, and deciding how to enact their pretend birthday celebration. This particular scenario illustrates how these children use language to guide their own play and that of others, which contributes to their language growth and vice versa.

Proficiency in oral language is essential for all children’s success in school (M. Han, Benavides, & Christie, 2001; Morrow, 2009). In the previous scenario, we see at least four ways that Rosa, Jack, and Anna’s play of a birthday celebration helps them practice the following three important language skills:

1. **Communication.** In pretend play, children use role-appropriate statements and metacommunication, language used to maintain the play episode; plan a story line; and assign roles. Pretending to be someone else allows children to use voice inflections and language in both new and familiar situations. Talking in play settings provides opportunities for children to use language for different purposes in different settings and with different people. Play also helps children internalize the many rule systems associated with the language they are speaking and enables them to express their thinking in different ways (Halliday, 1975; Santrock, 2011). Moreover, for English language learners (ELLs), play offers opportunities to talk in safe, social settings in school (Collins & Griess, 2011; Morrow, 2009; Pinnell & Jaggar, 2003).

2. **Purposeful conversation.** In play with others, children often use language to ask for materials, ask a question, seek out information and provide information to others, express ideas, and establish and maintain the play. For preschool and kindergarten children, verbal give-and-take during dramatic play helps children plan, manage, problem solve, and maintain the play through explanations, discussions, or commands (Smilansky & Shefatya, 1990). For elementary children, using reflective and analytical language is related to their level of linguistic awareness and achievements, which are essential to all forms of play.

3. **Play with language.** Children of all ages enjoy playing with language because, in doing so, they feel in control of it. Play is their arena for experimenting with and coming to understand words, syllables, sounds, and grammatical structure. Language play for elementary school children manifests itself in the jokes, riddles, jump rope rhymes, and games they use. Elementary school children are intrigued by the sound and meaning ambiguity of “knock-knock” jokes as well as by the humor of enacting scripts that include dialogue with multiple meanings.
and rhymes. These forms of language play require the transformational ability to explore the phonological, syntactic, and semantic rules of language (Davidson, 2006; Fromberg & Bergen, 2006; Isenberg & Quisenberry, 2002).

**Play and Literacy Development**

A growing body of evidence shows how children’s play contributes to their literacy development—the ability to read and write. By the time children come to school, they already possess a well-developed spoken language in their native language (Christie, Enz, & Vukelich, 2011). We know, too, that children learn to read and write in meaningful social settings that involve both social and cognitive abilities (Morrow, 2009). Elementary children become proficient readers if reading is an enjoyable way of learning and an important means of communication to them. Proficient readers demonstrate some of the same characteristics of good players; they are strategic, engaged, fluent, and independent.

Children at play can reveal the following literacy understandings:

1. **Knowledge of story elements and story comprehension.** Rosa, Jack, and Anna displayed knowledge of story elements (character, plot, setting, goal, and conflict) and exhibited story comprehension in their pretend dramatization of preparing for a birthday based on the story, *A Birthday Basket for Tia*. Children’s first attempts at reading and writing often occur during dramatic play as they read environmental print, make shopping lists, or play school. Most beginning readers rely on their oral language to gain meaning from books as they internalize the structure and meaning of language. More proficient readers have a more complex and developed concept of the interrelatedness of story elements. Dramatic play develops improved story comprehension and an increased understanding of story elements (Christie et al., 2011).

2. **Understanding of fantasy in books.** In dramatic play, children enter the play world “as if” they were another character or thing. The ability to transform oneself in play enables children to enter the world often created in books featuring talking animals (such as *Aesop’s Fables* or *Charlotte’s Web* [White, 1952]) or to write stories in which they create hypothetical characters. Elementary children’s ability to play with reality is necessary to understand science fiction as well as other types of fantasy books (Christie et al., 2011; Fields, Groth, & Spangler, 2008).

3. **Use of symbols to represent their world.** As children invent their own versions of stories, they make their world their own by representing their understandings symbolically. This symbolic behavior is the basis of the abstract thinking children need to become literate. You can see evidence of *younger children’s* use of symbols to represent what they know in their language, role enactment, or use of props (Fields et al., 2008; Owocki, 1999). Similarly, you can see evidence of *older children’s* abstract understanding in literacy through their story retellings, writing, wordplay, and the Internet to represent the literacy behaviors they know. Classroom teachers need to understand the many ways children’s play, games, and inventions contribute to their language and literacy development.
Play and Social and Emotional Development

During play, children also increase their social competence, relationship building with both peers and adults, as well as their emotional maturity and self-control. These life skills greatly influence children’s school success, and later on, workplace success (D. G. Singer & Singer, 2006; Saracho, 2012b; Vygotsky, 1967, 1978). Play supports children’s social development through:

- Practicing both verbal and nonverbal communication skills as they negotiate roles and responsibilities, try to gain access to ongoing play, and appreciate the feelings of others
- Responding to their peers’ feelings while waiting for their turn and sharing materials
- Experimenting with roles of the people in their home, school, and community as they come into contact with the needs and wishes of others through cooperative learning and play
- Experiencing others’ points of view by working through conflicts about space, materials, rules, or responsibilities positively

Play supports children’s emotional development by providing a way for them to express and manage both positive and negative feelings. Play helps children express feelings by:

- Simplifying events by creating an imaginary character, plot, or setting to match their feelings. A child afraid of the dark, for example, might eliminate night from the play episode.
- Compensating for situations by adding forbidden acts to pretend play. A child may, for example, eat cookies and ice cream for breakfast in play, whereas in reality this would not be permitted.
- Controlling emotions by repeatedly reenacting unpleasant or frightening experiences. Children who have experienced trauma from a natural disaster, such as a hurricane or shooting may “play out” those experiences through games, invented stories, jokes, or pretend play (Piaget, 1962).
In addition to expressing feelings, play helps children learn to manage their feelings as they act out being angry, sad, or worried in a situation they control (Erikson, 1963; Landreth, Homeyer, & Morrison, 2006; D. G. Singer & Singer, 2006). To illustrate, Alexander is a 4-year-old whose dog was recently hit by a car. In his dramatic play in the pet hospital, his teacher heard him say to another child, “I’m sad because the car hurt my dog.” Play enabled Alexander to express his feelings so that he could cope with his worry and fear about his dog. Through games and inventions, elementary children learn valuable emotional skills such as increasingly realistic self-perceptions, the ability to manage their emotions, and self-control that improves over time. As elementary children engage in spontaneous and structured play activities, they come to see themselves as good in some areas and less good in others. These opportunities to monitor feelings and emotions contribute to children’s beliefs about their own capacity and are foundational to children’s ability to meet the academic and social requirements in school.

**Play and Physical Development**

Play contributes to children’s fine and gross motor development and body awareness as they actively use their bodies. An example of fine motor development through play is learning to use a writing tool, such as a marker. Playing with writing tools helps children’s fine motor skills as they move developmentally from scribbles to shapes and forms to representational pictures. Gross motor development,
such as hopping and skipping, develops in a similar way. When children first learn to hop, they practice hopping on different feet or just for the pure joy of hopping. As elementary children, they integrate their hopping skill into such games as hopscotch and jump rope. Using their bodies during play, sometimes called motor play, uses physical activity that contributes to children’s health, well-being, and school success (Frost et al., 2012; Isenberg & Quisenberry, 2002).

**Play as Physical Activity**

Physical activity refers to body movement such as walking, bending, or stretching that uses more energy than when you are not moving, and enhances your health and well-being (U.S. Department of Health and Human Services, 2008). According to the National Association for Sport and Physical Education (NASPE; 2011), children require at least 60 minutes throughout the day of regular, age-appropriate physical activity including outside play when possible. Yet, children today are experiencing less time for play and recess while at the same time there is an epidemic of childhood obesity associated with less physical activity and play.

**Benefits of Physical Activity**

Physical activity not only contributes to children’s health and well-being but also stimulates brain activity that contributes to children’s learning and readiness to learn. Providing children with multiple opportunities for physical activity throughout the day has the following benefits. Children show better

- Behavior and ability to learn in class (Sattelmair & Ratey, 2009)
- Physical fitness and improved cognitive performance (Chomitz et al., 2008)
- Developed fundamental movement abilities (Haga, 2008)
- Academic performance (Mahar et al., 2006; Sattelmair & Ratey, 2009)

Physical activity also supports children’s self-concept, self-discipline, psychological well-being, and problem-solving skills (Trost, Fees, & Dzewaltowski, 2008), increases the possibility of children’s future physical activity participation as they grow up (Haga, 2008), and helps with the problem of obesity, which has become a health-promotion priority of many nations (Centers for Disease Control and Prevention [CDC], 2009).

**Integrating Physical Activity in Your Classroom**

With the increased focus on testing and academic skills and decreased use of play and physical activity in the schools, how can you best provide at least 60 minutes of physical activity for children throughout the day? Because movement and physical activity are major ways that children communicate, express themselves, and learn, they need many opportunities to be physically active and learn through movement. Here are some ways to make physical activity central to children’s daily routine:

- Capitalize on musical play, gaining mastery with understanding musical components such as voice and instruments. Use musical games, action songs, sound-making activities, and playful responses to music and dance (Saracho, 2012b).
• Add movement education to preschool curriculum—60 minutes per day of structured movement activities and another 60 minutes per day of unstructured play—is the recommendation of NASPE (2011).
• Change and rearrange the school environment to promote activity and new physical challenges for children. This may include portable (rather than fixed) playground equipment, larger play areas, outdoor obstacle courses, and frequent in-classroom physical activity breaks that incorporate physical activities (NASPE, 2011).
• Educate families about the value of physical activity, particularly fundamental movement skills in the early years.
• Include a variety of active games that build strong bones and muscles such as hopscotch, jump rope, and running, chasing, and tag games (Haga, 2008).
• Provide a variety of materials and equipment that children can choose whenever possible to use and explore.

Play and Creative Development

Nearly 50 years ago, Sigmund Freud (1958) suggested that every child at play “behaves like a creative writer, in that he creates a world of his own, or, rather, rearranges the things of his world in a new way which pleases him. . . . The creative writer does the same as the child at play. He creates a world of phantasy which he takes very seriously—that is, which he invests with large amounts of emotion” (pp. 143–144).

Play is an ideal context for supporting children’s creative development because it offers a risk-free environment. Research shows that play and creative thought are related behaviors as they both rely on children’s ability to use symbols (J. Johnson et al., 2005; D. G. Singer, Golinkoff, & Hirsh-Pasek, 2006; D. G. Singer & Singer, 2006; Saracho, 2012a). The ability to make-believe, invent activities and materials, and play games is evidence of children’s developing ability to imagine, be curious, and experiment with alternative responses to different situations. This capacity, practiced in various types of play, enhances children’s ability to be successful in new situations.

Creative thought can also be viewed as an aspect of problem finding, problem solving, and finding and expressing ideas, which have their roots in play. When children use their imaginations in play, they are more creative, perform better at school tasks, and develop a problem-solving approach to learning (Dansky, 1980; Dansky & Silverman, 1973; Fromberg & Bergen, 2006; Frost et al., 2012; Pepler & Ross, 1981; Saracho, 2012a).

One of the ways in which children learn about play is through activities with high-quality picture books. The boxed feature identifies recently published, award-winning children’s literature for children at various listening or reading levels and suggests learning experiences related to each title.

The recommended grade levels are included:

*Toddler (T), Preschool/Kindergarten (P/K), Primary (1st/2nd), Intermediate (3rd/4th)*
Current Children’s Books about Play, Games, and Inventions

Sociodramatic play leads to all kinds of adventures for the main character, a young bear who decides to rescue people and animals from danger. Encourages imaginative play. (P/K, 3rd/4th)

Rough and tumble play with dads is the focus of this book; see also Pete’s a Pizza (Steig, 1998) and Bailey Goes Camping (Henkes, 1985) to invite discussions of play at home with families. (T, P/K)

This lively book invites children to dramatize some of the actions of the characters—basking in the sun, skiing down a slide, and shaking with fear on the swimming pool’s high dive. For additional titles that introduce mimicking animal actions, see From Head to Toe (Carle, 1999). (P/K)

In this fanciful book, a personified glop of mud crowns an ordinary girl queen so that they can play together. Another great tie-in with play involving mud, sand, and water is I’ll Play with You (Siddals, 2000) to encourage outdoor play. (P/K, 1st/2nd)

Short biographies of creative geniuses show how the line between play and work was blurred for them, as well as their lasting impact on society. (3rd/4th)

In this pop-up book about the artist Jackson Pollock, playing around with mistakes—such as spills, torn paper, or a glop of paint—become opportunities for creative expression. Pair with Beautiful Oops! (Saltzberg, 2010) to spark discussion about the influence of serendipity and playfulness in the lives of creative individuals. (3rd/4th)

Three toys—a rubber ball, a plush buffalo, and a ball—are best friends in these six imaginative stories. Ask children which of their toys are friends and have them dictate stories about what adventures they might have together. See also the other two books in the toys trilogy, Toys Come Home and Toys Go Out. (1st/2nd, 3rd/4th)

In this nearly wordless book, a child experiments with household items and shadows to produce inventive images. Relate this book to Can You See What I See? Dream Machine (Wick, 2003). Read about shadow puppets and follow up with a flashlight and a piece of paper stretched across a cardboard box so that children can play with light and shadow. (P/K, 3rd/4th)

In both of these simple books, a small rabbit character demonstrates how to transform ordinary objects into exciting play materials through the imagination. To further promote outside-the-box thinking, consider pairing them with What Can You Do with a Paper Bag? (Cressy, Quiroga, Butler, & Heins, 2001) or My Book Box (Hillenbrand, 2006). Children can produce original books about an item of their choice to demonstrate fluency and flexibility in thinking. (P/K, 1st/2nd)

Older students will enjoy the “fractured fairy-tale” versions of the childhood classics Goodnight Moon and Curious George. Connect with Jon Scieszka’s books to inspire older students to reimagine traditional tales. (P/K, 1st/2nd, 3rd/4th)

Toddlers in brightly colored costumes sing and dance and play across the pages of this book about Hispanic celebrations. (T, P/K)
The importance of play for children’s learning is well documented. As children grow and change, each type of play develops in a predictable sequence and requires different skills and abilities.

**DEVELOPMENTAL SEQUENCE FOR DIFFERENT TYPES OF PLAY**

Meet Jessie, a fourth grader. If you could go back in time and catch glimpses of her play behavior, this is what you would see:

As a 10-month-old, Jessie plays pat-a-cake with Grandma Marji. At age 2, Jessie pours sand back and forth into different-sized plastic containers. When Jessie is 4, she pretends to make pizzas and take delivery orders over the telephone with her friends, Lara and Michelle. At age 6, Jessie and two friends pretend to eat space food in a spaceship they have constructed. At age 8, Jessie plays a card game, I Doubt It, and is becoming quite adept at rummy. And now, at age 10, Jessie invents a memory game that matches 10 inventors’ names with their inventions.

As Jessie’s experiences illustrate, play matures over time, becomes more complex, and parallels and strengthens children’s development (F. P. Hughes, 2010; Piaget, 1962; Vygotsky, 1978). Play at all ages has been studied from both children’s cognitive and social development. We discuss each type of play next.

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**Development of Cognitive Play**

Cognitive play reflects children’s age, conceptual understandings, and experiential background. The ideas of Piaget (1962), Smilansky (1968), and Smilansky and Shefatya (1990) describe the following four types of cognitive play: functional play, symbolic play, constructive play, and games with rules. While each type of play peaks at a particular age, they all continue in some form throughout life, have unique characteristics, and contribute to children’s understanding of themselves, others, and their world.

Table 2.3 lists the four types of cognitive play, their characteristics, and provides age-appropriate examples.

**Functional Play**

Functional play (birth to age 2) is characterized by simple, pleasurable, repeated movements with objects, people, and language to learn new skills or to gain mastery of a physical or mental skill. Also referred to as sensorimotor, practice, or exercise play (Piaget, 1962; Smilansky & Shefatya, 1990). Functional play helps children learn new skills or gain mastery of a physical or mental skill. It dominates the first 2 years of development, about one-third of the play of preschoolers, and less than one-sixth of the play of elementary school children (Rubin, Fein, & Vandenberg, 1983), and continues in some form through adulthood.
## Chapter 2  Supporting Children’s Play, Games, and Inventions

### Table 2.3 Types, Characteristics, and Examples of Cognitive Play

<table>
<thead>
<tr>
<th>Type</th>
<th>Characteristics</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional play</td>
<td>Repeats movements when new skills are being learned, with or without objects.</td>
<td><em>Infants and toddlers</em>: grasping and pulling a mobile</td>
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<tr>
<td></td>
<td></td>
<td><em>Preschoolers and kindergartners</em>: repeating a pattern on a pegboard</td>
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<tr>
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<td></td>
<td><em>School-age children</em>: practicing throwing, catching, or doing acrobatics</td>
</tr>
<tr>
<td>Symbolic play</td>
<td>Uses imagination and role-play to transform the self and objects and to satisfy needs.</td>
<td><em>Infants and toddlers</em>: pretending to drink from a baby bottle</td>
</tr>
<tr>
<td></td>
<td>Early symbolic play: mentally transforms one object for another.</td>
<td><em>Preschoolers and kindergartners</em>: transforming a block into a broken car and pretending to fix it</td>
</tr>
<tr>
<td></td>
<td>Later symbolic play: mentally transforms self and objects.</td>
<td><em>School-age children</em>: using secret codes or made-up languages to communicate</td>
</tr>
<tr>
<td>Constructive play</td>
<td>Manipulates objects or materials to make something. Combines functional play repetitive activity with symbolic representation of ideas.</td>
<td><em>Preschoolers and kindergartners</em>: constructing a hospital room for a sick animal</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>School-age children</em>: creating an exhibit for a project or designing virtual games and figures with electronic icons</td>
</tr>
<tr>
<td>Games with rules</td>
<td>Goal-oriented activities with predetermined rules that are often competitive with one or more individual.</td>
<td><em>Infants and toddlers</em>: playing pat-a-cake with an adult</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Preschoolers and kindergartners</em>: playing simple singing and circle games</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>School-age children</em>: playing tag, marbles, hopscotch, or relay races</td>
</tr>
</tbody>
</table>

Sources: Data from Piaget (1962); Smilansky & Shefatya (1990).

Through functional or practice play, children develop coordinated motor skills and begin to feel empowered with their bodies, as in the following examples:

- The 1-year-old who stacks and unstacks rings on a pole
- The 4-year-old who incessantly repeats “I’m the king of the castle”
- The 5-year-old who intentionally places pegs in a pattern on a pegboard
- The 7-year-old who practices bicycling skills on a two-wheeler at every available minute
- The 9-year-old who does variations on jump rope movements
symbolic play
The child’s use of props, plot, and roles to symbolize real or imaginary experiences. Also referred to as pretend, dramatic or sociodramatic, fantasy, or make-believe play. Symbolic play is typical of 2- to 7-year-olds.

sociodramatic play
Symbolic play that involves two or more children who communicate verbally about the play episode and enact social roles.

**Symbolic Play**
*Symbolic play* (ages 2 to 7), also called pretend, dramatic, sociodramatic, or make-believe play, emerges in the second year and continues in different forms throughout adulthood. It arises when children can transform their world into symbols and usually contains three elements: props, plot, and roles. In symbolic play, children plan actions, assume roles, and transform objects or actions to express their feelings and ideas (Smilansky & Shefatya, 1990; Van Hoorn, Monighan-Nourot, Scales, & Alward, 2011). Symbolic play reflects children’s growing mental ability to make objects, actions, gestures, or words stand for something or someone else (Piaget, 1962). It focuses on social roles and interactions and shows children’s ability to play with ideas or symbols. Symbolic play can be either dramatic or sociodramatic.

*Dramatic play* occurs when children use an object to stand for something else, such as a block representing a telephone, and imitate an adult role or behavior to test out ideas and learn to manage their world. Dramatic play may or may not involve others.

*Sociodramatic play* involves two or more children who communicate verbally about the play episode. Because sociodramatic play is person-oriented rather than object-oriented, it is considered a higher level of symbolic play. Here children exchange information and ideas during a jointly elaborated play sequence or theme; they can also simultaneously be actors, interactors, and observers (Smilansky & Shefatya, 1990). Repeated opportunities to engage in sociodramatic play offer children a rich arena for refining concepts, solving problems, feeling in control by making things happen, enhancing peer relationships, and learning self-regulation (Berk, Mann, & Ogan, 2006; Elias & Berk, 2002). Sociodramatic play correlates highly with children’s intellectual and social abilities (Smilansky & Shefatya, 1990). Table 2.4 describes Smilansky’s...
### TABLE 2.4  Smilansky’s Characteristics of Dramatic and Sociodramatic Play

<table>
<thead>
<tr>
<th>Play Behavior</th>
<th>Characteristics</th>
<th>Examples</th>
<th>Levels</th>
</tr>
</thead>
</table>
| Imitative role-play               | Child assumes a make-believe role of a person or object and expresses it in imitation and/or verbalization. | “Let's pretend that I am the baby.”                                      | *Beginning*: Role relates to the familiar world (e.g., mommy, daddy, baby)  
*Advanced*: Role relates to world outside the family (e.g., doctor, teacher, police) |
| Make-believe with regard to objects | Child uses movements, verbal statements, or materials or toys that are not replicas of the object itself or real objects. | Uses Lincoln Logs to make a house for the baby and uses chimneys from Lincoln Logs to make beds for the dogs. | *Beginning*: Real objects or replicas used (e.g., real toy car)  
*Advanced*: Uses prop as part of play scenario (e.g., stirs soup with a block) |
| Verbal make-believe with regard to actions and situations | Child substitutes verbal descriptions or declarations for actions and situations. | Uses Lincoln Logs to outline a square for the house and says “This is a house for the baby.” | *Beginning*: Imitates simple actions of adult (e.g., holds vacuum and moves back and forth)  
*Advanced*: Child’s actions are integral to the play episode (e.g., “I’m vacuuming this floor so the baby can crawl around and not hurt herself”) |
| Persistence in role-play          | Child stays within a role or play theme for at least 10 minutes.                  | Plays role of baby, mother, and daughter within a family play theme for 10 minutes. | *Beginning*: Short, sporadic involvement (e.g., child enters area, picks up the baby, and leaves)  
*Advanced*: Child stays involved in area and the theme for more than 10 minutes |
| Interaction                        | At least two children interact within the context of a play episode.              |                                                                           | *Beginning*: Plays alone with no obvious awareness of others nearby  
*Advanced*: Cooperative effort to work together around a common theme |
| Verbal communication              | There is some verbal interaction related to the play episode.                    |                                                                           | *Beginning*: Simple dialogue around the use of toys (e.g., “Give me the bottle”)  
*Advanced*: Dialogue about the roles, props, plot of the play scenario |

Sources: Data from Smilansky (1968); Dodge et al. (2009).
In sociodramatic play, children exchange information and ideas during a jointly elaborated play sequence; they can also simultaneously be actors, interactors, and observers.

six characteristics of dramatic and sociodramatic play. Note that the last two characteristics (interaction and verbal communication) define symbolic play as sociodramatic.

**Symbolic Play Across Ages**

Children at different ages engage in symbolic play. Following is a description of what children’s symbolic play looks like at different ages.

*Infants and toddlers* imitate actions associated with a particular prop in symbolic play, learn to substitute one thing for another, and act as if they were someone else who is familiar to them. For example, as a young toddler, Samantha picks up her toy cup and pretends to drink from it. As an older toddler, she
may offer her doll a drink from the cup. Her symbolic play shifts from pretense about herself to pretense about others.

*Preschool and kindergarten* children’s *symbolic play* is more complex. They pretend alone or with others, use nonrealistic objects, assume roles, and use objects as symbols in addition to what they stand for (Van Hoorn et al., 2011). Three-year-old Miriam uses her hand as a pretend hairbrush for the baby’s hair. Five-year-olds Jimbo and Celeste become firefighters as they rescue people from a burning building. These transformations are essential for symbolic play, which peaks during the preschool years, the golden age of make-believe, but re-appears later as daydreaming or hypothetical thinking from the middle grades through adulthood.

*School-age* children’s *symbolic play* differs from the play of children at other ages because now their thinking is less public. They can integrate their symbols into age-appropriate, socially acceptable mental games and language play such as riddles, number games, secret codes, and daydreaming (J. Johnson et al., 2005). It is not uncommon to find 7-year-olds enjoying the use of secret codes, a form of symbolic and language play, or to find 9-year-olds daydreaming. For school-age children, simulations and games provide an opportunity to participate in situations that they cannot actually experience, thus increasing their interest and intrinsic motivation. The elements of fantasy and pretense make what otherwise would be a boring activity more meaningful. Research shows that symbolic play increases children’s memory (J. Newman, 1990), expands language and vocabulary (Christie et al., 2011), enhances children’s reasoning ability with contradictory facts (Fromberg & Bergen, 2006), and fosters flexible and inventive thinking (Pepler & Ross, 1981).

**Constructive Play**

In *constructive play*, children create something or engage in problem-solving behavior according to their own preconceived plan. Constructive play often combines functional and symbolic play and predominates during the preschool years (Forman, 2006). The following is an example of constructive play from a kindergarten and first-grade classroom.

After visiting the Washington, DC, memorials, Emily, Porsche, and Elizabeth chose to build the Jefferson Memorial in the block area. To do this, they decided which blocks would be appropriate for the entrances, where to place them, how to make the river, and who would be the statue. After building their structure, which resembled the real Jefferson Memorial, they engaged in symbolic play. In this play episode, the girls combined constructive play (building a memorial) with symbolic play (visiting the memorial) by representing their ideas with the materials (blocks) and elaborating on them in symbolic play (playing house inside the memorial). In constructive play, the child focuses on a lasting end product (Forman, 2006).

School-age children often engage in constructive play in the classroom because it is easily accommodated in work-oriented settings (Christie, 2001; Forman, 2006). Typical constructive play might include creating a play around a social studies topic such as occupations, writing a story, creating an interactive exhibit, using invented spelling, building virtual systems on a computer.
In constructive play, children become absorbed in the process of creating an everlasting end product.

screen, or making a mobile out of recycled materials. In order for the play to be constructive, however, children must maintain a playful attitude by keeping the focus on “What if I do this?” rather than “Why won’t it do that?”, must be absorbed in the process, and must find it pleasurable. In that way, the child keeps the goal in mind, but it does not dominate the play.

Games with Rules
Games with rules rely on prearranged rules that guide acceptable play behavior of reciprocity and turn-taking. Board games (such as Clue), card games (such as rummy), outdoor games (such as kickball), and computer games (such as Sim City) are the most common games with rules for elementary school children. Their more logical ways of thinking and advanced social skills make it possible for older elementary school children to follow a set of rules and negotiate with peers. Games with rules enhance children’s physical coordination, refine their social and language skills, build conceptual understandings, and increase understanding of cooperation and competition (DeVries, 2006; J. Johnson et al., 2005; Torbert, 2005).

In the following example of the card game Addition War, notice how fourth-graders Tom and Chang use rules and how they reason their way...
through problems. The boys sit side by side so they can see each other’s addition facts and lay their cards down like a vertical math problem.

Tom: I have 18. How many do you have?
Chang: I have 17.

(Tom picks up all four cards and places them face down at the bottom of his stack. They each put down two more cards.)

Tom: I win.
Chang: I have 9 and 8. You know what that is? That equals 17 so I win this time.
Tom: We haven’t had a war yet.
Chang: I have 18; what do you have?
Tom: I have 11 and 8.
Chang: 11 and 8 is 19.
Tom: How much is an ace worth?
Chang: 11. Oooh, you win! (They lay down more cards.) A jack and king equal 20. I have 20. Let me see. You have 16 and I have 20. I win. (When the game ends, Chang quickly counts his cards.) I have 39 cards and that means I win because it’s more than half the deck.

In this card game, Tom and Chang use addition facts to play a rule-based game. They show understanding of prearranged rules (acknowledging the winner of each round and assigning a numerical value to the ace), conceptual understanding (the winner holding 39 cards has more than half the deck), and turn-taking (knowing who goes next after each pair goes on the table).

In sum, children use all types of cognitive play at different ages and for a variety of purposes. The uniqueness of each type of cognitive play reflects what children know and are able to do. Because much of children’s play occurs with or around others, the next section describes how social play contributes to children’s social competence.

**Development of Social Play**

Social play, the ability of children to get along with their peers, matures over time in a similar way as cognitive play. This kind of play often develops rapidly during the preschool years and continues to be refined over the years. The play context enables young children to acquire and use social skills as they interact with their peers. The now-classic ideas of Mildred Parten (1932) have focused attention on the social aspects of play during early childhood. Parten identified six types of social play, beginning with the least socially mature (solitary play) and moving toward the most socially mature (cooperative play). Today, most researchers consider Parten’s “levels” as descriptive of styles of play rather than social maturity because as children grow older, they cycle back and forth between the types of social play (Van Hoorn et al., 2011). Table 2.5 describes the characteristics of Parten’s levels of social play.

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**social play**
The ability of children to get along with their peers; matures over time in a similar way as cognitive play.

---

**Parallel play is an important step for young children as they become increasingly social. As you watch this video, notice the social skills demonstrated by children across parallel play scenarios.**
### TABLE 2.5  Levels of Social Play

<table>
<thead>
<tr>
<th>Type of Play</th>
<th>Characteristics of the Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unoccupied behavior</td>
<td>Is not engaged in play and does not seem to have a goal. Plays with body, gets on and off chairs, walks about aimlessly.</td>
</tr>
<tr>
<td>Onlooker behavior</td>
<td>Observes, asks questions, and talks to other children but does not enter play itself. Stands within speaking distance to see and hear. More active interest and involvement than unoccupied behavior.</td>
</tr>
<tr>
<td>Solitary play</td>
<td>Plays independently and is not involved with other children. Playing with own toys is the primary goal. Most typical of 2- and 3-year-old children. Older children use solitary play for needed privacy and for elaborate individual dramatic play.</td>
</tr>
<tr>
<td>Parallel play</td>
<td>Plays alongside or nearby, but not with, others. Uses shared toys but plays independently. Does not share toys. Typical of young preschool children. Often considered the beginnings of group play.</td>
</tr>
<tr>
<td>Associative play</td>
<td>Plays with others in a similar, loosely organized activity. Conversation involves asking questions, using one another’s toys. Some attempts made to control who may join the group. Is often the transition from parallel to cooperative play.</td>
</tr>
<tr>
<td>Cooperative play</td>
<td>Uses common goals involving negotiation, division of labor, and differential role taking, such as taking turns and organization of play themes. Organizes group for the purpose of making a product, dramatizing a situation, or playing a game with a strong sense of belonging to the group.</td>
</tr>
</tbody>
</table>

*Source: Data from Parten (1932).*

*Play is children’s natural resource for developing social and cognitive skills.*
Knowing how each type of play develops will help you provide appropriate learning experiences for children. It also offers a way for you to enjoy and encourage age-appropriate play. To appreciate the essential role of play in children’s lives, you need to understand how play and games are important tools for differentiating instruction and integrating the curriculum.

**INTEGRATING THE CURRICULUM: USING GAMES**

**What Is a Game?**

A *game* is a form of play in which children follow an agreed-upon set of rules, predetermine an outcome, assign players specific roles, and assign sanctions for violations (DeVries, 2006; F. P. Hughes, 2010). While very young children often change rules during a game, rules do exist. Most children’s games involve physical skill, chance, strategy, or some combination of these elements to determine the outcome. Games of strategy, such as checkers or Boggle, require players to take turns, follow complex directions, and use complicated strategies.

**Why Use Games?**

Games provide children with opportunities to learn and practice many skills across different learning domains. They support children’s cognitive skills such as decision-making and problem-solving abilities; language skills such as speaking and listening; social skills such as turn-taking and cooperating; self-regulation skills such as exercising control over their emotions, thinking, and actions; and physical skills such as writing and drawing (Click & Parker, 2009; DeVries, 2006; Hirsh-Pasek & Golinkoff, 2003; Rule, 2007).

Games suitable for *preschool and kindergarten children* have one or two simple rules, include all children who want to participate, encourage children to figure things out for themselves, and do not stress being first, winning, or losing. Young children like noncompetitive guessing games such as “I’m thinking of something that is . . .,” simple sorting and matching games, simple board games (if they can change the rules), and basic running and chasing games.

Children in *first through fourth grades* enjoy strategy games that develop problem-solving and decision-making abilities. Board games and active outdoor group games are typical of this age for both boys and girls. With an emphasis on involvement, mutual enjoyment, and respect, group games can promote basic intellectual and social skills in children through fourth grade (DeVries 2006). Children need many opportunities to practice *self-regulation* (Bodrova & Leong, 2007; A. Diamond, Barnett, Thomas, & Munro, 2007) and practice and refine critical cognitive and life skills (Frost et al., 2012; Isenberg & Quisenberry, 2002; Rule, 2007).
Why Are Games Suitable for Children with Special Needs?

Games have potential benefits for children with special needs. They help them practice self-regulation—the ability to control emotions and behavior and practice self-discipline. Children with reduced self-regulation skills may be showing up in the increased numbers of children diagnosed with ADHD. Children with special needs can be encouraged to engage in all kinds of appropriate games in the classroom.

Figure 2.1 provides a variety of ways to use games to integrate the curriculum.

---

**WHAT IS A GAME?**

A game is a form of play in which children follow an agreed-upon set of rules, predetermine an outcome, assign players specific roles, and assign sanctions for violations (DeVries, 2006; Hughes, 2010). While very young children often change rules in the middle of a game, rules do exist. Most children’s games involve physical skill, chance, strategy, or some combination of these elements to determine the outcome. Games of strategy, such as checkers or Boggle, require decision-making skills and compel players to take turns, follow complex directions, and employ complicated strategies.

**WHY USE GAMES?**

Games provide children with opportunities to learn and practice many skills across different learning domains. They support children’s cognitive skills, such as decision-making, turn-taking, and problem-solving abilities; language skills, social skills, and self-regulation skills, such as exercising control over their emotions, thinking, and actions and physical skills (Click & Parker, 2009; DeVries, 2006; Hirsh-Pasek & Golonkoff, 2003; Rule, 2007). Games suitable for preschool and kindergarten children have one or two simple rules, include all children who want to participate, encourage children to figure things out for themselves, and do not stress being first, winning, or losing. Young children like noncompetitive guessing games such as “I’m thinking of something in the room that is . . .,” simple sorting and matching games, simple board games (if they can change the rules), and basic running and chasing games.

Children in first through fourth grades enjoy strategy games that develop problem-solving and decision-making abilities. Board games and active outdoor group games are typical of this age for both boys and girls. With an emphasis on involvement, mutual enjoyment, and respect, group games can promote basic intellectual and social skills in children through fourth grade (DeVries, 2006; Jensen, 2000; Santrock, 2011). Children need many opportunities to practice regulating themselves (Bodrova & Leong, 2007; Diamond, Barnett, Thomas, & Munro, 2007) and practice and refine critical cognitive and life skills (Frost et al., 2012; Isenberg & Quisenberry, 2002; Rule, 2007; Torbert, 2005; Wassermann, 2000).

**WHY GAMES ARE SUITABLE FOR CHILDREN WITH SPECIAL NEEDS?**

Researchers (Bodrova & Leong, 2007 and Diamond et al., 2007) suggest that games have potential benefits for children with special needs. They argue that games help them practice self-regulation—the ability to control emotions and behavior and practice self-discipline. Children with reduced self-regulation skills may be showing up in the increased numbers of children diagnosed with ADHD. Children with special needs can be encouraged to engage in all kinds of appropriate games in the classroom. Many games simply require that adults determine what kinds of adaptations need to be made so individual children can participate (Frost et al., 2012).
Chapter 2  Supporting Children’s Play, Games, and Inventions

Figure 2.1  (Continued)

<table>
<thead>
<tr>
<th>Preschool/Kindergarten: Circle Time Games</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Communication:</strong> Literacy, Language Arts, and Technology</td>
</tr>
<tr>
<td>• “Nursery Rhyme Changes” Have children change words in familiar nursery rhymes and other chants that rhyme with the correct word, such as Jack and Jill went up the (child supplies rhyming word for “hill”).</td>
</tr>
<tr>
<td>• <strong>The Sciences:</strong> Mathematics/Science</td>
</tr>
<tr>
<td>• “I’m Thinking of ...” Have a child think of an object and give a clue to that object. Provide one clue at a time until someone guesses the object another was thinking of.</td>
</tr>
<tr>
<td>• <strong>Social Studies:</strong> Social Studies/Health and Safety</td>
</tr>
<tr>
<td>• “Cooperation Games” that have no winners or losers such as “Call Ball” during which a child in the center tosses a ball to a child and calls his or her name and the game continues or “Basket Ball” in which children stand before a plastic basket and toss the ball with a focus on hitting the basket and not keeping score.</td>
</tr>
</tbody>
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<tr>
<th>First/Second Grade: Guessing Games</th>
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<tbody>
<tr>
<td>• <strong>Communication:</strong> Literacy, Language Arts, and Technology</td>
</tr>
<tr>
<td>• “Character Riddles” Have individual or small groups of children write and share riddles of a book character using three clues.</td>
</tr>
<tr>
<td>• <strong>The Sciences:</strong> Mathematics/Science</td>
</tr>
<tr>
<td>• “Feely Bags or Closed Boxes” Fill bags or boxes with natural science or other objects, such as stones, sticks, bones, shells. Pass the box around for children to feel, shake, and listen to what is inside.</td>
</tr>
<tr>
<td>• <strong>Social Studies:</strong> Social Studies/Health and Safety</td>
</tr>
<tr>
<td>• Create “Word Searches” that contain different kinds of social studies vocabulary to test children’s creativity and knowledge.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third/Fourth Grade: Games with Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Communication:</strong> Literacy, Language Arts, and Technology</td>
</tr>
<tr>
<td>• “Playing with Words” Have children construct their own crossword puzzles for others to complete.</td>
</tr>
<tr>
<td>• <strong>The Sciences:</strong> Mathematics/Science</td>
</tr>
<tr>
<td>• “Invent a Board Game” that uses the content and concept of a current social studies unit, such as the environment, economics, or geography. Play the game with other small groups in the class.</td>
</tr>
<tr>
<td>• <strong>Social Studies:</strong> Social Studies/Health and Safety</td>
</tr>
<tr>
<td>• Adapt familiar games such as “Twenty Questions” or “Jeopardy” for social studies, famous people, places, and things.</td>
</tr>
<tr>
<td>• Goal for “Twenty Questions” is to guess the person, place, or thing in 20 or less questions; goal for “Jeopardy” is to ask the question to the answer that is given.</td>
</tr>
</tbody>
</table>

You can integrate the curriculum by assuming a variety of supportive roles. We discuss those in the next section.

**TEACHERS’ ROLES AND RESPONSIBILITIES IN SUPPORTING CHILDREN’S PLAY, GAMES, AND INVENTIONS**

As a teacher, one of your essential roles will be to support children’s play so that it becomes more elaborate and complex (Frost et al., 2012; J. L. Singer, 2006; Smilansky & Shefatya, 1990; Vygotsky, 1978). You will need a good blend of
strategies that facilitate, not control, the way children play and think about their play. Teachers often ask why, how, if, or when they should intervene in children’s play, which determines whether you use play to enrich or disrupt learning.

**Why Should Teachers Support Children’s Play?**

Answering this question comes naturally from the theory of Lev Vygotsky (1978), who suggested that play scaffolds or supports children’s advancement to higher ability levels in all domains. Scaffolding is particularly important as we examine the range of teachers’ roles in play settings. Often a child cannot accomplish a particular task independently but can accomplish the same task with the assistance of an adult or a more capable peer. This zone of proximal development, discussed in Chapter 1, is the optimum time for teachers to assist children in their learning.

**When Should Teachers Support Children’s Play?**

There will be times when you will want to scaffold children’s play. Yet under no conditions should you dominate the direction of children’s play, nor should you participate in play when children clearly do not want you there. Usually, teachers support play in the following situations:

1. When play is absent from children’s behavior, such as aimless wandering and inability to engage with another child, material, or activity.
2. When a child finds a task far too difficult, like being unable to make a bridge out of blocks or construct a math game.
3. When a child needs assistance to get something done, such as playing a board game or inventing something.
4. When a child knows very little about a role, object, or situation, like reenacting a scene from a literature selection.
5. When a child asks you to participate; for example, you may assume the role of ticket taker at an imaginary airport or ask questions (J. L. Singer, 2006).

As you read each of the different roles teachers assume to support children’s play, think about when and how to use each role.

**What Are Teachers’ Roles in Children’s Play?**

The following six roles describe the kinds of support teachers can provide.

**Teachers as Observers**

As an observer of play, you will need to determine whether children need help with a problem; whether toys or materials are adequately stimulating; and whether play is contributing to children’s development and skills. Skilled observers note which child plays what role, which child chooses particular themes, how children enter and exit a play setting, which children seem to “get stuck” in a play theme...
and can’t move forward with it, who needs one-to-one interaction, and which children are developing the ability to participate in group activity. Skilled observers also note when not to intervene, such as when children are already playing cooperatively or when they do not seem interested in adult participation. Careful observation and interpretation are the bedrock of all the other roles teachers assume in facilitating children’s play (E. Jones & Cooper, 2006; J. L. Singer, 2006).

**Teachers as Collaborators**

Sometimes children “get stuck” with a role, theme, or idea. Teachers can extend their play by adding a new toy or prop, by becoming a co-player with a child, or by asking a question that elaborates on but does not change the theme. One kindergarten teacher had a fast-food restaurant in her theme corner. After a week of play, she added a “Drive Thru” sign and a cardboard window that the children used to add a new dimension to their play. She also suggested adding the role of “cashier.” In doing so, she extended the children’s thinking and imagination and stayed with their original intentions (Fromberg & Bergen, 2006). A fourth-grade teacher provided opportunities for children to collaborate with others to compose stories out of a set of random words that had been a part of their social studies unit and then watch as other children in the class added to the story. Occasionally, children enacted the final story. This teacher knew the importance of her role as a collaborator in children’s play with words.

**Teachers as Planners**

Selma Wassermann (2000) describes a K–2 multiage classroom that shows a teacher’s careful attention to planning for play. She writes about breathing out, the first 45 minutes of the day when children transition from home to a school environment that absorbs their interest and prepares them for a day of learning. This environment includes plenty of space and materials for play in learning stations including construction materials, dramatic play, and art; investigative centers that operate later in the day where children explore explicit content; and a choosing board where children select how they will spend their time at centers. As children become absorbed in the play activities, the teacher then can work with individual or small groups of children on particular skills. Play requires considerable planning to ensure that the space and materials facilitate children’s thinking and learning and that they have enough background knowledge to engage in meaningful, educational play.

**Teachers as Responders**

When you describe children’s actions and words or ask questions about the role or theme, you provide feedback on what the children are doing and saying. For younger children, making statements such as “I see you have bought a large bag of groceries” or “I noticed the tower is as tall as you are” gives children an opportunity to elaborate on that behavior if they choose. Asking questions, making suggestions, and helping children connect with others are all ways that you can respond to children’s play to validate that playing is a valued activity.
Part 1  Foundations of Creative Thought
(E. Jones & Cooper, 2006; Smilansky & Shefatya, 1990). For elementary children, providing feedback to their playful learning requires that you know the major concepts and skills that children can demonstrate. Paraphrasing, questioning, or stating what you see prompts children’s ability to further explore an idea.

Teachers as Models
Sometimes teachers actively model a particular behavior or role relevant to the ongoing play theme. In this way, you teach individuals or groups of children a needed play skill or behavior. For example, in Ms. Blum’s preschool class, two 4-year-old girls are playing in the home living areas. Ms. Blum notices that one girl rocks with a doll while the other repeatedly opens and closes the oven door. She enters the play, sits at the table, and announces: “It is time for lunch.” She asks, “What smells so good in the oven?” and later asks, “Could I help set the table?” Ms. Blum’s modeling of family roles and behaviors encourages children to practice some of those skills, which children will then be able to transfer to other settings on their own.

Teachers as Mediators
As a mediator, you help children make meaning from play by serving as a bridge between children’s initial understanding of a concept or event and their deeper understanding as a result of experiencing that concept or event.

Playing with new technologies and interactive media provides children with opportunities to make decisions as they play. Active play with technology fosters children’s creative thinking and expression in meaningful ways. Josh DeSantis, an assistant professor of education at Juniata College in Huntingdon, Pennsylvania, shares the following uses of digital interactives with preservice teachers to support the play of young children.

What Are Digital Interactives?
Digital interactives are a form of dynamic Web content that encourage children to engage with information on a Web site. The use of multimedia and animation, as well as children’s ability to interact with digital content, are what differentiate digital interactives from less interactive forms of Web content available to teachers, such as lesson plans or traditional Web sites (Lamb & Johnson, 2010). Digital interactives from nonprofit organizations, such as the National Museum of American History or the Public Broadcasting Service, are free, easily integrated in the classroom, and designed for children at every developmental level.

An effective way for teachers to discover and use interactives in their curriculum is to conduct a search using a digital interactive Web survey to learn about resources for a particular curriculum topic. The survey begins by teachers identifying content areas they wish to augment with digital interactives along with children’s specific needs and developmental levels. For example, a prekindergarten teacher might narrow the search for Web interactives about clothing. Similarly, early primary teachers can refine their search by searching for interactives that support a specific skill, like counting. Late primary teachers can focus their search on a specific theme or unit, such as searching only for
science interactives about animal classification. Teachers can conduct a search using a clearinghouse Web site like the Verizon Foundation’s Thinkfinity site (www.thinkfinity.org) or the Public Broadcasting Service’s teacher-oriented site (www.pbs.org/teachers). These sites allow teachers to narrow their search to specific content areas or grade-level bands. Figure 2.2 shows the steps to use to identify appropriate digital interactives and screenshots from Verizon’s Thinkfinity Web site.

**Why Use Digital Interactives?**

Teachers can use digital interactives to introduce concepts, extend learning opportunities, reinforce skills, or generate student interest in a topic. Thoughtful teaching with digital interactives can create more engaging lessons and reinforce their curricular goals (Coiro & Fogleman, 2011). Digital interactives also offer teachers a transformative resource for teaching essential technology skills outlined by the National Educational Technology Standards for Students (International Society for Technology in Education, 2007) and are available in nearly every subject area and grade level.

Digital interactives do need to be evaluated. You can begin by evaluating the interactive’s potential use as an introductory activity, a way to reinforce content or skill, or a summary activity. For example, *preschool teachers* seeking to integrate the “Dress Caillou” digital interactive might use it to summarize children’s learning about clothing at the end of a lesson. *Early primary teachers* seeking to reinforce their students’ addition skills might decide to use the “How Many Bubbles Under the Shell” digital interactive. *Intermediate teachers* can introduce the concept of categorizing different types of plants and animals by inviting their students to play the “A Touch of Class” game at the beginning of a lesson. Teachers should end their survey by deciding if the digital interactive can be demonstrated to the children using an interactive whiteboard, or would be better suited as an activity to use with personal computers.

**Using Digital Interactives in the Classroom**

The following are examples of appropriate digital interactives at three different levels in the early childhood classroom.

<table>
<thead>
<tr>
<th>Preschool</th>
<th>Primary</th>
<th>Intermediate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A preschool teacher using the PBS site to find digital interactives about clothing and might discover the “Dress Caillou” digital interactive, which invites children to dress a character named Caillou for different types of weather (pbskids.org).</td>
<td>An early primary teacher searching Thinkfinity.org for a digital interactive to reinforce counting skills could discover the “How Many Under the Shell?” digital interactive in which children count the bubbles that Okta the octopus blows under seashells (illuminations.nctm.org).</td>
<td>An intermediate teacher seeking an interactive to help children classify plants and animals could find the “A Touch of Class” digital interactive, which allows children to play a game while sorting different types of creatures into categories (<a href="http://www.sciencenetlinks.com">www.sciencenetlinks.com</a>).</td>
</tr>
</tbody>
</table>
Figure 2.2  Using Digital Interactive Web Surveys

Step #1
Identify the theme, content area, or specific skill you would like to support using digital interactives

- Pre-Kindergarten
  Survey Description
  • Digital interactives that could support a unit on clothing

- Early Primary
  Survey Description
  • Digital interactives that could help students reinforce their addition skill

- Late Primary
  Survey Description
  • Digital interactives to support a unit on organism classification

Step #2
Use a clearinghouse website to search for digital interactives that match your needs

www.thinkfinity.org

Step #3
Evaluate each digital interactive activity as a means of achieving a lesson objective

- Getting dressed
  Look for exceptional summaries for pre-K lessons on clothing and dress

- How many steps?
  Look for outstanding ways to reinforce students’ addition skills during an early primary lesson

- Sorting
  Look for primary lessons on categorization of organisms

Step #4
Identify the tools and technologies you require to integrate the digital interactive during your lesson
Chapter 2  Supporting Children’s Play, Games, and Inventions

For example, teachers of young children frequently encounter children’s conflicts and disputes about toys, space, roles to play, or rules. As a mediator, you will need strategies that help children solve conflicts peacefully. These can include helping children use words to express their needs and feelings; and making play spaces accessible and providing enough materials to share; and giving children enough time to negotiate their own solutions to problems (Wheeler, 2004). Teachers of elementary children often see conflicts over rules of the game, participation, and friends. In the role of mediator, you want to help children develop strategies for solving conflicts so that they can participate in group activities. The role of mediator is a powerful role for the teacher.

You will be using each of these six roles throughout your school day. These roles are especially important, however, as you integrate play, games, and inventions across the curriculum.

DIFFERENTIATING INSTRUCTION: ACCOMMODATIONS FOR DIVERSE LEARNERS

As classrooms become more inclusive, you need to know how to adapt the curriculum so that all children can participate in meaningful play-based experiences. Research shows that play is a key element in the development of children with special needs and those of diverse learners (Casey, 2005; Deiner, 2010; Mindes, 2006). Because there are no “right” or “wrong” ways to play, children’s learning can easily be accommodated through play.

Tips for Supporting Play in an Inclusive Classroom

Teachers can use the following tips to ensure greater inclusivity in their classrooms:

• Provide opportunities for children to invent their own games both indoors and outdoors.
• Observe children at play to identify their strengths and needs. Then provide play experiences that support those strengths.
• Model and teach children specific skills needed to play with peers with disabilities, such as touching a child with a vision disability, or having a child model the activity or game for another.
• Suggest “easy-out” options, such as scorekeeper, banker, or batboy, so that children can leave a game and reenter easily.
• Use simple props to make roles clear, such as having the child who is “it” in tag wear a hat or have teams wear colored vests.
• Modify materials to facilitate play. Use pictures to show game rules and sequence, create a bingo card with fewer spaces, and give a young child fewer rings to stack on a tube.
• Use Web 2.0 tools as a resource for differentiating instruction; a list of recommended apps and Web sites is in the following feature.
THERE’S AN APP FOR THAT

Using Web 2.0 Tools to Support Children’s Play and Games

Injinji Child Development Game Suite
(Ages 18 months to 5 years)
www.injini.net
This suite has over 100 games to play on a tablet computer that are designed specifically for children with learning challenges. The site truly makes learning concepts such as memory, matching, spatial awareness, and cause and effect a pleasure by inviting the child to perform such tasks as helping a frog catch bugs, or popping balloons.

Funology.com
Searchable by age and type of activity
www.funology.com
A repository of games, experiments, recipes, and crafts for children.

Funbrain.com
Searchable by age levels (easy, medium, hard) and topic
www.funbrain.com
Interactive tools and educational games such as Grammar Gorillas and Math-Car Racing encourage kids to learn and serve as inspiration for creating original games. There are also several tie-ins with characters from picture books. The site links words to definitions and has tools for teachers.

Moshimonsters
www.moshimonsters.com
A free online game in which children can adopt and care for a monster. Points, called Rox, are earned by solving puzzles and this currency can be used to purchase items for the monster. As children advance to the higher levels, they can visit new locations. The site also enables them to make friends with other monster owners and leave messages on their pages. Parents must register the child; this is a secure site.

Sparktop
www.sparktop.org
Sparktop has games, painting, and learning activities. Kids can earn SparkPoints and “buy” stuff at the SparkMart. There is also a message board area. Sparktop is specifically designed to help kids who have learning difficulties,
Chapter 2  Supporting Children’s Play, Games, and Inventions

but it has fun stuff all kids can enjoy. Parents must register their children and children cannot share personal information.

Toca Robot Lab  
(Ages 3 to 6)  
www.tocaboca.com

At this site, children can assemble a robot from a wide assortment of component parts. After it is complete, it is taken by electromagnet to the factory and is issued papers. Have children work in groups to manufacture other items.

Games that Make You Think  
www.zoopz.com

Primary Games  
www.primarygames.com

Build a Neighborhood  
(Ages 18 months to 8 years)  
pbskids.org

Part of the Mister Rogers site, this enables children to represent their communities or invent imaginary neighborhoods.

U.S. Space Camp  
(Ages 7 to adult)  
www.spacecamp.com

Children (and adults) can have a simulated experience as astronauts on this popular site. Use it to invite children to invent other types of virtual experiences associated with various occupations.

Iknowthat.com  
(Ages 5 to 15)  
www.iknowthat.com

A host of educational games for children with a section for teachers and parents. It is advertising free and games are organized by grade level for ease of use.

Kindle Park  
(Ages 3 to 8)  
www.kindlepark.com

Activities and games geared toward younger children and linked with Weekly Reader, this site is a virtual playground for children. It also has a special section for using the site in the classroom with ideas for teachers.
Tools to Support Play, Games, and Inventions: Specific Suggestions for Diverse Learners

Children with Developmental or Language Delays
Children with mild language disabilities usually follow the same stages of play as their peers without disabilities, but their social interaction skills are often delayed. This can lead to more solitary, less cooperative play (Hestenes & Carroll, 2000). Consider the following adaptations:

- Provide many opportunities for dramatic play so children feel a part of the group and are comfortable interacting with others.
- Use “scripted play” through a prepared guide in particular play situations. For example, you may create and practice a script to help children understand and use the language needed to enter a play situation (Neeley, Neeley, Justen, & Tipton-Sumner, 2001).
- Simplify directions and uses for games and toys into language that the child can understand.

Children with Visual Impairments
Children with total vision loss or limited sight often do not pick up unfamiliar toys that they can become familiar with through practice (J. Johnson et al., 2005). You might try the following:

- Encourage children to feel play objects to familiarize themselves with the functions of materials and toys. If you make changes to play areas, have children explore these changes through touch and by walking the new areas.
- Teach other children how to physically guide their friend into play situations. Use verbal or physical cues to direct children to equipment, friends, and toys during outdoor play.
- Create an eye doctor’s office with a variety of props such as an eye chart, glass frames, mirror, and index cards with eye chart symbols (Deiner, 2010).

Children with Autism Spectrum Disorder
Children with autism spectrum disorder (ASD) have difficulty with social skills and often lack the mental representations and language needed for pretend and spontaneous play (National Institute of Mental Health, 2012; Wolfberg, 2009). Consider these strategies:

- Teach children the skills needed to play through modeling and intervention, such as turn-taking, asking for an object, or sharing.
- Respect children’s preference for a particular area of the room, need for personal space, and ability to tolerate others in an activity (Peter, 2003).
- Explain what is happening in the play setting, such as adding a new toy to the play area, introducing another child, or engaging in fantasy play.
Chapter 2  Supporting Children’s Play, Games, and Inventions

- Keep experiences familiar to the child; gradually extend their comfort level with others, objects, and types of play.
- Create clear physical boundaries when outdoors and specify how to use each toy and piece of equipment.

Children Who Are English Language Learners

Children whose first language is not English—English language learners, or ELLs—enter school with a variety of cultural experiences and styles of play. Play is a key element in helping them learn the language of school and learning. Consider the following adaptations:

- Equip the family living area with household items and everyday objects that are familiar and interesting to the children. Talk about the items with the children as they use them in their play. Be sure to change the items in the area as your projects or themes change to help children learn new words and the structure of the English language.
- Play movement games using objects of different colors and ask children to catch, jump over, bend and get, twirl, or toss the object that you name. Vary this game by color, sound, or shape to enhance vocabulary development and to get in touch with their bodies.
- Use manipulatives. Most children are more comfortable talking about an object that they are holding and can look at while talking.

Play is a natural part of all children’s daily lives. You can meet all standards by including play in your curriculum.

MEETING STANDARDS THROUGH PLAY

Incorporating Play in Inquiry-Based Units on “Change”

Standards guide what children should know and be able to do in a given content area at a given time. They are used to assess student learning and promote accountability. While there are no specific play standards, play-based experiences provide an important way to teach to standards in each curriculum area, use an inquiry approach to learning, and gain important knowledge about children’s thinking. Play experiences also meet national teacher education standards.

The four types of cognitive play discussed in this chapter—functional play, symbolic play, constructive play, and games with rules—provide a framework for an inquiry-based approach to learning. They give children opportunities to explore and clarify ideas, describe and synthesize information as they come to understand their world. For example:

In functional play, children explore objects with all of their senses, which involves experimenting with materials.
Part 1  Foundations of Creative Thought

In *symbolic play*, children transform their world into symbols, which involves brainstorming, role-playing, and teamwork.

In *constructive play*, children create something or solve a problem according to a preconceived plan, which involves “thinking out of the box.”

In *games with rules*, children rely on prearranged rules that guide acceptable play behavior of reciprocity and turn-taking, which involves strategic thinking and teamwork.

Youngquist and Pataray-Ching (2004) suggest that play-based experiences be viewed as acts of inquiry, a term that requires creative, reflective, and investigative thinking. When viewed as a form of inquiry, play-based learning becomes a powerful way for children to use the mental characteristics critical to successful school-based learning—curiosity, persistence, imagination, and inventiveness. Many teachers find that the content-area concepts children have to learn lend themselves naturally to play-based learning.

What follows are examples of how teachers incorporate play-based experiences across grade levels and content areas in different inquiry-based units on the broad concept of change. First is a list of key content-area standards for students. Next is a brief description of an appropriate unit followed by examples of play-based, age-appropriate experiences. Each example identifies the types of play used and the content-area standard it addresses. Following the content-area student standards are the teacher education professional practice standards that can be met.

**Content-Area Standards Related to the Concept of Change**

*Social Studies Standard: Time, Continuity, and Change:* Students should study the ways human beings view themselves in and over time.

*Mathematics: Patterns, Functions, and Algebra:* Students should be able to analyze change in various contexts.

*Science Standard: Science as Inquiry:* Students develop abilities necessary to do scientific inquiry and understandings about scientific inquiry.

*Language Arts Standard:* Students should use language appropriately in daily use as well as use new vocabulary to describe feelings, thoughts, experiences, and observations.

**Teacher Education Standards**

*National Association for the Education of Young Children (NAEYC): Standard 4b Teaching and Learning:* Knowing, understanding, and using effective approaches, strategies, and tools for early education.

*Interstate Teacher Assessment and Support Consortium (InTASC) Standard 1: Learner Development:* The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary
Chapter 2 Supporting Children’s Play, Games, and Inventions

individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.

Examples for Preschool–Kindergarten
Preschoolers and kindergartners are learning about themselves and their personal pasts. Their earliest understandings of history begin with learning about their own changing characteristics, such as the changes in the way they look, what they eat, what they play with, what they wear, what they can do, and what they know.

Appropriate Play-Based Learning Experiences

Functional Play
• Explore with senses different tastes of baby food compared with real food. Graph with pictures favorite tastes of baby food and food they like now. (Math)

Symbolic Play
• Role-play familiar roles such as baby, toddler, and adult. Include diapers, baby clothes, dolls, infant and toddler toys, sippy cups, booster seats, and a variety of adult clothing. Children can enact what they use today, compare with what they used when they were babies, and what they might use when they are grown up. (Language Arts/Social Studies)

Constructive Play
• Construct a picture-rebus timeline of children’s lives. Use photos and drawings to chronicle children’s changing abilities from birth to present, such as changes in height, number of teeth, amount of hair, how many letters they know, or how much they weigh. Be sure to use drawings for every child to be sensitive to children who do not have access to photos of their childhood. (Math/Social Studies)

Games with Rules
• Play “Guess Who I Am?” or a Name Chant. (Language Arts/Social Studies)

Now, add to these examples using one or more of the content-area standards.

Examples for First Grade–Second Grade
First and second graders often study the water cycle, which involves learning about evaporation, condensation, precipitation, and collection. They learn that water moves in a continuous cycle between the air, the ground, and plants and animals. Children are naturally motivated to use the following kinds of play-based inquiry experiences to find out how the water cycle works.
Appropriate Play-Based Learning Experiences

Functional Play

• Explore the changes that water causes in the soil. Using soil, pebbles, and containers, children can explore soil changes when adding different amounts of water and what happens to water when they make a channel. Explore also samples of muddy water to observe the sediment when it settles. Describe patterns. (Math/Science)

Constructive Play

• Collaborate with others to build a model of the water cycle using clear plastic containers, sand, pebbles, a small amount of water, and leaves. (Science/Math/Language Arts)

Games with Rules

• Create a game that includes “water facts.” (Science/Language Arts)
• Create a word search using different water cycle terms, such as water, fresh, safe, clean.
• Make a puppet and some rain sticks and tell the story of It Rained on the Desert Today (Buchanan, 1994) or Water Dance (Locker, 2002). What happens to the dry desert or your backyard when it rains? (Science/Language Arts)

Symbolic Play

• Role-play different parts of the water cycle. (Science)

Now, add to these examples using one or more of the content-area standards.

Examples for Third Grade–Fourth Grade

As part of their historical study of the colonial period, third and fourth graders learn about the founding and expansion of the 13 original colonies. Through research and interpretation of daily life in the colonial period, the children find out about the types of homes, transportation, activities, games, recipes, clothing, and tools that were used in colonial days. They also learn about people and places.

Appropriate Play-Based Learning Experiences

Constructive Play

• Construct a three-dimensional or salt dough map that illustrates different features of colonial times and colonial communities. (Social Studies/Math/Language Arts)
• Visualize a timeline starting with colonial games and toys and compare them to the kinds of toys and games we use today. Select, organize, and sequence information about the toy’s functional role in the historical era. Brainstorm reasons why and how some of these toys were used. (Math)
• Construct scale models of a colonial ship of choice. (Math)
Chapter 2  Supporting Children’s Play, Games, and Inventions

Games with Rules

- Construct a game on the chronology of toys using various sources of information such as pictures, charts, inventors, and photographs to show an understanding of the past. (Social Studies/Language Arts)
- Create colonial word problems using metrics. (Math/Language Arts)

Symbolic Play

- Write a skit to communicate to younger children the different toys, clothing, and foods used long ago and why they were appropriate. Enact that skit for children of different ages. (Language Arts/Social Studies)
- Role-play the different occupations such as blacksmith, cooper, miller, cobbler, silversmith, tinsmith, and town crier that were common in colonial days. (Language Arts/Social Studies)

Frequently Asked Questions About Play, Games, and Inventions

Why is recess so important for elementary school children?

Recess is the time for children to “take a break” from the focused academic activities of the classroom and engage in active, unstructured, and supervised activity. Whether it occurs indoors or outdoors, recess has many benefits. First, recess provides children with opportunities to develop healthy bodies and have ample time to participate in exercise and movement, which can reduce stress. Second, it maximizes children's interaction with peers on their own terms without the structure of the rest of the school day. Third, recess positively impacts academic performance by increasing children's ability to pay attention to academic tasks after a recess break; and fourth, it provides opportunities for children to refine their social competencies of sharing, cooperation, conflict resolution, communication, and problem solving through the play and games traditionally seen at recess (Frost et al., 2012; O'Brien, 2003; Pellegrini & Holmes, 2006).

Today, recess in schools is in jeopardy. As a result, the National Association of Early Childhood Specialists in State Departments of Education (NAECS-SDE, 2002) and the National Association for Sport and Physical Education (NASPE, 2006) have recommended that elementary children get at least 20 minutes of recess each day without the structure of a physical education class. Recess should be a time when children choose their activity and playmates.

I want to teach older children. Why do I need to know about play when most principals and parents oppose the use of play in elementary schools?

While some consider play trivial and simple, and even a waste of time, play is not wasted time but rather time spent building new knowledge from previous experience (Frost et al., 2012; Piaget, 1962). Children in later childhood show an eagerness to learn about their expanding world, which becomes evident in their play. You can capitalize on this new sense of wanting to show mastery of their world by encouraging them to create “mini worlds” that feed their imagination through invented games, storytelling, or dramatic reenactments. Older children take ownership of new information by playing with it. When children perceive learning as relevant, it becomes part of their long-term memory; when children perceive learning as irrelevant, such as a continuous series of memorizing isolated facts and meaningless concepts, it typically will not become part of long-term memory.

(Continued)
How does play support children from diverse backgrounds?
With greater frequency, today’s classrooms include children whose native language is not English and who have many different cultural and ethnic backgrounds. Children’s play provides information about who they are and enables them to better understand others. Teachers can help realize play’s potential for children from different cultures, races, and ethnic backgrounds in a variety of ways (Banks, 2005; Jalongo, 1991; Tiedt & Tiedt, 2010). First, you must recognize and respect ethnic and cultural differences by asking yourself some difficult questions to discover your basic attitude toward others, such as the following: Am I aware of my own biases toward different populations? Do I recognize that different child-rearing practices affect a child’s play? Second, you can help children explore their cultural backgrounds through appropriate play-based experiences. A curriculum sensitive to diversity helps children appreciate their personal histories. As a teacher, you need to know enough about children and their families to make informed curriculum decisions, such as learning the background and culture of the children, finding out how long families have been in this country, what toys and materials children use at home, and what experiences have the children had outside the home (such as eating in a certain kind of restaurant or observing cars being repaired at a gas station). This information is critical to providing relevant and familiar play experiences. Third, teachers need to be particularly sensitive to gender and racial issues as children enact familiar roles. How teachers communicate messages about what girls, boys, and people of color can do affects how children view themselves and their competencies. In preparing children for today’s and tomorrow’s world, be sure to use culturally diverse materials and experiences, such as puppets, dolls, puzzles, music, art, and books in the room; that they provide enough novelty and challenge for all; and that all children are free to enact different roles.

CONCLUSION

Play is children’s natural resource for developing social and cognitive skills that affect their present and future social competence. If we look at the best practices in each area of the curriculum, such as hands-on science, math manipulatives, music laboratories, and writers’ workshops, it is easy to see that all of these approaches are play-based and support children’s curiosity, motivation, attention, and thinking (E. Miller & Almon, 2009). Early childhood teachers must understand that play offers all children a way to express themselves, test their knowledge, and gain support for what they are learning (Hirsh-Pasek et al., 2009; Pellis & Pellis, 2009; Saracho, 2012b).

CHAPTER SUMMARY

1. Play has been studied from different perspectives, yet experts do not agree on its definition or primary purpose. Experts do agree, however, on at least five essential characteristics.
Chapter 2  Supporting Children’s Play, Games, and Inventions

2. Play and the creative arts are important contexts for developmentally appropriate practice and support children’s development and learning across ages, domains, and cultures.

3. Play contributes to all areas of children’s development. It is the primary vehicle through which their cognitive, language, literacy, social-emotional, and creative development occurs.

4. The four types of cognitive play are functional play, symbolic play, constructive play, and games with rules. Social play develops along a continuum from solitary play (least mature) to cooperative play (most mature).

5. Both classical and modern theories have influenced how play is viewed in the early childhood curriculum. These theories are essential to understanding why children play and must be used as a basis of curriculum planning.

6. Playing with new technologies and interactive media provides children with opportunities to make decisions as they play.

7. Teachers need to know how to adapt their curriculum to include all children in meaningful play-based experiences.

8. Teachers have at least six roles in supporting children’s play—observer, collaborator, planner, responder, role model, and mediator. Each of these roles must be fulfilled to support children’s learning and development through play.

Discuss: Perspectives on Play, Games, and Inventions

1. Review the six roles of the teacher discussed in this chapter. Of what significance is it to assume these different roles? Cite some examples from your personal or field experience that illustrate these roles.

2. Reread the “Teachers’ Reflections on Play, Games, and Inventions” section early in this chapter. In what ways are these teachers’ reflections similar or different in their thinking about play? Talk about which of these teachers’ reflections made an impression on how you think about play after reading this chapter.

3. With the increased emphasis on test scores and high standards, how do you think play can help children develop the knowledge and skills they need to be successful in school and in the workplace of the future? What do you believe about the importance of play? Tell why.

Assess: Children’s Play

1. Documenting Children’s Literacy Learning Through Play
   Use the following checklist for documenting children’s literacy learning through play.
### Child’s Name: ________________________________________________________________

**Demonstrates “readinglike,” literate behaviors**
- Looks at books and print materials that reflect their interests
- Does pretend writing
- Shares reading/writing ideas with friends
- Uses sound spelling to write notes
- Practices reading familiar stories

**Shows understanding of stories and narrative language**
- Acts out pretend stories
- Tells a story through drawing, puppets, or other media
- Engages in dramatic retellings that include _____ characters, _____ setting, _____ conflict, _____ plot, and _____ solution
- Dramatic retellings use story structure (e.g., beginning, middle, and end)

**Explores conventions of print**
- Writes messages in dramatic play center
- Copies letters and words from other print materials
- Reads messages to others during dramatic play or story retellings

**Investigates book knowledge and the language of books**
- Turns pages left to right
- Distinguishes between pictures and print
- Makes up words and stories to match pictures
- Reads books with familiar patterns or repetitive language
- Names some print while reading

**Experiments with a variety of forms of written language**
- Announcements
- Calendars/Invitations
- Money/cash registers
- Coupons/Labels
- Library cards
- Notes/Recipes
- Signs
- Tickets
- Other:____________________

**Statement of literacy behaviors demonstrated:**

**Ideas for furthering literacy development:**

**Suggestions for parents:**

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2. **Assessing Children’s Sociodramatic and Dramatic Play Levels**

Use Table 2.4 to assess children’s beginning or advanced levels of play.